Message

From: Defense Tech Expos [lrinaldo@cox.net]
Sent: 1/17/2019 6:08:19 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Invitation Federal Small Business Procurement & Tech Plus Expo DC

Invitation Federal Small Business Procurement & Tech Plus Expo DC

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When: 2.21.19

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Time: 9:00 AM - 2:00 PM

Larry Rinaldo

Defense Tech Expos

More information is available from 703-344-8771

Questions/Please RSVP to: LRinaldo@cox.ne t

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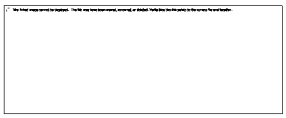

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Message

From: Norman Anderson [norman@cg-la.com]
Sent: 1/10/2019 8:56:17 PM
To: Wheeler, Andrew [wheeler.andrew@epa.gov]
CC: Jackson, Ryan [jackson.ryan@epa.gov]; Humphreys, Hayly [humphreys.hayly@epa.gov]
Subject: Strategic 25 Projects, and Confirmation Hearings

Good Afternoon Andrew:

Congratulations on yesterday's nomination. We hope that it proceeds calmly and expeditiously through the confirmation process.

This is a quick note to bring you up to date on our efforts to identify and expedite the authorization of specific, critical projects which need to be built as soon as possible in order to serve the national interest.

We expect to announce, in the very near future, the standing up of a "National Infrastructure Performance Council", chaired by Hank Greenberg and Ross Perot Jr., with selected board members of similar stature, which will work to identify these critical national interest projects - addressing regulatory and financing "bottlenecks" which impede their progress.

Along with transit (Texas Central Rail), airports, and port projects, along with water projects throughout the country, one of the most important categories to be addressed are the Crude Oil Export Terminals proposed on the Gulf Coast. Our preliminary understanding is that these key facilities are being impeded by confusion over applicable law and agency jurisdiction. This will be one of the early issues for our Council's consideration.

I am including a link to the quick survey that is being sent to senior officials of the affected companies. We hope the results will help inform the Council's initial recommendation.

https://www.surveymonkey.com/r/BLUEPRINT2025SURVEY

We hope to follow up with a similar process for additional key categories and will keep you posted on progress. In addition, as I mentioned, Hank Greenberg would be more than happy to meet with you during your next trip to New York. We just met with the head of a key Senate committee, and they are scheduling hearings during our Blueprint 2025 Leadership Forum in May (hopefully you will be able to participate and speak as well).

Lastly we brought 14 business leaders in to see Ray Washburne before the holidays, and I would love to bring in key leaders in infrastructure to meet with you when convenient.

Again, the time you spent with me is greatly appreciated and your continued input into our process would be highly valued.

Best of luck, Norman

PS Virtually all of the projects on our list of 25 Strategic Priority Projects are running into unexplained permitting and approval difficulties - just like your Superfund approach, we need to solve these problems one by one.

--

Norman F. Anderson
Chairman & CEO
CG/LA Infrastructure, Inc.
P: 202.776.0990
E: norman@cg-la.com
Take the 2018 State of Infrastructure Survey here #ThinkInfra

Message

From: API SmartBrief [api@smartbrief.com]
Sent: 1/22/2019 2:44:17 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Let us keep you informed

API SmartBrief

Created for **jackson.ryan@epa.gov** | Web Version

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January 22, 2019

TOP STORY

US oil, gas firms to boost spending in 2019 as outlook brightens

A survey conducted by DNV GL revealed that 70% of 791 senior industry professionals polled expect their firms to maintain or increase capital expenditure budgets this year, up from 39% just two years ago. Liv Hovem, who leads DNV's oil and gas division, says the survey results demonstrate that the industry is more confident in its ability to weather market volatility and adapt to lengthy periods of low prices.

Reuters (1/22)

(Gianluigi Guercia/AFP/Getty Images)

INDUSTRY NEWS

IEA forecasts stronger global oil demand in 2019

The International Energy Agency projects global oil demand will grow by 1.4 million barrels per day this year, up from 1.3 million bpd in 2018, but the outlook may change in light of slowing global economic activity. The IEA also said the oil market should regain balance in the first half of this year if OPEC producers stick to agreed-upon production cuts.

Yahoo/Bloomberg (1/18)

Looming marine fuel sulfur rules could raise costs for consumers

The International Maritime Organization's plan to limit the sulfur content in marine fuels starting within the next year is expected to increase the shipping industry's fuel costs by about $60 billion, a sum that will likely be passed on to consumers. Increased demand for low-sulfur marine fuels could also send diesel and jet fuel prices soaring, resulting in higher costs for trucking companies and airlines.

Houston Chronicle (tiered subscription model) (1/21)

FERC gives legal status to activists opposing Texas LNG project

Federal Energy Regulatory Commission Deputy Secretary Nathaniel Davis extended motion to intervene status to Save RGV From LNG, enabling the anti-LNG group to fight the proposed Texas LNG project at the Port of Brownsville. FERC is due to publish a final environmental assessment for the 2 million-metric-tons-a-year project in March.

Houston Chronicle (tiered subscription model) (1/21)

TECHNOLOGY & INNOVATION

BP develops seismic device for offshore oil, gas exploration

BP, which used Full Waveform Inversion seismic software to find oil in the Gulf of Mexico, says it has developed an undersea device called Wolfspar to operate in conjunction with the software. BP scientist John Etgen says the company will use Wolfspar -- which is towed by a ship and sends infrasound rays that can penetrate ocean salt layers -- in a Gulf of Mexico field during the second half of 2019 and later at Brazilian and Angolan hydrocarbon basins.

Reuters (1/18)

Data monitoring offers special promise for pipelines

Digital data monitoring is especially promising for operators of oil and gas pipelines, where assets are physically spread out, not easily visible, used by a variety of customers and prone to communication problems. For example, one pipeline organization lost $1.9 million due to downtime when a programmable logic controller went down due to a slowly developing problem that could have been detected by a monitoring system.

Oil & Gas Engineering (1/18)

POLICY WATCH

N.D. regulators update oil conditioning rules

The North Dakota Industrial Commission has changed the frequency and timing of vapor pressure testing for conditioned crude oil, but it is keeping vapor pressure limits at 13.7 pounds per square inch. Under the new rules, companies must conduct two vapor pressure tests annually instead of four -- one between Oct. 1 and Dec. 31, and the second between Jan. 1 and March 31.

The Bismarck Tribune (N.D.) (1/18)

API NEWS

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The inspector course is intended to familiarize the participant with proper inspection and maintenance criteria and techniques as well as safety concerns and is intended to give the individual the knowledge and skills required to identify the major inspections areas to competently act as a Qualified Inspector and effectively conduct safe operations. Presented by: Thunder Oilfield Services (Thailand) Ltd., March 25-29. To learn more and to register, visit the API-U Calendar.

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Message

From: Hewitt, James [hewitt.james@epa.gov]
Sent: 3/29/2019 1:56:55 PM
To: Kevin Bogardus [kbogardus@eenews.net]; Schiermeyer, Corry [schiermeyer.corry@epa.gov]; Konkus, John [konkus.john@epa.gov]; Abboud, Michael [abboud.michael@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]; Press [Press@epa.gov]
Subject: RE: EPA ethics memos on former EPA Administrator Scott Pruitt's condo
Attachments: OIG semi annual Nov 2018.pdf

Kevin, I'll refer you two the March 30th and an April 4th memos (reported by E&E news) as well as page 12 of the OIG's semi-annual report from last year. As you know, this official is longer with EPA.

From: Kevin Bogardus <kbogardus@eenews.net>
Sent: Friday, March 29, 2019 8:37 AM
To: Schiermeyer, Corry <schiermeyer.corry@epa.gov>; Konkus, John <konkus.john@epa.gov>; Abboud, Michael <abboud.michael@epa.gov>; Hewitt, James <hewitt.james@epa.gov>; Jackson, Ryan <jackson.ryan@epa.gov>; Press <Press@epa.gov>
Subject: RE: EPA ethics memos on former EPA Administrator Scott Pruitt's condo

Hey everybody, it's Kevin Bogardus with E&E News again. I'm just checking in. Any thoughts on the below? Please let me know before noon EST today, which is my deadline. Thanks for your help.

-Kevin

From: Kevin Bogardus
Sent: Thursday, March 28, 2019 3:58 PM
To: 'Schiermeyer, Corry' <schiermeyer.corry@epa.gov>; 'Konkus, John' <konkus.john@epa.gov>; 'Abboud, Michael' <abboud.michael@epa.gov>; 'Hewitt, James' <hewitt.james@epa.gov>; 'Jackson, Ryan' <jackson.ryan@epa.gov>; 'Press' <Press@epa.gov>
Subject: EPA ethics memos on former EPA Administrator Scott Pruitt's condo

Hey everyone,

It's Kevin Bogardus with E&E News.

I'm working on a story about last year's process behind the two EPA ethics memos related to former EPA Administrator Scott Pruitt's rent of a Capitol Hill condo. I have obtained under the Freedom of Information Act emails dealing with that episode, which I will link to and quote from in my story. I have also cc'ed Ryan on this email because he was involved and has responded to my questions in the past about this episode.

First, I had a few questions about this, which are:

- Kevin Minoli, then EPA's designated agency ethics official, and Justina Fugh, EPA's senior counsel for ethics, shared a draft of the April 4, 2018 memo (https://www.eenews.net/assets/2018/04/05/document_gw_04.pdf) with Walter Shaub, the former Office of Government Ethics director who has been critical of the Trump administration, and asked for his input (please see 69-70). Were EPA political appointees aware at the time that EPA ethics officials had sought Shaub's advice? Why did EPA ethics officials seek Shaub's advice? How would EPA characterize Shaub's role in the drafting of the April 4, 2018 memo?

- Jeffry Fowley, a former EPA attorney, filed an complaint with OGE about EPA's ethics process related to Pruitt's rent of the condo, which was also sent to the EPA Office of General Counsel and the EPA Inspector General (please see 217-218). How was Fowley's complaint resolved? Did someone investigate in response to his complaint? If so, who? And what were their findings?

- Minoli invited then-Acting OGE Director and General Counsel David Apol to speak to EPA officials on April 13, 2018 "to address the current ethics crisis facing the agency" (please see Referral to EPA records_Redacted). It seems only career EPA officials attended Apol's speech. That said, did any EPA political appointees attend Apol's speech? If so, who attended? Did Pruitt attend Apol's speech?

Second, I wanted to give you a heads up about some other emails I plan to quote from and link to my story, which I summarize below in bullet points. I don't have any questions for you about these emails but if you want to share any thoughts on any of them, please let me know.

- Minoli notes concerns about how the March, 30, 2018 memo was being described by EPA press officials (please see 343).

- Fugh had "a long chat" with Apol (please see 80).

- Fugh recounts the events leading to her verbal opinion on Pruitt's condo on March 29, 2018 (please see 200-201), which she also confirmed in writing that night (please see 72).

- Fugh received several messages of support during this episode (please see 21-22) and also expressed frustration to her staff (please see 15).

Please get back to me as soon as possible. My deadline is noon EST Friday, March 29, but the sooner you get back to me, the more it helps my reporting. Thank you for your help.

Kevin Bogardus
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OFFICE OF INSPECTOR GENERAL

Semiannual Report to Congress

April 1, 2018–September 30, 2018

EPA-350-R-18-003
November 2018

Index of Reporting Requirements

Inspector General Act of 1978, as amended

Requirement	Subject	Page
Section 5(a)(1)	Significant problems, abuses and deficiencies	12–32
Section 5(a)(2)	Significant recommendations for corrective action	14–25, 30–31
Section 5(a)(3)	Reports with corrective action not completed	4–7, 48–56
Section 5(a)(4)	Matters referred to prosecutive authorities	26–29, 32, 42–43, 57–64
Section 5(a)(5)	Information or assistance refused	11
Section 5(a)(6)	List of reports issued	44–45
Section 5(a)(7)	Summaries of significant reports	12, 14–25, 30–31, 34–36
Section 5(a)(8)	Audit, inspection and evaluation reports—questioned costs	2, 40–41, 44–45
Section 5(a)(9)	Audit, inspection and evaluation reports—funds to be put to better use	2, 40–41, 44–45
Section 5(a)(10)	Prior audit, inspection and evaluation reports unresolved	41, 46–47
Section 5(a)(11)	Significant revised management decisions	None
Section 5(a)(12)	Significant management decisions with which OIG disagreed	None
Section 5(a)(14–16)	Peer reviews conducted	65
Section 5(a)(17–18)	Statistics on investigative reports, referrals, prosecutions, indictments	29, 40, 42–43
Section 5(a)(19)	Substantiated Investigations involving senior government employees	57–58
Section 5(a)(20)	Description of whistleblower retaliation	11
Section 5(a)(21)	Any establishment attempts to interfere with independence	11
Section 5(a)(22)	Closed audits, evaluations and investigations not disclosed to public	57–64

Abbreviations

CSB	U.S. Chemical Safety and Hazard Investigation Board
EPA	U.S. Environmental Protection Agency
FY	Fiscal Year
OIG	Office of Inspector General
U.S.C.	United States Code
SES	Senior Executive Service

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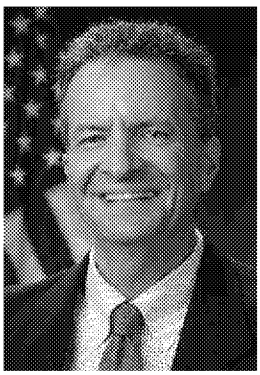
Message to Congress


Charles J. Sheehan

The U.S. Environmental Protection Agency's (EPA's) Office of Inspector General (OIG) is pleased to present this semiannual report for the period ending September 30, 2018. The work produced by the OIG the past 6 months was broad in scope and deep in rigor. The results are a direct reflection of my predecessor, Inspector General Arthur A. Elkins Jr., who, after more than 8 years, retired on October 12, 2018. As acting Inspector General, my mission—with the indispensable aid of a staff of high talents and substantial experience—is to continue to advance the EPA OIG as an independent oversight organization trusted to speak truth and promote good governance and, by doing so, contribute to improved human health and the environment.

The EPA OIG confronts ever-increasing pressures to address significant issues of the day in the face of constrained budgets generally trending downward. Since 2014, our annual budget has shrunk over $1 million dollars. In fiscal year (FY) 2018, we received an unprecedented number of congressional requests to audit and investigate. Against the backdrop of much ongoing work, our charge in FY 2018 was to balance important and competing interests and make difficult decisions about accepting new requests—which could displace ongoing work. At the same time, audits mandated by Congress, more of which are gradually added to our plate over time, limit our flexibility to accept even worthy requests. Nonetheless, despite twin constraints of a tight budget and required reports narrowing the band of issues that we can tackle at our discretion, the EPA OIG continues to generate an impressive body of accomplishments.

Our Core: Integrity, Health and Environmental Concerns

Our investigators, auditors, evaluators and other staff marshalled collective efforts to comprehensively and carefully—yet expeditiously—address a range of matters related to Scott Pruitt, the EPA Administrator until July 2018. These matters included potential threats made against him; his travel, calendars and security detail; his hiring, reassignment and demotion of staff; and alleged misuse of his position. Although some requested work was not initiated or able to be completed due to Administrator Pruitt's resignation, two significant audits were released. While assessing the Administrator's use of hiring authorities under the Safe Drinking Water Act, we found that six employees received substantial pay increases along with conversions of their positions. We issued a "management alert" to so notify the agency while our broader audit work on the matter continues. In addition, our audit of the Administrator's Protective Service Detail found that the agency had no approved standard operating procedures to address the level of protection required or how those services are provided.

Other OIG work impacted how the EPA can intervene to help protect communities from drinking water contamination, the health of our children in schools and the oversight of automobile emissions. A key report looked at lapses by the EPA when responding to water contamination in Flint, Michigan, including a recommendation that the EPA establish controls to verify that states are monitoring compliance with all Lead and Copper Rule requirements, which could improve the quality and safety of our drinking water nationwide. By using lessons learned from the Flint crisis, the agency can establish clear oversight roles,

implement an effective system to evaluate risk, and improve the effectiveness of monitoring in the event of a similar situation.

In another audit, we found that EPA regions significantly reduced or eliminated resources for their asbestos programs, including inspecting for asbestos in schools. Without inspections, the EPA cannot know whether schools pose an actual risk of asbestos exposure to children and staff. We also assessed whether the EPA has implemented stronger controls to detect instances of emissions fraud since Volkswagen was found cheating the emissions testing process in 2015. Our audit found that although the EPA has augmented its testing, further improvements could be made to prevent noncompliance with mobile source regulations, which can lead to excess emissions of pollutants.

OIG Accomplishments
(this reporting period and fiscal year 2018)

- **Questioned costs and potential monetary benefits** *(includes results from single audits)*
  April 1–September 30, 2018: $3.503 million
  FY 2018: $378.243 million
- **Total fines and recoveries** *(includes EPA only and joint investigations)*
  April 1–September 30, 2018: $1.124 million
  FY 2018: $1.651 million
- **Reports issued**
  April 1–September 30, 2018: 34 reports
  FY 2018: 52 reports
- **Investigative cases closed**
  April 1–September 30, 2018: 80 cases
  FY 2018: 134 cases
- **Administrative actions resulting from investigative cases**
  April 1–September 30, 2018: 63 actions
  FY 2018: 106 actions
- **Hotline inquiries closed**
  April 1–September 30, 2018: 98 inquiries
  FY 2018: 221 inquiries
- **Hotline inquiries referred for action**
  April 1–September 30, 2018: 180 inquiries
  FY 2018: 377 inquiries

Throughout this body of audits, the OIG continues its tradition of fair, balanced reporting. When the facts so warrant, as they frequently did this year, our reports tout agency "noteworthy achievements" or "best practices." An audit that shows a well-functioning program or operation with no deficiencies—also the case in several instances this year—gives due credit and makes no recommendation for improvements.

Our Influence: OIG Recommendations and Agency Corrective Actions

An especially telling measurement of our impact is the agency's recognition of the value of our recommendations and investigative findings. Of 170 recommendations for improvement we made in audit reports in FY 2018, agency leadership agreed with 153 (90 percent). Of 18 Reports of Investigation we referred to the agency in FY 2018, 16 were accepted for action (89 percent).

Lastly, this year—the 40th anniversary of the Inspector General Act—is fresh reinforcement of the value of Inspectors General, who promote and facilitate the efficiency, effectiveness and wise spending of taxpayer dollars. Our office was one of the original 12 OIGs created in 1978. Our community has grown to include 73 Inspectors General who oversee nearly every aspect of the federal government. We look forward to continuing independent and effective oversight of the EPA and the U.S. Chemical Safety and Hazard Investigation Board, as well as working with our Inspector General community on issues cutting across the entire federal government.

Charles J. Sheehan

Charles J. Sheehan
Acting Inspector General

Table of Contents

About EPA and Its Office of Inspector General 1

Scoreboard of Results 2

FY 2018 EPA Management Challenges Issued 3

Status of OIG Unimplemented Recommendations 4

Acting Administrator Wheeler Emphasizes Need for Cooperation with OIG 8

Furthering EPA's Efforts 9

Status of Whistleblower Retaliation and Interference with Independence 11

Significant OIG Activity 12

- Congressionally Requested Activities 12
- Human Health and Environmental Issues 14
- Agency Business Practices and Accountability 21
- Investigations 26
- Hotline Activities 30
- Other Activities 34
- U.S. Chemical Safety and Hazard Investigation Board 35

Other Results of OIG Work 37

- Follow-Up Is Important Aspect of OIG Efforts 37
- Single Audit Reporting Efforts Make Impact 38
- Agency Best Practices 39

Statistical Data 40

- Profile of Activities and Results 40
- Audit Report Resolution 41
- Summary of Investigative Results 42

Appendices 44

- Appendix 1—Reports Issued 44
- Appendix 2—Reports Issued Without Management Decisions 46
- Appendix 3—Reports with Corrective Action Not Completed 48
- Appendix 4—Closed Investigations Not Publicly Disclosed 57
- Appendix 5—Peer Reviews Conducted 65
- Appendix 6—OIG Mailing Addresses and Telephone Numbers 66

About EPA and Its Office of Inspector General

U.S. Environmental Protection Agency

The mission of the U.S. Environmental Protection Agency (EPA) is to protect human health and the environment. As America's steward for the environment since 1970, the EPA has endeavored to ensure that the public has air that is safe to breathe, water that is clean and safe to drink, food that is free from dangerous pesticide residues, and communities that are protected from toxic chemicals.

EPA Office of Inspector General

EPA OIG Peer Reviewed

The systems of quality control for the EPA OIG are peer reviewed by another OIG on a regular basis to ensure that the EPA OIG satisfies professional standards. On June 18, 2018, the EPA OIG audit organization received an external peer review rating of *pass*—the highest rating possible. On June 11, 2018, the EPA OIG's investigations office was found to have no deficiencies, as well as to have internal safeguards and management procedures compliant with quality standards. Further details are in Appendix 5.

The Office of Inspector General (OIG), established by the Inspector General Act of 1978, as amended, 5 U.S.C. App. 3, is an independent office of the EPA that detects and prevents fraud, waste and abuse to help the agency protect human health and the environment more efficiently and cost effectively. OIG staff are located at EPA headquarters in Washington, D.C.; the EPA's 10 regional offices; and at Research Triangle Park, North Carolina, and Cincinnati, Ohio. The EPA Inspector General also serves as the Inspector General for the U.S. Chemical Safety and Hazard Investigation Board (CSB). Our vision, mission and goals are as follows:

Vision

Be the best in public service and oversight for a better environment tomorrow.

Mission

Promote economy, efficiency, effectiveness, and prevent and detect fraud, waste, and abuse through independent oversight of the programs and operations of the EPA and CSB.

Goals

1. Contribute to improved human health, safety and environment.
2. Contribute to improved EPA and CSB business practices and accountability.
3. Be responsible stewards of taxpayer dollars.
4. Be the best in government service.

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Scoreboard of Results

The information below shows taxpayer return on investment for work performed by the EPA OIG during fiscal year (FY) 2018 compared to FY 2018 annual performance goal targets. All results reported are based on goals and plans established under the Government Performance and Results Act.

Annual Performance Goal 1: Environmental and business outcome actions taken; changes, corrections or improvements made; risks reduced, eliminated or influenced by OIG work	
Target: 196 **Reported: 103** (53% of goal)	***Supporting measures*** 4 Environmental/health improvements realized or influenced by OIG work 99 Environmental, chemical safety or business policy, practice or process changes made or decisions implemented 0 Legislative or regulatory changes
Annual Performance Goal 2: Recommendations, challenges, best practices or risks identified for action	
Target: 460 **Reported: 759** (165% of goal)	***Supporting measures*** * 34 Certifications, verifications, validations * 235 Recommendations for improvement (including risk identified) 19 Referrals for agency action 7 Unimplemented recommendations identified in issued reports * 462 OIG-identified findings in external reports impacting EPA 2 Beneficial practices identified for potential transfer
Annual Performance Goal 3: Return on investment: potential dollar return as percentage of OIG budget	
Target: 160% of budget **Reported: 588% of target**	***Supporting measures (in millions)*** **OIG budget: $50.3** **Potential return: $473.1** * $3.192 Questioned costs $375.051 Potential monetary benefits identified in reports—excluding questioned costs $90.990 Monetary actions taken or resolved prior to report issuance $0.389 Fines, penalties, settlements and restitutions resulting from EPA OIG investigations $0.936 Actual cost savings identified after report issuance $1.255 Cost avoidance savings/cost savings identified after report issuance or based on investigative results $1.261 Fines, penalties, settlements and restitutions resulting from joint investigations between EPA OIG and other entities
Annual Performance Goal 4: Criminal, civil and administrative actions reducing risk, and loss of resources and operational integrity taken or influenced by OIG work	
Target: 87 **Reported: 330** (379% of goal)	***Supporting measures*** 85 Allegations disproved 6 Indictments, informations and complaints 4 Convictions 1 Civil action 87 Administrative actions taken (other than debarments or suspensions) 19 Suspension or debarment actions 128 Fraud briefings conducted
Other (no targets established)	
Savings and recommendations sustained *(can include sustained costs for recommendations from prior fiscal year reports):* • * 222 sustained environmental or business recommendations (resolved or agreed-to) for action • * $9.125 million in sustained questioned costs • $375.05 million in sustained potential monetary benefits	

Sources: The OIG Performance Measurement Results System and the Inspector General Enterprise Management System.

* These measures include single audits, which are generally audits of nonfederal entities performed by private firms. Further details on single audits are on page 38.

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FY 2018 EPA Management Challenges Issued

Report No. 18-N-0174, issued May 8, 2018

Attention to agency management challenges—areas with greater vulnerability to waste, fraud, abuse and mismanagement—could result in better protection for the public and increased confidence in management integrity and accountability. As required by the Reports Consolidation Act of 2000, the OIG identified the following issues as the EPA's key management challenges for FY 2018:

- **The EPA Needs to Improve Oversight of States, Territories and Tribes Authorized to Accomplish Environmental Goals:** The EPA has made important progress, but our work continues to identify challenges throughout agency programs and regions, and many of our recommendations are still not fully implemented.

- **The EPA Needs to Improve Its Workload Analysis to Accomplish Its Mission Efficiently and Effectively:** The EPA needs to better identify its workload needs so that it can more effectively prioritize and allocate limited resources to accomplish its work.

- **The EPA Needs to Enhance Information Technology Security to Combat Cyber Threats:** Though the EPA continues to initiate actions to strengthen or improve its information security program, the agency lacks a holistic approach to managing accountability over its contractors. It also lacks follow-up on whether corrective actions are taken.

- **The EPA Needs to Improve on Fulfilling Mandated Reporting Requirements:** The agency faces challenges in tracking and submitting reports mandated by law that contain key program information for Congress, the EPA Administrator and the public.

- **The EPA Needs Improved Data Quality for Program Performance and Decision-Making:** Poor data quality negatively impacts the EPA's effectiveness in overseeing programs that directly impact public health.

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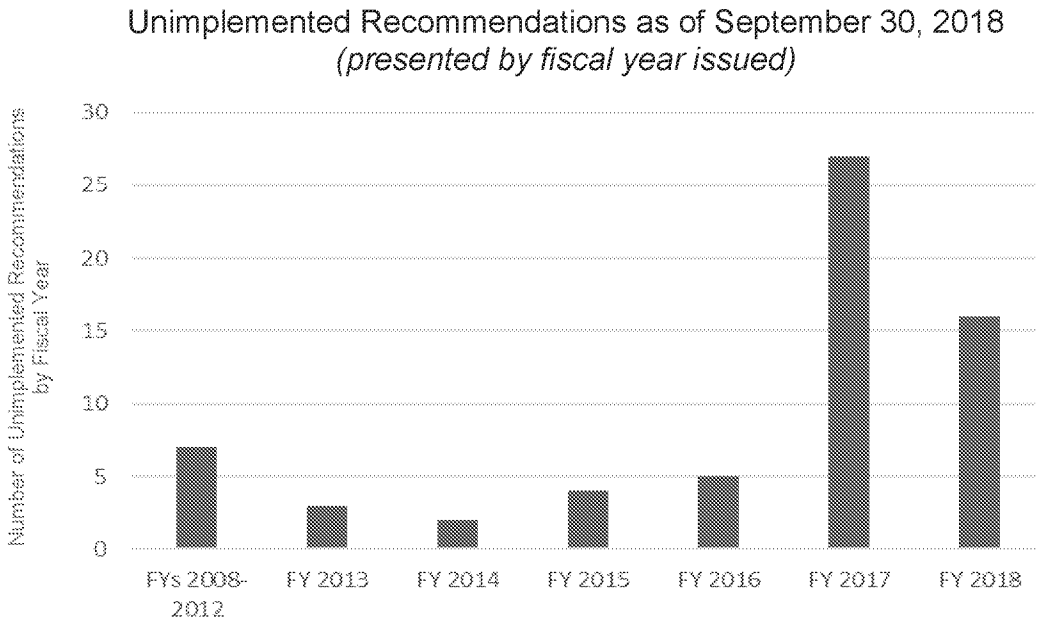
Status of OIG Unimplemented Recommendations

OIG audits provide recommendations to help improve EPA program offices and regions. Benefits for the agency and the public are realized through the implementation of these recommendations. To encourage continued progress on completing management action, we analyzed the list of unimplemented recommendations in Appendix 3 and provide the results of that analysis below. Unimplemented recommendations include those for which implementation is past due, as well as those that are due in the future.



For the semiannual reporting period ending September 30, 2018, the EPA had 64 unimplemented recommendations, and the CSB had one unimplemented recommendation in that same period. The potential monetary benefits of these recommendations for the EPA and CSB are approximately $86 million and $402,000, respectively. The table below shows the status of the recommendations, which fall into five categories. The CSB report is included in the "Management and Operations" category.

Category	Total	
	No. of recommendations	Potential monetary benefits (in $000s)
1. Management and Operations	34	$45,714
2. Water Issues	7	0
3. Environmental Contamination and Cleanup	8	27,800
4. Toxics, Chemical Safety and Pesticides	12	0
5. Air Quality	4	13,000
Total	**65**	**$86,514**

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For each category, we include the benefit(s) of implementing each recommendation as one or more of the following: (1) improved human health and the environment, (2) more effective and efficient operations and (3) potential monetary benefits.

Category 1 Management and Operations

The 34 unimplemented recommendations in this category were issued within the following 14 reports and offer the potential for more effective and efficient operations, as well as potential monetary benefits of $45.7 million:

- Improved oversight of:
  - Companies with multiple cleanup liabilities that self-insure (Report No. 18-P-0059).
  - Project managers without the appropriate information technology certification (Report No. 18-F-0039).
  - Leave bank program (Report No. 17-P-0374).
  - Use of religious compensatory time (Report No. 16-P-0333).
  - Hawaii water quality grants (Report No. 16-P-0218). *The potential monetary benefit of this unimplemented recommendation is $8.3 million.*
  - CSB future leasing with the General Services Administration (Report No. 16-P-0179). *The potential monetary benefit of this unimplemented recommendation is $0.4 million.*
  - Grants execution in the U.S. Virgin Islands (Report No. 15-P-0137). *The potential monetary benefit of this unimplemented recommendation is $37 million.*
  - Emergency and Rapid Response Contracts (Report No. 14-P-0109).
  - Reassessment of the Community-Focused Exposure and Risk Screening Tool (Report No. 17-P-0378).

- Institutionalization of the Lean program to reap cost and time benefits (Report No. 17-P-0346).

- Better processes for information technology regarding:
  - Integration and use of cloud services (Report No. 15-P-0295).
  - Information security vulnerability program (Report No. 15-P-0290).
  - Determining whether infrastructure-as-a-service contracts are in the agency's best interest (Report No. 14-P-0332).
  - Internal controls for applications management (Report No. 10-1-0029).

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Category 2 Water Issues

The seven unimplemented recommendations in this category were issued within the following four reports and offer the potential for improved human health and the environment, as well as more effective and efficient operations:

- Share the EPA's voluntary WaterSense program practices with the agency's Program Management Improvement Officer (Report No. 17-P-0352).
- Provide leadership and better guidance to improve fish advisory risk communications (Report No. 17-P-0174).
- Assess environmental and economic benefits of completed Clean Water State Revolving Fund green projects (Report No. 16-P-0162).
- Revise outdated or inconsistent EPA/state clean water memorandums of agreement (Report No. 10-P-0224).

Category 3 Environmental Contamination and Cleanup

The eight unimplemented recommendations in this category were issued within the following six reports and offer the potential for improved human health and the environment, more effective and efficient operations, and potential monetary benefits of $27.8 million:

- Make enhancements to EPA reporting software for noncompliant facilities (Report No. 18-P-0001).
- Assure distribution of Superfund human resources supports current regional workload (Report No. 17-P-0397).
- Improve oversight of the Underground Storage Tank/Leaking Underground Storage Tank program for the U.S. Virgin Islands (Report No. 15-P-0137).
- Revise risk management inspection guidance to recommend minimum inspection scope and provide detailed examples of minimum reporting (Report No. 13-P-0178).
- Enter into memorandums of agreement that address oversight of municipalities conducting inspections of underground storage tanks (Report No. 12-P-0289).
- Make better use of Stringfellow Superfund Special Accounts (Report No. 08-P-0196). *The potential monetary benefit of this unimplemented recommendation is $27.8 million.*

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Category 4 Toxics, Chemical Safety and Pesticides

The 12 unimplemented recommendations in this category were issued within the following seven reports and have the potential for improved human health and the environment:

- Effectively manage state pesticide cooperative agreements and reduce risk of misuse (Report No. 18-P-0079).
- Reduce risks from illegal pesticides by effectively identifying imports for inspection and sampling (Report No. 17-P-0412).
- Assess needs and implement management controls to ensure effective incorporation of chemical safety research products (Report No. 17-P-0294).
- Strengthen oversight of herbicide resistance with better management controls (Report No. 17-P-0278).
- Take additional measures to prevent deaths and serious injuries from residential fumigation (Report No. 17-P-0053).
- Assure continued effectiveness of hospital-level disinfectants (Report No. 16-P-0316).
- Establish criteria and procedures outlining what chemical or classes of chemicals will undergo risk assessments (Report No. 10-P-0066).

Category 5 Air Quality

The four unimplemented recommendations in this category were issued within the following three reports and have the potential for improved human health and the environment, and potential monetary benefits of $13 million:

- Improve data and oversight to assure compliance with the standards for benzene content in gasoline (Report No. 17-P-0249).
- Prioritize and update existing oil and gas production emission factors and develop new factors for processes that do not currently have emission factors (Report No. 13-P-0161).
- Update the fees rule to recover more motor vehicle and engine compliance program costs (Report No. 11-P-0701). *The potential monetary benefit of this unimplemented recommendation is $13 million.*

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Acting Administrator Wheeler Emphasizes Need for Cooperation with OIG

In an email issued August 8, 2018, to all agency employees, acting Administrator Andrew Wheeler emphasized the need for all EPA staff to cooperate with the OIG.

"I recognize the important role that the Office of Inspector General serves in preventing and identifying fraud, waste and abuse in EPA programs and operations," Wheeler said in the email, which was prefaced with the subject line *Cooperating with the Office of Inspector General*. He continued, "One of the ways we ensure accountability deserving of the public's trust is through the review and oversight carried out by the OIG. This important work enables us all to be more effective in achieving the agency's mission with the resources and authorities provided by Congress."

As the message noted, "The OIG is an independent office within the EPA and, to meet its statutory mandate under the Inspector General Act, the OIG requires information and assistance from EPA managers and staff on a regular basis." Consequently, Wheeler stressed, "It is imperative and expected that agency personnel provide the OIG with access to personnel, facilities and records or other information or material that is needed by the OIG to accomplish its mission." In addition, Wheeler said that he expects "all employees to report fraud, waste and abuse to the OIG. … Each employee taking the responsibility to report activity to the OIG which appears wasteful or illegal is one of the most important and successful means the OIG has for identifying and stopping wrongdoing."

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Furthering EPA's Efforts

When conducting our audit work during the second half of FY 2018, we considered the EPA's key areas of effort. The table below shows how our reports on the EPA aligned with these areas.

OIG-Issued Reports — Linkage to Key EPA Areas of Effort

OIG report	Report no.	Improving air quality	Ensuring clean/safe water	Cleaning up/ revitalizing land	Ensuring safety of chemicals	Improving EPA research programs	Compliance with the law	Partnering with states/ others	Operating efficiently/ effectively
EPA's Safe and Sustainable Water Resources Research Program Is Delivering Timely and Relevant Data to the Office of Water	18-P-0151		X			X			
EPA Complied with Improper Payments Elimination and Recovery Act Requirements	18-P-0153						X		
Management Alert - Salary Increases for Certain Administratively Determined Positions	18-N-0154								X
EPA's Fiscal Year 2018 Management Challenges	18-N-0174	X	X	X	X	X	X	X	X
EPA Region 5 Needs to Better Protect Information Technology Property, and Areas for Agencywide Improvement Exist	18-P-0176								X
EPA Did Not Identify Volkswagen Emissions Cheating; Enhanced Controls Now Provide Reasonable Assurance of Fraud Detection	18-P-0181	X					X		
Atlanta Is Largely in Compliance with Its Combined Sewer Overflow Consent Decree, but Has Not Yet Met All Requirements	18-P-0206		X						
Operational Efficiencies of EPA's Human Resources Shared Service Centers Not Measured	18-P-0207								X
Management Alert - To Minimize Risk of Environmental Harm, the Security Categorization of Electronic Manifest System Data Needs to Be Re-Evaluated	18-P-0217				X				
EPA Complied with the *Statement of Federal Financial Accounting Standards No. 47* and *Treasury Financial Manual*, Part 2, Chapter 4700	18-P-0220						X		
Management Weaknesses Delayed Response to Flint Water Crisis	18-P-0221		X				X		
EPA Completed OIG Recommendations for the Presidential Green Chemistry Challenge Awards Program but Lacks Controls over Use of Unverified Results	18-P-0222								X
EPA's Chemical Data Reporting Rule Largely Implemented as Intended, but Opportunities for Improvement Exist	18-P-0226				X		X		
Incomplete Oversight of State Hazardous Waste Rule Authorization Creates Regulatory Gaps and Human Health and Environmental Risks	18-P-0227							X	
Without E-Invoicing and Stronger Payment Process Controls, EPA Is Placing $1.2 Billion at Risk Annually	18-P-0231								X
EPA's Purchase Card and Convenience Check Program Controls Are Not Effective for Preventing Improper Purchases	18-P-0232								X

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OIG report	Report no.	Improving air quality	Ensuring clean/safe water	Cleaning up/ revitalizing land	Ensuring safety of chemicals	Improving EPA research programs	Compliance with the law	Partnering with states/ others	Operating efficiently/ effectively
EPA Needs to Finish Prioritization and Resource Allocation Methodologies for Abandoned Uranium Mine Sites on or Near Navajo Lands	18-P-0233			X					
Without a Process for Monitoring Sensitive Data, EPA Region 4 Risks Unauthorized Access to File Servers and Share Folders	18-P-0234						X		X
EPA's June 2018 Issuance of the Delayed Notice of Availability of Farm Worker Protection Training Materials Will Reduce Risks of Injury and Illness	18-P-0238				X				
EPA Asserts Statutory Law Enforcement Authority to Protect Its Administrator but Lacks Procedures to Assess Threats and Identify the Proper Level of Protection	18-P-0239								X
EPA Needs a Comprehensive Vision and Strategy for Citizen Science that Aligns with Its Strategic Objectives on Public Participation	18-P-0240					X			
EPA Can Strengthen Its Process for Revising Air Quality Dispersion Models that Predict Impact of Pollutant Emissions	18-P-0241	X							
Management Alert - EPA Oversight of Employee Debt Waiver Process Needs Immediate Attention	18-P-0250								X
EPA Needs to Re-Evaluate Its Compliance Monitoring Priorities for Minimizing Asbestos Risks in Schools	18-P-0270						X	X	
Delayed Cleanup of Asbestos Debris at the Old Davis Hospital Site Necessitates Changes for EPA Region 4 and North Carolina	18-P-0271			X				X	
Measures and Management Controls Needed to Improve EPA's Pesticide Emergency Exemption Process	18-P-0281				X				
Collecting Additional Performance Data from States Would Help EPA Better Assess the Effectiveness of Vehicle Inspection and Maintenance Programs	18-P-0283	X							
EPA Paid $14.5 Million to Foreign Fellows that Could Have Funded Research by U.S. Citizens or Permanent Residents	18-P-0288					X			
Management Alert: EPA's Incident Tracking System Lacks Required Controls to Protect Personal Information	18-P-0298								X

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Status of Whistleblower Retaliation and Interference with Independence

Whistleblower Retaliation

Section 5(a)(20) of the Inspector General Act of 1978, as amended, requires a detailed description of any instances of whistleblower retaliation noted by the EPA OIG. This requirement includes information about an official found to have engaged in retaliation and the consequences the agency imposed to hold that official accountable. There were no whistleblower retaliation cases closed within the semiannual period ending September 30, 2018.

Impediments to Independence

Section 5(a)(21) of the Inspector General Act of 1978, as amended, requires a detailed description of any attempt by the establishment (or, in this case, the EPA or the CSB) to interfere with the independence of the EPA OIG. This requirement includes budget constraints designed to limit the OIG's capabilities, as well as incidents where the agency resisted OIG oversight or delayed OIG access to information. The OIG encountered no impediments during this semiannual reporting period.

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Significant OIG Activity

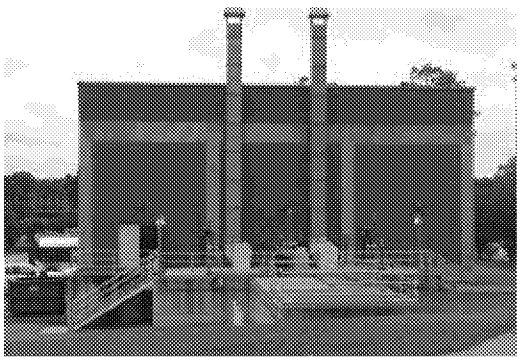
Congressionally Requested Activities

Audit Report

Atlanta Is Largely in Compliance with Its Combined Sewer Overflow Consent Decree, but Has Not Yet Met All Requirements

Report No. 18-P-0206, issued May 30, 2018

The OIG examined the city of Atlanta, Georgia's compliance with requirements of a 1998 Combined Sewer Overflow Consent Decree. Combined sewer overflows occur when untreated or partially treated waste, toxic materials and debris mix with stormwater and flow into waterbodies. The decree also addresses sanitary sewer overflows that occur when sewage escapes sewer systems. The city completed its combined sewer overflow consent decree capital improvement projects by 2008 and complied with reporting requirements, but it has not yet achieved all consent decree requirements. The combined sewer overflow continues to have periodic permit violations due to high levels of fecal coliform, operations-related errors leading to high levels of chlorine in treated wastewaters, and missed water quality tests. Sanitary sewer overflows also continue to occur, with untreated household and human waste being released into city streets and surface waters. The city has until 2027 to achieve all sanitary sewer consent decree requirements. We made no recommendations.



Atlanta's R.M. Clayton Pump Station was built as a result of the city's 1998 Combined Sewer Overflow Consent Decree. (EPA OIG photo)

Investigations

EPA Administrator's Resignation Leaves Investigation into Allegation of Gift Inconclusive

The OIG conducted an administrative investigation into EPA Administrator Scott Pruitt's lodging agreement with a lobbyist's wife that allegedly constituted a gift. Investigators interviewed witnesses and reviewed records pertaining to the lodging agreement, which involved the Administrator renting a room in a townhouse owned by a lobbyist's wife. Mr. Pruitt resigned prior to being interviewed by investigators. For that reason, the OIG deemed that the result of the investigation was inconclusive. The case will be closed.

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EPA Administrator's Resignation Leaves Investigation into Improper Use of Position Inconclusive

The OIG investigated the following allegations: that EPA Administrator Scott Pruitt had subordinates at the EPA assist him in finding personal housing; that he used his official position and EPA staff to seek a "business opportunity" for his wife with Chick-fil-A, a fast-food restaurant chain; that he enlisted subordinates at the EPA to secure a mattress for his personal use; and that he had his security detail run errands for him. Investigators interviewed witnesses and reviewed records. Mr. Pruitt resigned prior to being interviewed by investigators. For that reason, the OIG deemed that the result of the investigation was inconclusive. The case will be closed.

Allegation of Senior Executive Service Employee Nonperformance of Work Duties Not Supported

A Senior Executive Service (SES)-level employee allegedly did not attend work or perform work duties from November 2017 through January 2018. It was also alleged that the subject had subordinates conduct menial tasks. Investigators interviewed witnesses, who stated that the employee was often in the EPA office and attended meetings during that time frame. Investigators reviewed records, which showed that the employee worked during the time specified. Witnesses also stated that the employee did not have subordinates conduct menial tasks. During an interview, the subject denied both allegations. The allegations were not supported.

Allegation of EPA Ethics Officials Being Improperly Pressured Not Supported

The OIG conducted an administrative investigation into whether EPA ethics officials were improperly pressured by EPA officials to render opinions pertaining to EPA Administrator Scott Pruitt's lodging agreement. Investigators interviewed potential victims, who stated that they did not feel pressured into rendering opinions pertaining to the lodging agreement. A review of records showed nothing of investigative merit supporting the allegation. The allegation was not supported.

Briefings, Requests and Inquiries

During this reporting period, the OIG provided 10 briefings to Congress on the OIG's work. Specific OIG work receiving considerable congressional interest included that related to the various allegations against Administrator Scott Pruitt and his staff. During the reporting period, the OIG also received many congressional requests for specific data.

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Human Health and Environmental Issues

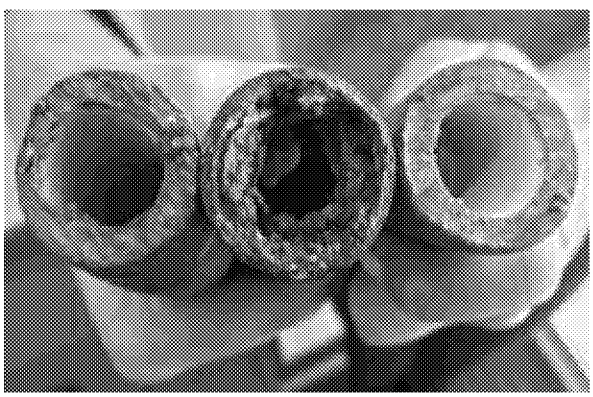
Management Weaknesses Delayed Response to Flint Water Crisis

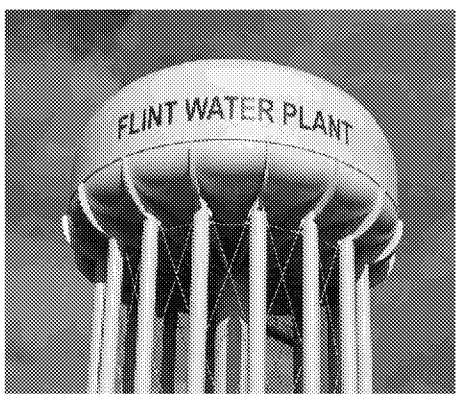
Report No. 18-P-0221, issued July 19, 2018

A podcast, video and slideshow on the Flint water crisis report are available.

In October 2016, the OIG issued a Management Alert to the EPA about specific factors that delayed the agency's emergency response to contamination in the community water system for the city of Flint, Michigan. Our subsequent and final report, issued July 19, 2018, provided further details about implementation and oversight lapses by the EPA, state of Michigan and city of Flint. We found that EPA Region 5 did not implement management controls that could have facilitated more informed and proactive decision-making when Flint and the Michigan Department of Environmental Quality did not properly implement the Lead and Copper Rule. For example, the region did not establish clear oversight roles and responsibilities and did not have an effective system to evaluate risk. We also found that the EPA should strengthen its oversight of state drinking water programs to improve the efficiency and effectiveness of the agency's response to drinking water emergencies.

We recommended that EPA headquarters and Region 5 use lessons learned from Flint to improve oversight of Safe Drinking Water Act compliance. We also recommended that EPA headquarters revise the Lead and Copper Rule to improve the effectiveness of monitoring requirements. The EPA provided adequate corrective actions for eight of our nine recommendations. The unresolved recommendation—to establish controls to annually verify that states are monitoring compliance with all Lead and Copper Rule requirements—could improve compliance with the Lead and Copper Rule nationwide. Efforts to resolve this recommendation are ongoing.





Left photo: Lead service lines showing inner surface without any coating (left), coated with a corrosion inhibitor (right) and fully corroded (middle). (EPA photo)

Right photo: Flint Water Treatment Plant. (EPA OIG photo)

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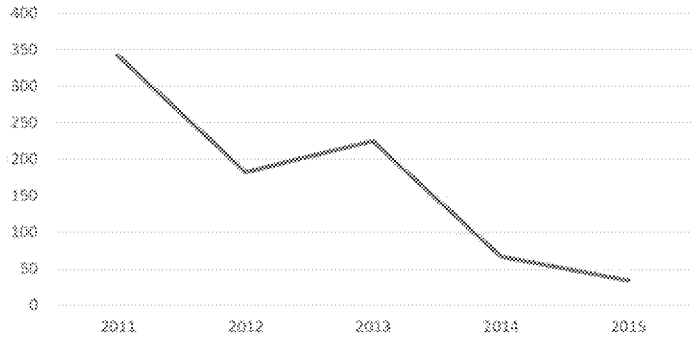
EPA Needs to Re-Evaluate Its Compliance Monitoring Priorities for Minimizing Asbestos Risks in Schools

Report No. 18-P-0270, issued September 17, 2018

A podcast on the asbestos in schools report is available.

Even though the EPA was responsible for conducting Asbestos Hazard Emergency Response Act compliance inspections in schools for the majority of states, it conducted fewer inspections overall than the states responsible for their own inspections. From FYs 2011 through 2015, the EPA conducted 13 percent of pertinent asbestos inspections, whereas states with jurisdiction over their own inspections performed 87 percent. Without the inspections, the EPA cannot know whether schools pose an actual risk of asbestos exposure to students and personnel. EPA regions have either significantly reduced or eliminated resources for their asbestos programs, due largely to competing priorities. Five of the 10 regions only inspect for asbestos in schools when they receive asbestos-related tips or complaints. We made various recommendations for the EPA to improve its asbestos monitoring efforts, and the agency agreed to take acceptable corrective actions.

Number of inspections conducted by EPA, FYs 2011–2015



Source: OIG analysis based on information from the EPA.

EPA Did Not Identify Volkswagen Emissions Cheating; Enhanced Controls Now Provide Reasonable Assurance of Fraud Detection

Report No. 18-P-0181, issued May 15, 2018

A podcast on the report about the EPA's controls to detect vehicle emissions fraud is available.

Since the discovery of Volkswagen's emissions fraud in 2015, the EPA has enhanced its testing process to detect emissions noncompliance in cars and trucks weighing up to 14,000 pounds (i.e., the *light-duty vehicle sector*). Noncompliance can and has led to excess emissions of pollutants, which have significant negative impacts on human health and the environment. However, we found that the EPA could strengthen controls to better address strategic risks and achieve compliance with emissions regulations. The agency agreed with our seven recommendations, including formalizing the role of special testing and tracking compliance issues.

Vehicle equipped with Portable Emissions Monitoring System to measure on-road vehicle exhaust emissions. (EPA OIG photo)

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Measures and Management Controls Needed to Improve EPA's Pesticide Emergency Exemption Process

Report No. 18-P-0281, issued September 25, 2018

The EPA grants federal and state agencies authority in certain emergency situations to approve emergency exemptions that allow the limited application of a pesticide for an unregistered use. However, the EPA does not have outcome measures to determine how well the emergency exemption process maintains human health and environmental safeguards. In addition, the agency does not have comprehensive internal controls to manage the emergency exemption data it collects, nor does it consistently communicate emergency exemption information with stakeholders. Of our eight recommendations, the EPA proposed corrective actions that meet the intent of three; the remaining five are unresolved with resolution efforts in progress.

Citrus greening (a bacterial disease) occurring on a Florida citrus tree. (U.S. Department of Agriculture photo)

EPA Can Strengthen Its Process for Revising Air Quality Dispersion Models that Predict Impact of Pollutant Emissions

Report No. 18-P-0241, issued September 5, 2018

Although the EPA had guidance on recommended procedures for reviewing the development and evaluation of new air quality dispersion models, similar guidance was not available for model revisions. Air quality dispersion models predict the air quality impact of pollutants released into the atmosphere. Standard operating procedures and quality assurance project plans (or equivalent documents) for model revisions help assure consistent application of quality assurance and control activities. However, from 2006 through 2016, the EPA issued 12 Model Change Bulletins for the dispersion model it prefers to use for regulatory purposes (the American Meteorological Society/EPA Regulatory Model), but the quality assurance and control activities for these revisions were not as extensive as what EPA guidance recommends for new model development. The agency agreed to take corrective actions to provide better guidance and planning documents for model revisions.

The American Meteorological Society/EPA Regulatory Model is the preferred model for estimating the impact of mobile source emissions—such as from highway traffic—on air quality. (U.S. Department of Transportation photo)

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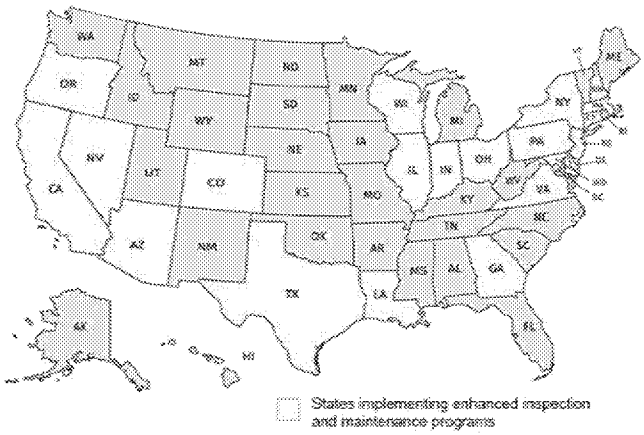
Collecting Additional Performance Data from States Would Help EPA Better Assess the Effectiveness of Vehicle Inspection and Maintenance Programs

Report No. 18-P-0283, issued September 25, 2018



The 23 states with enhanced inspection and maintenance programs. (EPA OIG image)

The EPA should collect additional program performance data to better assess the effectiveness of enhanced inspection and maintenance programs. Vehicles that are poorly maintained or have malfunctioning emission controls contribute to pollutant emissions in the air. Our audit found that nine states did not conduct the required biennial program evaluations to assess the effectiveness of their programs, and four other states did not conduct the required on-road testing to obtain information about the performance of in-use vehicles. We recommended that the EPA take actions to assure consistent and effective implementation of their programs, assist states in complying with requirements, and conduct outreach to states as needed. The EPA agreed with our recommendations and provided acceptable corrective actions.

Incomplete Oversight of State Hazardous Waste Rule Authorization Creates Regulatory Gaps and Human Health and Environmental Risks

Report No. 18-P-0227, issued July 31, 2018

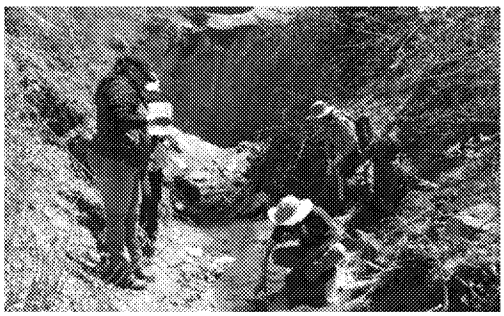
Most states are authorized to implement the majority of new required hazardous waste rules promulgated by the EPA under the Resource Conservation and Recovery Act. However, states and the EPA have taken from less than 1 year to more than 31 years to complete the authorization process. No state has been authorized by the EPA for all required rules. For the 173 required rules, the number not authorized ranges from six to 98 per state. Further, the EPA has not defined authorization goals to track program performance. We recommended that the EPA identify, prioritize and track rules for which states have not sought authorization and take steps to improve the authorization process. The agency agreed with the recommendations and is acting to have those rules authorized.

Cleanup of potential hazardous waste at the Nogales Wash in Arizona. (EPA photo)

EPA Needs to Finish Prioritization and Resource Allocation Methodologies for Abandoned Uranium Mine Sites on or Near Navajo Lands

Report No. 18-P-0233, issued August 22, 2018

The EPA has taken steps to develop a prioritization methodology for cleaning up the approximately 50 abandoned uranium mine sites on or near Navajo Nation lands that are part of a 2015 settlement with a chemical company, Tronox Incorporated. Approximately $1 billion is in a special account for cleaning up these sites in Arizona and New Mexico. In conjunction with the Navajo Nation and other stakeholders, the EPA has developed a system for identifying immediate risks and has been gathering data needed to complete prioritization for site cleanups. Site prioritization will aid EPA-initiated actions at locations where there is imminent danger. EPA Regions 6 and 9 agreed on a timeline to complete key activities. It is critical that the EPA meet its milestones, and we recommended that the agency complete necessary site removal evaluations and implement prioritization and resource allocation methodologies.



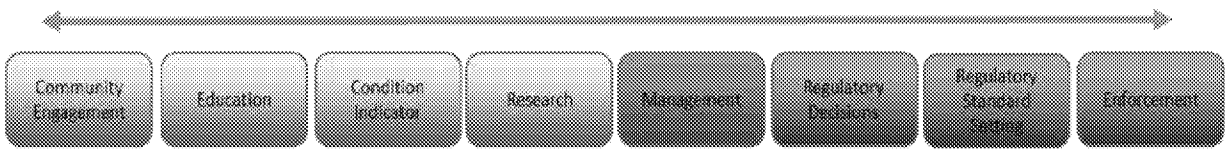
An EPA contractor and college interns collecting water and sediment samples in the Arizona Cove Wash in April 2017. (EPA photo)

EPA Needs a Comprehensive Vision and Strategy for Citizen Science that Aligns with Its Strategic Objectives on Public Participation

Report No. 18-P-0240, issued September 5, 2018

Although citizen science is carried out throughout the EPA, the agency has not developed controls necessary to manage it agencywide. In particular, the agency has not provided a clear vision or means for using results. Citizen science is a form of open collaboration in which individuals or organizations participate voluntarily in the scientific process in various ways, including collecting and analyzing data, to enable members of the public to participate and support EPA programs. Absent sufficient controls, the EPA cannot undertake a systematic effort to analyze the risks and opportunities that citizen science presents. Barriers to effectively using its citizen science results include the lack of a comprehensive vision and support from senior management, and a lack of understanding and buy-in. We made recommendations to establish a strategic vision and objectives for citizen science, as well as various improvements, and the agency agreed with our recommendations.

Spectrum of citizen science uses



OIG-generated image based on 2016 National Advisory Council for Environmental Policy and Technology report.

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Delayed Cleanup of Asbestos Debris at the Old Davis Hospital Site Necessitates Changes for EPA Region 4 and North Carolina

Report No. 18-P-0271, issued September 18, 2018

A podcast on the Old Davis Hospital asbestos report is available.

EPA Region 4 and the state of North Carolina followed appropriate procedures at the Old Davis Hospital site in Statesville, North Carolina, regarding asbestos removal, but we questioned the timeliness of the removal. In late October 2015, personnel from the state observed piles of debris at the site suspected of containing asbestos, which they later verified. However, it took over 7 months for the state to request EPA assistance in performing removal of asbestos at the site—in early June 2016—during which time there was a potential threat of asbestos exposure for nearby residents. We recommended that EPA Region 4, in coordination with North Carolina, take various steps to improve future remediation efforts at other locations in the state, and the agency concurred.

Debris pile in the basement area of the Old Davis Hospital demolition site as of June 2016. (EPA photo)

EPA's Chemical Data Reporting Rule Largely Implemented as Intended, but Opportunities for Improvement Exist

Report No. 18-P-0226, issued July 27, 2018

While the EPA conducts quality checks of the chemical information submitted by companies under the Chemical Data Reporting Rule, the agency lacked documented policies and procedures that specify how to select and conduct these checks. The EPA uses Chemical Data Reporting data to prioritize imported and manufactured chemicals for the purpose of identifying their potential risks to human health and the environment. The EPA also uses on-site inspections and other tools to monitor companies' compliance with the rule and takes enforcement action when violations are identified. We recommended that the agency develop and implement a policy or procedure for data quality checks, which will help prevent the loss of institutional knowledge resulting from staff turnover or absence. The agency concurred with our recommendation.

Primary goals of the Chemical Data Reporting rulemaking

	Goal
1	Tailor the Chemical Data Reporting information collected to better meet the EPA's overall information needs.
2	Increase the EPA's ability to effectively provide public access to Chemical Data Reporting information.
3	Obtain new and updated information relating to potential exposures to a subset of chemical substances listed on the Toxic Substances Control Act Inventory.
4	Improve the usefulness of the information reported.

Source: *Toxic Substances Control Act Inventory Update Reporting Modifications; Chemical Data Reporting* (Final Rule).

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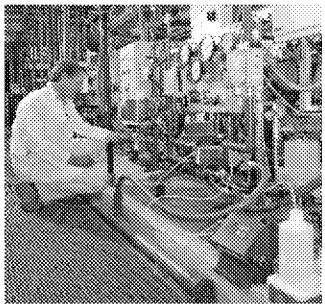

An EPA employee sampling filtered water for assessment of filter efficacy. (EPA photo)

EPA's Safe and Sustainable Water Resources Research Program Is Delivering Timely and Relevant Data to the Office of Water

Report No. 18-P-0151, issued April 9, 2018

The EPA Office of Research and Development's Safe and Sustainable Water Resources research products were generally delivered in a timely fashion. We found that 100 percent of the program's research products were completed by the expected due date. We also found that the products were relevant to the EPA's efforts to protect America's waters. Therefore, we made no recommendations regarding the program.

EPA's June 2018 Issuance of the Delayed Notice of Availability of Farm Worker Protection Training Materials Will Reduce Risks of Injury and Illness

Report No. 18-P-0238, issued August 30, 2018

Per the 2015 revision of the Agricultural Worker Protection Standard, the EPA was to publish a Notice of Availability in the Federal Register to inform stakeholders when expanded training materials were available. We found that the EPA did not publish the notice as required. As a result, agricultural workers, pesticide handlers and employers did not have the most recent information about the revised standard, designed to reduce the risk of injury and illness from pesticide exposure. On June 22, 2018, after the start of this audit, the EPA published the notice for the expanded 2015 revised training materials, so we made no recommendations.

Migrant worker picks peaches. (U.S. Department of Defense photo)

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Agency Business Practices and Accountability

Management Alert: Salary Increases for Certain Administratively Determined Positions

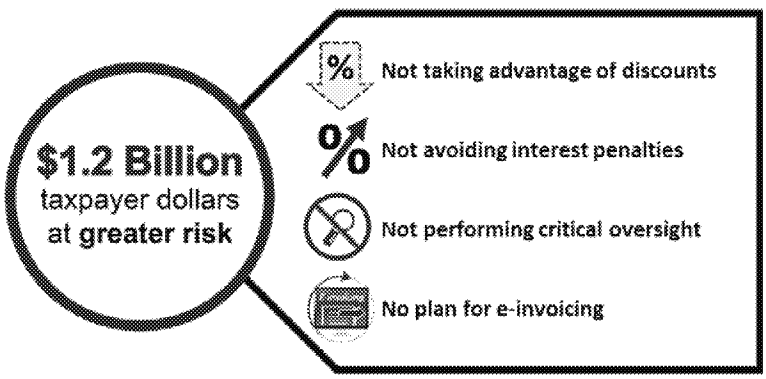
Report No. 18-N-0154, issued April 16, 2018

Our audit of administratively determined positions in the Office of the Administrator identified six employees whose files contained at least three *Request for Personnel Action* forms and the corresponding *Notification of Personnel Action* indicating employee position conversions and substantial pay increases. For example, one person was hired as an administratively determined appointment, converted to a Schedule C appointment and converted back to an administratively determined appointment. This employee received a 67 percent salary increase—from $97,956 to $164,200, a total increase of $66,244—in under 13 months. Our management alert made no recommendations, as audit work is continuing.

Without E-Invoicing and Stronger Payment Process Controls, EPA Is Placing $1.2 Billion at Risk Annually

Report No. 18-P-0231, issued August 16, 2018

The EPA can maximize the efficiency of its contract invoice payment process by implementing an electronic invoicing system, as required by the Office of Management and Budget, and by performing critical oversight duties related to the review and processing of invoices. Also, the EPA can save money by paying invoices in a timely manner to avoid interest penalties and by taking prompt payment discounts when offered. From October 1, 2015, to September 30, 2017, the EPA paid out more than $2.4 billion in contract invoice payments for 55,549 contract invoices, an average of $1.2 billion annually. If the EPA does not improve its payment process controls, these tax dollars will remain vulnerable to waste, fraud and abuse. The agency agreed with our final report recommendations.



Depiction of taxpayer funds placed at greater risk. (EPA OIG image)

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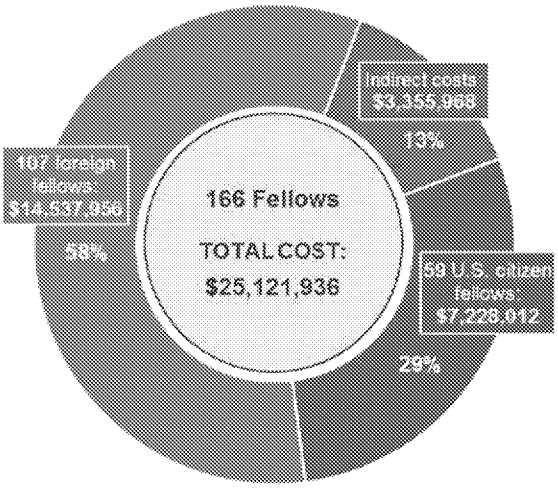
EPA Paid $14.5 Million to Foreign Fellows that Could Have Funded Research by U.S. Citizens or Permanent Residents

Report No. 18-P-0288, issued September 26, 2018

A podcast on the fellowship program report is available.

Of the 166 fellows hosted at EPA laboratories over an 11-year period under EPA cooperative agreements awarded to the National Academy of Sciences, 107 of those fellows (64 percent) were foreign nationals rather than citizens or permanent residents of the United States. Those fellowships totaled $14.5 million. The EPA requires U.S. citizenship or permanent residency when it directly awards fellowships, but did not require that for fellowships awarded by third parties—nonprofit organizations—to whom the EPA provides funds through cooperative agreements for the awarding of fellowships. Also, we noted that fellowship expenses reported to the EPA from two of the nonprofit organizations audited were sometimes inaccurate, resulting in $11,965 in overpayments for two fellows. We recommended that the EPA stipulate in future cooperative agreements that fellowships only be awarded to U.S. citizens or those meeting U.S. residency requirements, and the agency concurred.



National Academy of Sciences foreign national fellows and funding over 11 years. (EPA OIG analysis of National Academy of Sciences data)

Management Alert: EPA Oversight of Employee Debt Waiver Process Needs Immediate Attention

Report No. 18-P-0250, issued September 12, 2018

We initiated an audit to determine whether the EPA properly collects salary overpayments from employees. Although our audit is ongoing, we issued a management alert to notify the EPA about internal control weaknesses that failed to detect 18 EPA employee debt waiver requests totaling $22,015. The agency has taken several actions to improve debt waiver processing, but underlying issues have not been fully addressed. The EPA agreed to analyze and manage open debt waiver requests and implement standard operating procedures for processing those requests. Although the agency disagreed with our recommendation to record individual accounts receivable for each employee debt, it adopted a new procedure to record accounts receivable on a quarterly basis.

The EPA failed to detect 18 employee debt waiver requests. (EPA OIG image)

Management Alert: To Minimize Risk of Environmental Harm, the Security Categorization of Electronic Manifest System Data Needs to Be Re-Evaluated

Report No. 18-P-0217, issued June 21, 2018

A podcast on the e-Manifest system report is available.

The EPA categorized the sensitivity of the information within its Electronic Manifest system at such a low level that the required security controls would not protect the information within the system to minimize the risk of environmental harm. The Electronic Manifest system was being designed to track shipment of hazardous waste from a generator's site to another site for disposition, and a breach of the system may facilitate terrorist or other criminal activities.

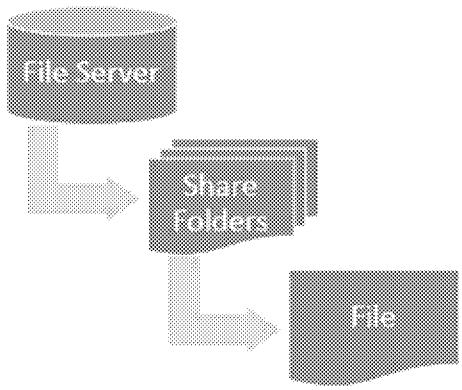
"Chemicals of interest" are hazardous chemicals that the U.S. Department of Homeland Security wants to keep out of the hands of those who would misuse them.

Personnel responsible for categorizing the sensitivity of the system and its information did not sufficiently consider homeland security implications as they relate to "chemicals of interest." Also, the EPA did not consider further uses of the system, such as for use by first responders in the event of an incident involving transport of waste. The EPA agreed to take corrective actions.

Without a Process for Monitoring Sensitive Data, EPA Region 4 Risks Unauthorized Access to File Servers and Share Folders

Report No. 18-P-0234, issued August 28, 2018

We assessed the EPA's implementation of security controls for agency file servers and found that EPA data were vulnerable to unauthorized access. Specifically, Region 4 did not create procedures to ensure that EPA security control requirements were implemented for file servers and share folders. The lack of procedures, combined with the lack of audit logging or an audit log review process, increased the EPA's risk of unauthorized activity being undetected and uninvestigated. We recommended that Region 4 develop a process for approving and monitoring access to share folder content. The region agreed and completed the proposed corrective action.



Interrelationship of a file, share folder and file server. (EPA OIG image)

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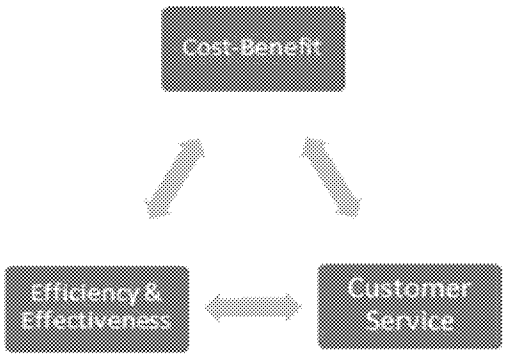
Operational Efficiencies of EPA's Human Resources Shared Service Centers Not Measured

Report No. 18-P-0207, issued May 31, 2018

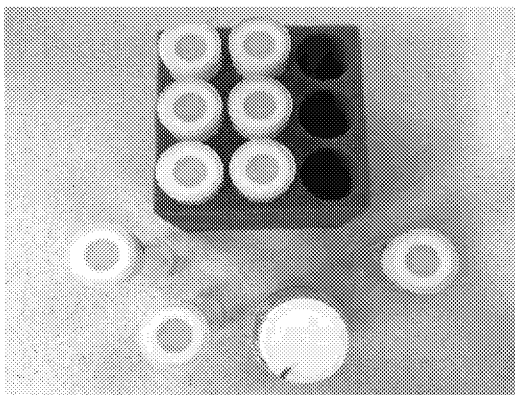
In 2008, the EPA established Human Resources Shared Service Centers in accordance with federal guidance. However, the EPA did not establish baseline metrics or collect data related to performance by the centers. Therefore, neither the agency nor the OIG can determine whether the centers achieved operational efficiencies, savings or improved customer service. There was also no direct correlation between the number of EPA employees serviced by and the number of human resources staff employed at each Shared Service Center and region. In addition, because some policies were outdated, Shared Service Center managers often self-interpreted federal guidance and policies, thus creating confusion and inconsistencies. The agency concurred with our three recommendations to address these findings.



Factors for aligning human resources activities with an agency's mission, role and performance. (EPA OIG image)

EPA's Purchase Card and Convenience Check Program Controls Are Not Effective for Preventing Improper Purchases

Report No. 18-P-0232, issued August 20, 2018


Laboratory supplies are typical items obtained through one of the sampled purchase card transactions. (EPA OIG photo)

EPA internal controls for purchase cards and convenience checks are not effective. After conducting a risk assessment, we followed up with an audit to determine whether EPA internal controls over the agency's purchase card and convenience check program are adequate to prevent and detect illegal, improper and erroneous purchases. We found that ineffective oversight contributed to improper purchases totaling $57,017 from sampled transactions. Although cardholders and approving officials must ensure that purchases comply with federal and agency acquisition and appropriation rules, in most transactions they did not. The EPA agreed to take corrective actions on all 11 of our recommendations.

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EPA Completed OIG Recommendations for the Presidential Green Chemistry Challenge Awards Program but Lacks Controls over Use of Unverified Results

Report No. 18-P-0222, issued July 20, 2018

In the 2015 audit detailed in Report No. 15-P-0279, we found that even though Presidential Green Chemistry Challenge Award results were self-reported by award recipients and were not validated by the agency, they were still included as metrics in agency reports. In this follow-up audit, we verified that the EPA completed the agreed-upon corrective actions from the 2015 report and discontinued using the award results as agency metrics. However, we found that the EPA lacked documented internal controls to prevent the future use of award results, and we recommended that the agency develop such controls. The agency agreed with our recommendation.

Presidential Green Chemistry Challenge Awards on display. (EPA photo)

EPA Complied with Improper Payments Elimination and Recovery Act Requirements

Report No. 18-P-0153, issued April 16, 2018

The EPA complied with requirements of the Improper Payments Elimination and Recovery Act of 2010 and the Office of Management and Budget when reporting improper payments in its FY 2017 Agency Financial Report. The EPA—which reported an estimated $15.79 million of improper payments for FY 2017—published the required documents and conducted the needed risk assessments. Through compliance with the act, the EPA provides better assurance that efforts are being made to reduce improper payments. No recommendations were made.

EPA Complied with the *Statement of Federal Financial Accounting Standards No. 47* and *Treasury Financial Manual*, Part 2, Chapter 4700

Report No. 18-P-0220, issued July 12, 2018

We conducted a preliminary review of the EPA's classification in the *Treasury Financial Manual*, Part 2, Chapter 4700, Appendix 5b, to confirm the agency's classification, at the request of the U.S. Department of the Treasury. We found that the EPA's classification as a consolidating entity is proper and complete. We did not identify any discrepancies with the EPA's information in Appendix 5b. The EPA concurred.

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Investigations

Significant Investigations

Computer Store Owner Charged with Defrauding Federal Agencies via Government Learning Program

On June 20, 2018, Steven E. Mays of Athens, Alabama, was indicted in the U.S. District Court for the Central District of Illinois on four counts of mail fraud, one count each of wire fraud and theft of government property, and interstate transportation of stolen property. These charges stemmed from allegations that Mays fraudulently obtained computer equipment through the U.S. General Services Administration's Computers for Learning Program, which is designed to transfer unused government computers and equipment to schools and educational nonprofit organizations. It is alleged that Mays, a computer store owner, received thousands of computers and related equipment from various federal agencies, including the EPA, which he then sold through his business or on eBay. It is alleged that Mays has received over $22 million in computers and related equipment from the federal government since 2007, including over $158,000 from the EPA.

This investigation is ongoing and is being conducted jointly with the U.S. General Services Administration and National Aeronautics and Space Administration OIGs.

EPA Recovers Funds from State Revolving Fund Loan

On June 28, 2018, the EPA recovered $153,258 after an OIG investigation determined that a Kentucky state employee submitted duplicate invoices to two federal agencies. The city of Campton, Kentucky, was engaged in a sewer improvement project funded by a federally assisted State Revolving Fund loan awarded to the Kentucky Infrastructure Authority by the EPA in the amount of $1.4 million. Based on an independent auditor's report, it appeared that the Army Corps of Engineers and Appalachian Regional Commission collectively overpaid the city, and the investigation found that a state employee had submitted duplicate invoices to the two federal entities. It was later determined that a project partnership agreement previously had been established between the city of Campton and the two federal agencies that required invoices to be submitted for reimbursement. In an attempt to abide by this agreement, the employee submitted the invoices to both federal agencies, unknowingly causing duplicate payments.

Employee and Organization Debarred for Embezzling Grant Funds

On August 17, 2018, the Mississippi Conference of Black Mayors and an employee were debarred from participation in federal procurement and nonprocurement programs for

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misappropriating an Environmental Justice Collaborative Problem-Solving grant and an Area-Wide Planning Brownfields grant totaling over $100,000. EPA officials requested on several occasions that the grantee provide quarterly reports to account for the funds that had been withdrawn, but their requests were ignored. The grantee and employee were debarred until December 15, 2019.

City of Atlanta Official Debarred

On June 1, 2018, Adam Smith, former chief procurement officer for the city of Atlanta, Georgia, was debarred from participating in federal procurement and assistance activities for 3 years. The investigation stemmed from an ongoing federal investigation into corruption at city hall. Smith was convicted and sentenced for accepting bribes in exchange for lucrative city contracts. Smith was debarred due to the proximity of his work to EPA grants.

Contractor Suspended for Damaging EPA Water Monitors

On August 8, 2018, Kenneth Morrison of Indiana and his metal scrapping business were suspended by the EPA from future government contracts as a result of a 2017 indictment in which he was charged with one count of Interstate Transportation of Stolen Property. In 2015, Morrison was arrested by the State of Indiana Department of Natural Resources Police Department for illegally disassembling a city rail bridge and stealing the scrap metal for resale. The disassembly of the bridge resulted in the collapse of the bridge into the Grand Calumet River. The OIG investigation found that, as a result of the bridge collapse, several EPA-owned water monitors were damaged. In addition, the debris removal process impacted a $12 million EPA dredging project that was set to begin in April 2015.

This case was conducted jointly with the EPA Criminal Investigation Division.

Tribal Council Director Suspended from Government Contracts

On June 19, 2018, David McGraw, former accountant and finance director for the Yukon River Inter-Tribal Watershed Council in Anchorage, Alaska, was suspended by the EPA from participating in federal contracts and assistance activities pending the outcome of his legal proceedings. On March 21, 2018, McGraw was indicted for theft and money laundering associated with the work he performed while employed by the council. In each year for FYs 2010 through 2014, the council had been awarded federal grant money in excess of $1 million. McGraw is alleged to have willfully misapplied over $300,000 of these funds for his personal benefit.

This investigation was conducted jointly with the Federal Bureau of Investigation, the National Science Foundation OIG and the Internal Revenue Service.

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Woman Pleads Guilty to Assault in EPA Reception Area

On August 21, 2018, a woman pleaded guilty in the Northern District of Georgia to assaulting a federal officer. The woman was sentenced to time served (18 months, 14 days). In 2017, the woman was charged with assault for attacking a security officer at the EPA Region 4 building in Atlanta, grabbing the officer's gun and then firing a shot. The woman allegedly entered the EPA Region 4 reception area asking to use the EPA library, refused to provide identification, became belligerent, engaged in a physical confrontation with a security officer, removed the security officer's weapon from the holster and fired a single round before being apprehended. No one was injured by the shot.

This investigation was conducted jointly with the U.S. Department of Homeland Security's Federal Protective Service.

Employee Retires in Lieu of Removal for Time-and-Attendance Fraud

On May 17, 2018, an EPA GS-8 employee retired from federal service after the EPA issued the person a Notice of Proposed Removal for time-and-attendance fraud. The employee was required to repay $17,633 to the agency. The OIG investigation found numerous instances where the employee's recorded time on a sign-in log did not match the time the employee recorded on the official timesheet. Evidence was also obtained that the employee disregarded numerous orders from the supervisor to amend the employee's time-and-attendance records. In addition, evidence was obtained that showed the employee misused Leave Bank hours to take a vacation.

Reports of Investigation

A Report of Investigation documents the facts and findings of an OIG investigation and generally involves an employee integrity matter. When the OIG's Office of Investigations issues a Report of Investigation that has at least one "supported" allegation, it requests that the entity receiving the report—whether it is an office within the EPA or an office within the EPA OIG—provide a notification to the OIG within 60 days regarding the administrative action taken or proposed to be taken in the matter. This section provides information on how many Reports of Investigation with at least one supported allegation were issued to the agency and to the OIG, and for how many of those Reports of Investigation a response was not received within a 60-day period.

For the reporting period ending September 30, 2018, the Office of Investigations received no responses outside the 60-day window for the six Reports of Investigation that were issued:

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Agency and OIG Reports of Investigation

No. of Reports of Investigation issued during reporting period with findings	Agency response* received after 60 days	Awaiting agency response	OIG response* received after 60 days	Awaiting OIG response
6	0	0	0	0

* Agency or the OIG will or will not take an action, or will conduct a supplemental investigation.

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Hotline Activities

The Inspector General Act of 1978, as amended, requires each OIG to manage a hotline. The purpose of the hotline is to receive complaints of fraud, waste or abuse in EPA and CSB programs and operations, including mismanagement or violations of law, rules or regulations by agency employees or program participants. The hotline also encourages suggestions for assessing the efficiency and effectiveness of agency programs. Complaints and requests may be submitted by anyone, including EPA and CSB employees, participants in EPA and CSB programs, Congress, organizations, and the public. As a result of these contacts, the OIG may conduct audits, evaluations and investigations. Details on audit and investigative work during the semiannual reporting period follow.

Audit Reports Initiated via OIG Hotline

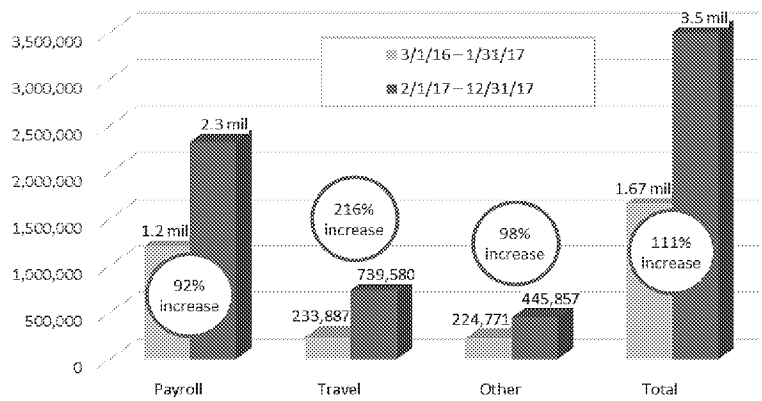
EPA Asserts Statutory Law Enforcement Authority to Protect Its Administrator but Lacks Procedures to Assess Threats and Identify the Proper Level of Protection

Report No. 18-P-0239, issued September 4, 2018

A podcast on the Administrator's Protective Service Detail report is available.

We found that the Protective Service Detail for the EPA Administrator had no approved standard operating procedures to address the level of protection required for the Administrator or how those services were to be provided. A lack of standard procedures can result in unclear lines of authority, inconsistent practices, inappropriate staffing and excessive costs. For example, the detail incurred over $3.5 million in costs from February 1, 2017, through December 31, 2017, for Administrator Scott Pruitt—an increase of over 110 percent compared to the prior period's costs of $1.6 million for the previous Administrator—without documented justification. We recommended that the EPA complete a threat analysis on a regular basis to identify proper protection required. Also, without a legal opinion, we could not determine whether Protective Service Detail agents possessed law enforcement authority to provide protective services for the Administrator; the agency's Office of General Counsel subsequently issued a legal opinion asserting that the EPA has such authority. We also found that agents worked overtime without proper justification.

Protective Service Detail cost comparison for Administrators



The Administrator's Protective Service Detail incurred over $3.5 million in costs from February 2017 through December 2017—an increase of over 110 percent over the prior period's costs. (EPA OIG image)

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EPA Region 5 Needs to Better Protect Information Technology Property, and Areas for Agencywide Improvement Exist

Report No. 18-P-0176, issued May 9, 2018

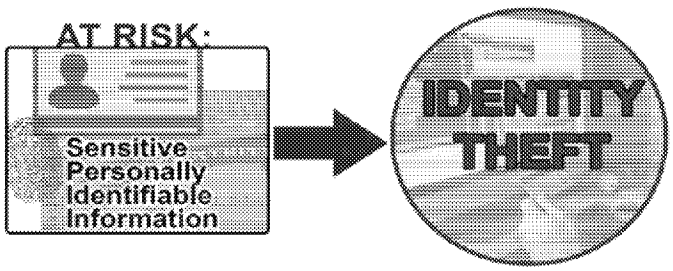
Our review of accountability over EPA Region 5 information technology property, initiated at the request of a former acting Regional Administrator, noted areas of concern. No policy existed for tracking laptops in transition, personnel were unaware of property status or procedural changes, excess property was not always tracked, and controls for laptops taken out of the office were insufficient. Further, we audited Region 2 and EPA headquarters' Office of Water to see if problems existed elsewhere in the agency, and we noted issues. In particular, agencywide responsibility for the EPA property management program rested with a non-managerial-level employee. A lack of sufficient property controls can lead to fraud, waste and abuse, including potential theft and misuse. We recommended that the agency improve controls and strengthen the role of the Office of Administration and Resources Management as the agency's overall property management organization. Corrective actions are underway.

Loaner laptops on a contractor desk in Region 5. (EPA OIG photo)

Management Alert: EPA's Incident Tracking System Lacks Required Controls to Protect Personal Information

Report No. 18-P-0298, issued September 28, 2018

A complaint to the OIG Hotline alleged that the EPA's current incident tracking system contained personally identifiable information (such as name, date of birth and address) and sensitive personally identifiable information (such as Social Security numbers, biometric data, and financial or medical information). The EPA was unaware that both forms of personal information were included on incident tickets handled by help desk technicians, or that personal information was visible to anyone with access to the system. We found that the EPA's incident tracking system lacks the required privacy and security controls, which could lead to identity theft. We recommended that the EPA to implement a strategy to protect the confidentiality of personal information in the current incident tracking system, and to update standard operating procedures for help desk technicians. The agency has initiated corrective actions.



Depiction of consequences of at-risk personally identifiable information. (EPA OIG image)

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Significant Investigation Initiated via OIG Hotline

Individual Sentenced for Theft of Federal Funds

On July 30, 2018, Tracy Bronson of Marshall, Michigan, was sentenced to 37 months in federal prison and 3 years of supervised release, and ordered to pay $573,159 in restitution. Bronson was the Executive Director of the Calhoun Conservation District in Calhoun County, Michigan. In calendar years 2014, 2016 and 2017, the district received federal grant funds from the EPA and the U.S. Fish and Wildlife Service, and Bronson was accused of misappropriating over $500,000 of those funds for her own personal benefit and use. On April 6, 2018, Bronson pleaded guilty to one count of theft or bribery concerning programs receiving federal funds. Bronson admitted she embezzled between $500,000 and $1,500,000. On March 26, 2018, Bronson was also suspended by the EPA from future federal contracts and assistance activities.

Hotline Statistics

The following table shows EPA OIG Hotline activity regarding complaints of fraud, waste, abuse, mismanagement or misconduct in EPA programs and operations during the semiannual reporting period and annual period ending September 30, 2018.

	Semiannual Period (April 1, 2018 - September 30, 2018)	Annual Period (October 1, 2017 - September 30, 2018)
Issues open at the beginning of the period	294	220
Inquiries received during the period	183	380
Inquiries closed during the period	98	221
Inquiries pending at the end of the period	379	379
Issues referred to others		
OIG offices	165	335
EPA program offices	13	31
Other federal and state/local agencies	2	11
Contacts to the EPA OIG Hotline (telephone, voicemails, emails, website and correspondence)	4,950	10,293

The chart below details the categories of inquiries the EPA OIG Hotline receives that are retained by the EPA OIG and reviewed by investigation and audit staff. For FY 2018, the hotline retained 335 of the 380 inquiries received for review and action.

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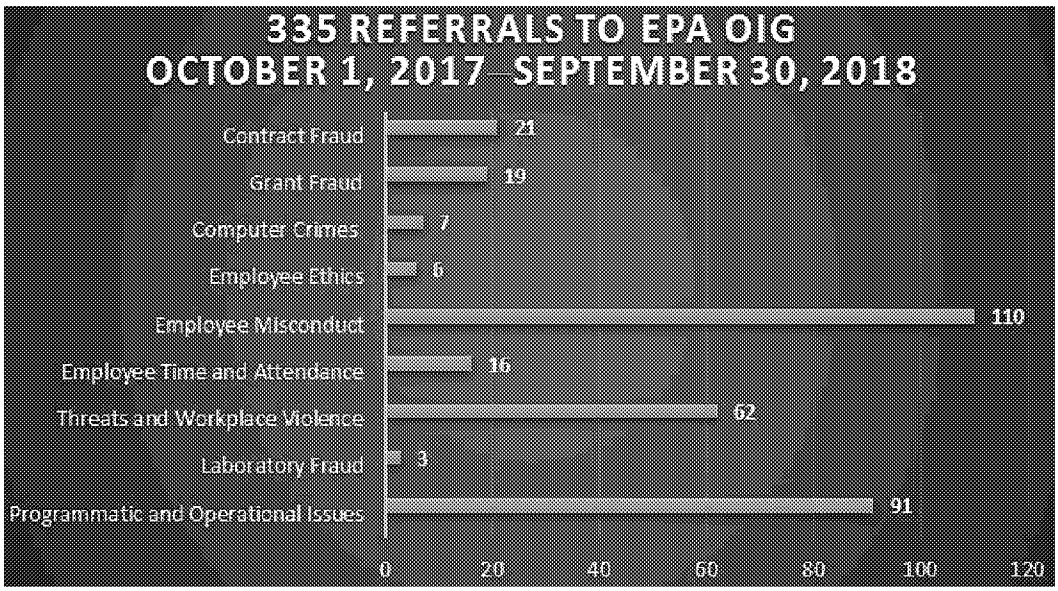

Hotline Confidentiality

The Inspector General Act of 1978, as amended, and other laws protect those who make hotline complaints. The Whistleblower Protection Enhancement Act of 2012 provides protection to employees who disclose misconduct or misuse of government resources. Individuals who contact the hotline are not required to identify themselves and may request confidentiality when submitting allegations. However, the OIG encourages those who report allegations to identify themselves so that they can be contacted if the OIG has additional questions. Pursuant to Section 7 of the Inspector General Act, the OIG will not disclose the identity of an EPA employee who provides information unless that employee consents or the Inspector General determines that such disclosure is unavoidable during the course of the investigation, audit or evaluation. As a matter of policy, the OIG will provide comparable protection to employees of contractors, grantees and others who provide information to the OIG and request confidentiality. Individuals concerned about the confidentiality or anonymity of electronic communication may submit allegations by telephone or U.S. mail.

EPA OIG Hotline

To report fraud, waste or abuse, contact us through one of the following methods:

email:	OIG_Hotline@epa.gov	write:	EPA OIG Hotline
phone:	888-546-8740 or 202-566-2476		1200 Pennsylvania Avenue, NW
fax:	202-566-0814		Mail Code 2431T
online:	EPA OIG Hotline		Washington, DC 20460

EPA Whistleblower Protection Coordinator

To contact the EPA Whistleblower Coordinator:

phone:	202-566-1513 (anonymity provided)	online:	EPA Whistleblower Protection

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Other Activities

OIG Office of Investigations' Records Demonstrate Compliance with Law Enforcement Availability Pay Requirements

Report No. 18-B-0228, issued August 6, 2018

In conjunction with our audit of the agency's handling of Law Enforcement Availability Pay for its investigators, we conducted an internal review of the OIG's Office of Investigations regarding management of this pay. We found that criminal investigators in the OIG properly recorded Law Enforcement Availability Pay hours in compliance with federal requirements and OIG policies, certifications were adequately supported, and required hours were worked. We noted that additional tracking system programming is needed by the OIG to calculate average times worked, and worksheets were not always approved within OIG-required timeframes. The OIG initiated corrective actions.

Quality Assurance Review of EPA OIG Reports Issued in Fiscal Year 2017

Report No. 18-N-0219, issued July 9, 2018

OIG quality assurance staff report annually on systemic issues identified during referencing and compliance monitoring reviews. They found that EPA OIG audit and evaluation reports issued in FY 2017 demonstrated high levels of compliance with OIG quality assurance procedures and received average compliance scores of nearly 94 percent. Their reviews of 47 FY 2017 reports indicated only one systemic issue: timeliness. Specifically, some assignments exceeded timeliness standards, and revisions to estimated milestones were not always approved and documented. OIG management agreed with steps recommended to make improvements.

OIG compliance monitoring review categories

Category	Point value	Average score
Planning and Execution	12.00	11.59
Communication	13.00	12.13
Supervision	30.00	28.53
Report Quality	20.00	19.51
Timeliness	15.00	12.36
Post Reporting/Data Quality	10.00	9.58
Total	**100.00**	**93.70**

Source: EPA OIG-generated.

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U.S. Chemical Safety and Hazard Investigation Board

The U.S. Chemical Safety and Hazard Investigation Board (CSB) was created by the Clean Air Act Amendments of 1990. The CSB's mission is to investigate accidental chemical releases at facilities, report to the public on the root causes and recommend measures to prevent future occurrences. In FY 2004, Congress designated the EPA Inspector General to serve as the Inspector General for the CSB. As a result, the EPA OIG has the responsibility to audit, evaluate, inspect and investigate the CSB's programs, and to review proposed laws and regulations to determine their potential impact on the CSB's programs and operations. Details on our work involving the CSB are available on the OIG's webpage about the CSB.

FY 2018 CSB Management Challenges

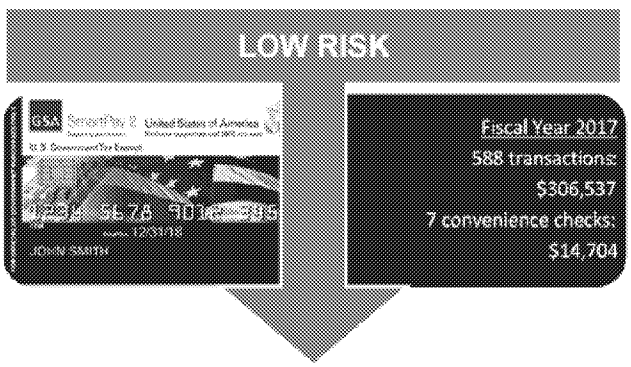
Report No. 18-N-0208, issued June 4, 2018

As required by the Reports Consolidation Act of 2000, the OIG identified management challenges and reported them to the CSB for FY 2018. One challenge noted that the position of CSB Chairperson lacks authority to hold board members accountable, and the board has been plagued with tension among board members. A second challenge noted that budget uncertainties and the President's proposals to eliminate the CSB negatively impact efforts to attract, hire and retain staff. We removed a challenge from FY 2017 regarding human resources management issues, as the CSB has taken sufficient action in that area.

CSB Audit Reports

CSB Purchase Card Program at Low Risk for Unauthorized Purchases

Report No. 18-P-0218, issued July 3, 2018



Depiction of purchase card and convenience check transactions, as well as risk determination. (EPA OIG image)

The CSB's purchase card program, for which it spent $321,241 in FY 2017, is at low risk for unauthorized purchases. We conducted this audit per the Government Charge Card Abuse Prevention Act of 2012. Our review of 18 purchase card and two convenience check transactions found that all but one were legitimate. For the one of concern, CSB identified the transaction, which was made by an outside party, as fraudulent; took proper steps to reverse the charge; and closed the associated card. We made no recommendations.

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CSB Complied with Improper Payments Legislation and Requirements for Fiscal Year 2017

Report No. 18-P-0175, issued May 9, 2018

The CSB was fully compliant with legislation for improper payments during FY 2017. As required, the CSB published its Performance and Accountability Report and posted that report and accompanying materials on the agency website. The CSB also conducted a risk assessment and did not identify any programs and activities susceptible to significant improper payments. The report made no recommendations.

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Other Results of OIG Work

Follow-Up Is Important Aspect of OIG Efforts

It is important for an OIG to follow up on certain previously issued reports to ensure that appropriate and effective corrective actions have been taken. The following reports issued during the semiannual reporting period ending September 30, 2018, involved follow-up on prior OIG reports.

Report no.	Report title	Date
18-P-0153	EPA Complied with Improper Payments Elimination and Recovery Act Requirements	April 16, 2018
18-P-0218	CSB Purchase Card Program at Low Risk for Unauthorized Purchases	July 3, 2018
18-N-0219	Quality Assurance Review of EPA OIG Reports Issued in Fiscal Year 2017	July 9, 2018
18-P-0222	EPA Completed OIG Recommendations for the Presidential Green Chemistry Challenge Awards Program but Lacks Controls over Use of Unverified Results	July 20, 2018
18-P-0232	EPA's Purchase Card and Convenience Check Program Controls Are Not Effective for Preventing Improper Purchases	August 20, 2018
18-P-0271	Delayed Cleanup of Asbestos Debris at the Old Davis Hospital Site Necessitates Changes for EPA Region 4 and North Carolina	September 18, 2018

Source: EPA OIG analysis.

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Single Audit Reporting Efforts Make Impact

In accordance with the Single Audit Act of 1984 and Office of Management and Budget guidance, nonfederal entities that expend more than $750,000 in federal funds (usually in the form of grants) are required to have a comprehensive annual audit of their financial statements and compliance with major federal program requirements. The entities receiving the funds include states, local governments, tribes and nonprofit organizations. The act provides that grantees are to be subject to one annual comprehensive audit of all their federal programs versus a separate audit of each federal program, hence the term "single audit." The audits are usually performed by private firms. Federal agencies rely upon the results of single audit reporting when performing their grants management oversight of these entities.

The OIG provides an important customer service to the EPA by performing technical reviews of single audit reports, and issues memos to the EPA for audit resolution and corrective action. These memos recommend that EPA action officials confirm that corrective actions have been taken. If the corrective actions have not been implemented, the EPA needs to obtain planned corrective actions, with milestone dates, for addressing the findings in a single report. A summary of single audit reporting actions during the semiannual reporting period ending September 30, 2018, follows.

Summary of single audit activity in FY 2018

	April 1, 2018–September 30, 2018	Total for FY 2018
No. of single audit memos issued to EPA	116	242
No. of single audit findings reported to EPA	249	507
Questioned costs reported to EPA	$2,943,508	$3,017,310
No. of quality reviews of single audits reports done by OIG	6	9
Deficiency letters issued to single auditors by OIG	3	4

Source: EPA OIG analysis.

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Agency Best Practices

During the semiannual reporting period, four OIG reports highlighted agency best practices that have potential value and applicability to other components in the EPA:

- The EPA provides financial support for research fellowships to encourage the pursuit of science-related careers. These fellowships are awarded directly by the EPA or by nonprofit organizations through cooperative agreements with the EPA. When the EPA directly awards fellowships, it requires that recipients have U.S. citizenship or permanent residency. Two of the three nonprofit organizations we audited had the same citizenship eligibility requirements, which we consider a best practice. (Report No. 18-P-0288)

- Region 8 implemented an Asbestos Hazard Emergency Response Act compliance monitoring strategy in 2013 that included significant efforts to conduct inspections and determine compliance levels among local educational agencies. In addition, since 2006, the region has used a database to track compliance. Region 8 is the only region to have a specific Asbestos Hazard Emergency Response Act compliance monitoring strategy despite EPA recommendations that each region have an overall annual strategy for its Toxic Substances Control Act compliance monitoring efforts. (Report No. 18-P-0270)

- On September 30, 2015, the White House Office of Science and Technology Policy directed agencies to advance the application of citizen science. The EPA's Office of Research and Development's innovation team began to develop a checklist of administrative and legal considerations for citizen science and crowdsourcing projects at the EPA. The Office of Research and Development also drafted an outreach and communication tool that highlights citizen science projects at the EPA to provide a representative distribution across the agency. The team intends to link the document to the citizen science intranet site to help EPA staff understand the breadth of projects underway. (Report No. 18-P-0240)

- Congress gives states the option to assume primary responsibility for implementing hazardous waste rules, with oversight from the federal government. For a state to assume the regulatory lead, however, it must be authorized by the EPA to do so. The EPA has taken steps to improve the state authorization process, including conducting a Lean effort to reduce the backlog and time required for authorization, implementing monthly conference calls with regions, and identifying state authorization as a priority in the FYs 2018–2019 National Program Managers' Guidance. (Report No. 18-P-0227)

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Statistical Data

Profile of Activities and Results

OIG audits * ($ in millions)	April 1, 2018, to September 30, 2018	FY 2018
Questioned costs	$0.174	$0.174
Potential monetary benefits **	$0.387	$375.051
Reports issued by OIG	34	52

Investigative operations * ($ in millions)	April 1, 2018, to September 30, 2018			FY 2018		
	EPA OIG only	Joint***	Total	EPA OIG only	Joint***	Total
Total fines and recoveries	$0.000	$0.762	$0.762	$0.000	$1.261	$1.261
Cost savings	$0.716	$0.000	$0.716	$1.255	$0.000	$1.255
Civil settlements	$0.362	$0.000	$0.362	$0.362	$0.000	$0.362
Cases opened during period	45	5	50	102	12	114
Indictments/informations/complaints	2	1	3	3	3	6
Cases closed during period	66	14	80	112	22	134
Convictions	2	1	3	2	2	4
Civil judgments/settlements/filings	1	0	1	1	0	1

* Section 5(a)(22) requires detailed descriptions of the particular circumstances of each inspection, evaluation and audit conducted by the OIG that was closed and not publicly disclosed. There were no instances of inspections, evaluations or audits that were closed and not publicly disclosed during the semiannual period ending September 30, 2018. Investigations that were closed but not previously publicly disclosed are found in Appendix 4.

** Questioned costs and potential monetary benefits are subject to change pending further review in the audit resolution process.

*** With another federal agency.

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Audit Report Resolution

Table 1: OIG-issued reports and value of questioned costs for semiannual period ending September 30, 2018 ($ in thousands)

Report category	No. of reports	Questioned costs *	Unsupported costs
A. For which no management decision was made by April1, 2018 **	10	$3,102	$3,037
B. New reports issued during period	34	174	0
Subtotals (A + B)	44	3,276	3,037
C. For which a management decision was made during the reporting period:	36		
(i) Dollar value of disallowed costs		69	0
(ii) Dollar value of costs not disallowed		0	0
D. For which no management decision was made by September 30, 2018	8	$3,208	$3,037

* Questioned costs include unsupported costs.

** Any difference in number of reports and amounts of questioned costs between this report and our previous semiannual report results from corrections made to data in our audit tracking system.

Table 2: OIG-issued reports and recommendations that funds be put to better use for semiannual period ending September 30, 2018 ($ in thousands)

Report category	No. of reports	Dollar value
A. For which no management decision was made by April 1, 2018 *	10	$376,241
B. New reports issued during the reporting period	34	562
Subtotals (A + B)	44	376,803
C. For which a management decision was made during the reporting period:	36	
(i) Dollar value of recommendations from reports that were agreed to by management		373,596
(ii) Dollar value of recommendations from reports that were not agreed to by management		106
D. For which no management decision was made by September 30, 2018	8	$3,207

* Any difference in number of reports and amounts of funds put to better use between this report and our previous semiannual report results from corrections made to data in our audit tracking system.

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Summary of Investigative Results

Summary of investigative activity during reporting period

Cases open as of April 1, 2018*	207
Cases opened during period	50
Cases closed during period	80
Cases pending as of September 30, 2018	177
Complaints open as of April 1, 2018	23
Complaints opened during period	69
Complaints closed during period	70
Complaints pending as of September 30, 2018	22

* Adjusted from prior period.

Results of prosecutive actions

	EPA OIG only	Joint *	Total
Criminal indictments/informations/complaints **	2	1	3
Convictions	2	1	3
Civil judgments/settlements/filings	1	0	1
Criminal fines and recoveries	$0	$573,284	$573,284
Civil recoveries	$361,943	$0	$361,943
Prison time	0 months	55 months	55 months
Prison time suspended	0 months	0 months	0 months
Home detention	0 months	0 months	0 months
Probation	0 months	36 months	36 months
Community service	0 hours	0 hours	0 hours

* With another federal agency.

** Sealed indictments are not included in this category.

Administrative actions

	EPA OIG only	Joint *	Total
Suspensions	8	3	11
Debarments	3	2	5
Other administrative actions	41	6	47
Total	**52**	**11**	**63**
Administrative recoveries	**$0**	**$188,838**	**$188,838**
Cost savings	**$716,178**	**$0**	**$716,178**

* With another federal agency.

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Summary of investigative reports issued and referrals *

Number of investigative reports issued	6
Number of persons referred to U.S. Department of Justice for criminal prosecution	20
Number of persons referred to state and local authorities for criminal prosecution	0
Number of criminal indictments and informations resulting from any prior referrals to prosecutive authorities	2

* Investigative reports are comprised of final Reports of Investigation, final summary reports, interim reports of investigation and supplemental reports of investigation. In calculating the number of referrals, corporate entities were counted as "persons."

Employee integrity cases*

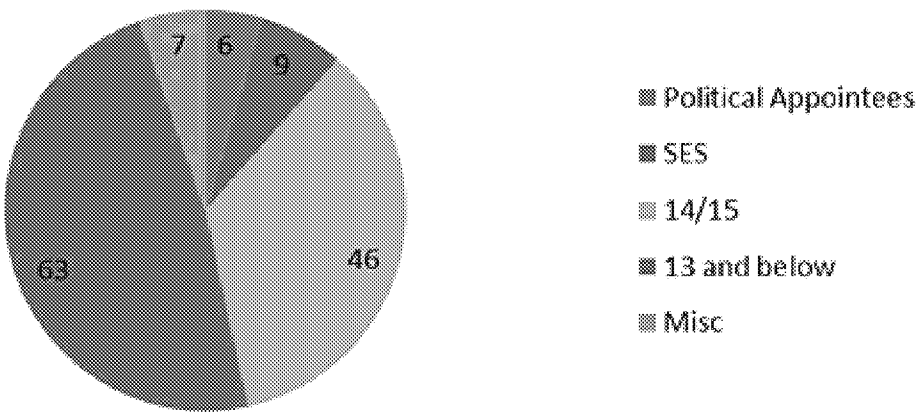
	Political appointees	SES	GS-14/15	GS-13 and below	Misc.	Total
Pending as of April 1, 2018	3	8	55	68	7	**141**
Opened*	4	2	1	6	3	**16**
Closed*	1	3	9	11	4	**28**
Pending as of September 30, 2018 **	6	9	46	63	7	**131**

* Integrity investigation cases involve allegations of criminal activity or serious misconduct by agency employees that could threaten the credibility of the agency, the validity of executive decisions, the security of personnel or business information entrusted to the agency, or financial loss to the agency (such as abuse of government bank cards or theft of agency funds). Allegations against former employees are included under "Misc."

** Pending numbers as of September 30, 2018, may not add up due to investigative developments resulting in subjects being added or changed.

The chart below provides a breakdown by grade and number of employees who are the subject of employee integrity investigations.

Employee integrity cases: Breakdown by grade and number of employees



Appendices

Appendix 1—Reports Issued

Section 5(a)(6) of the Inspector General Act of 1978, as amended, requires a listing, subdivided according to subject matter, of each report issued by the OIG during the reporting period. For each report, where applicable, the Inspector General Act also requires a listing of the dollar value of questioned costs and the dollar value of recommendations that funds be put to better use.

			Questioned costs			Potential monetary benefits
Report no.	Report title	Date	Ineligible	Unsupported	Unreasonable	
INTERNAL AUDIT OF EPA OIG						
18-B-0228	OIG Office of Investigations' Records Demonstrate Compliance with Law Enforcement Availability Pay Requirements	8/6/18	$0	$0	$0	$0
	SUBTOTAL = 1		**$0**	**$0**	**$0**	**$0**
PROJECTS NOT IN ACCORDANCE WITH GENERALLY ACCEPTED GOVERNMENT AUDITING STANDARDS						
18-N-0154	Management Alert - Salary Increases for Certain Administratively Determined Positions	4/16/18	$0	$0	$0	$0
18-N-0174	EPA's Fiscal Year 2018 Management Challenges	5/8/18	0	0	0	0
18-N-0208	Fiscal Year 2018 U.S. Chemical Safety and Hazard Investigation Board Management Challenges	6/4/18	0	0	0	0
18-N-0219	Quality Assurance Review of EPA OIG Reports Issued in Fiscal Year 2017	7/9/18	0	0	0	0
	SUBTOTAL = 4		**$0**	**$0**	**$0**	**$0**
PERFORMANCE AUDITS IN ACCORDANCE WITH GENERALLY ACCEPTED GOVERNMENT AUDITING STANDARDS						
18-P-0151	EPA's Safe and Sustainable Water Resources Research Program Is Delivering Timely and Relevant Data to the Office of Water	4/9/18	$0	$0	$0	$0
18-P-0153	EPA Complied with Improper Payments Elimination and Recovery Act Requirements	4/16/18	0	0	0	0
18-P-0175	CSB Complied with Improper Payments Legislation and Requirements for Fiscal Year 2017	5/9/18	0	0	0	0
18-P-0176	EPA Region 5 Needs to Better Protect Information Technology Property, and Areas for Agencywide Improvement Exist	5/9/18	0	0	0	0
18-P-0181	EPA Did Not Identify Volkswagen Emissions Cheating; Enhanced Controls Now Provide Reasonable Assurance of Fraud Detection	5/15/18	0	0	0	0
18-P-0206	Atlanta Is Largely in Compliance with Its Combined Sewer Overflow Consent Decree, but Has Not Yet Met All Requirements	5/30/18	0	0	0	0
18-P-0207	Operational Efficiencies of EPA's Human Resources Shared Service Centers Not Measured	5/31/18	0	0	0	0
18-P-0217	Management Alert - To Minimize Risk of Environmental Harm, the Security Categorization of Electronic Manifest System Data Needs to Be Re-Evaluated	6/21/18	0	0	0	0
18-P-0218	CSB Purchase Card Program at Low Risk for Unauthorized Purchases	7/3/18	0	0	0	0
18-P-0220	EPA Complied with the *Statement of Federal Financial Accounting Standards No. 47* and *Treasury Financial Manual*, Part 2, Chapter 4700	7/12/18	0	0	0	0
18-P-0221	Management Weaknesses Delayed Response to Flint Water Crisis	7/19/18	0	0	0	0
18-P-0222	EPA Completed OIG Recommendations for the Presidential Green Chemistry Challenge Awards Program but Lacks Controls over Use of Unverified Results	7/20/18	0	0	0	0

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Report no.	Report title	Date	Questioned costs			Potential monetary benefits
			Ineligible	Unsupported	Unreasonable	
18-P-0226	EPA's Chemical Data Reporting Rule Largely Implemented as Intended, but Opportunities for Improvement Exist	7/27/18	0	0	0	0
18-P-0227	Incomplete Oversight of State Hazardous Waste Rule Authorization Creates Regulatory Gaps and Human Health and Environmental Risks	7/31/18	0	0	0	0
18-P-0231	Without E-Invoicing and Stronger Payment Process Controls, EPA Is Placing $1.2 Billion at Risk Annually	8/16/18	0	0	0	292,000
18-P-0232	EPA's Purchase Card and Convenience Check Program Controls Are Not Effective for Preventing Improper Purchases	8/20/18	57,017	0	0	94,983
18-P-0233	EPA Needs to Finish Prioritization and Resource Allocation Methodologies for Abandoned Uranium Mine Sites on or Near Navajo Lands	8/22/18	0	0	0	0
18-P-0234	Without a Process for Monitoring Sensitive Data, EPA Region 4 Risks Unauthorized Access to File Servers and Share Folders	8/28/18	0	0	0	0
18-P-0238	EPA's June 2018 Issuance of the Delayed Notice of Availability of Farm Worker Protection Training Materials Will Reduce Risks of Injury and Illness	8/30/18	0	0	0	0
18-P-0239	EPA Asserts Statutory Law Enforcement Authority to Protect Its Administrator but Lacks Procedures to Assess Threats and Identify the Proper Level of Protection	9/4/18	106,000	0	0	0
18-P-0240	EPA Needs a Comprehensive Vision and Strategy for Citizen Science that Aligns with Its Strategic Objectives on Public Participation	9/5/18	0	0	0	0
18-P-0241	EPA Can Strengthen Its Process for Revising Air Quality Dispersion Models that Predict Impact of Pollutant Emissions	9/5/18	0	0	0	0
18-P-0250	Management Alert - EPA Oversight of Employee Debt Waiver Process Needs Immediate Attention	9/12/18	0	0	0	0
18-P-0270	EPA Needs to Re-Evaluate Its Compliance Monitoring Priorities for Minimizing Asbestos Risks in Schools	9/17/18	0	0	0	0
18-P-0271	Delayed Cleanup of Asbestos Debris at the Old Davis Hospital Site Necessitates Changes for EPA Region 4 and North Carolina	9/18/18	0	0	0	0
18-P-0281	Measures and Management Controls Needed to Improve EPA's Pesticide Emergency Exemption Process	9/25/18	0	0	0	0
18-P-0283	Collecting Additional Performance Data from States Would Help EPA Better Assess the Effectiveness of Vehicle Inspection and Maintenance Programs	9/25/18	0	0	0	0
18-P-0288	EPA Paid $14.5 Million to Foreign Fellows that Could Have Funded Research by U.S. Citizens or Permanent Residents	9/26/18	11,965	0	0	0
18-P-0298	Management Alert: EPA's Incident Tracking System Lacks Required Controls to Protect Personal Information	9/28/18	0	0	0	0
	SUBTOTAL = 29		**$174,982**	**$0**	**$0**	**$386,983**
	TOTAL REPORTS ISSUED = 34		**$174,982**	**$0**	**$0**	**$386,983**

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Appendix 2—Reports Issued Without Management Decisions

For Reporting Period Ended September 30, 2018

Section 5(a)(10)(B) of the Inspector General Act of 1978, as amended, requires a summary of each audit, inspection and evaluation report issued during the reporting period for which no establishment comment was returned within 60 days of providing the report to the establishment. The literal language of Section 5(a)(10)(B) requests the OIG to track reports issued prior to commencement of the reporting period. However, given that this provision was intended to codify the February 27, 2015, semiannual requests from Senators Grassley and Johnson, the OIG interprets this provision to apply to reports within the semiannual period. There were no reports for which we did not receive a response within 60 days during the semiannual period.

Section 5(a)(10)(A) of the Inspector General Act of 1978, as amended, requires a summary of each audit, inspection and evaluation report issued before the commencement of the reporting period for which no management decision had been made by the end of the reporting period, an explanation of the reasons such management decision had not been made, and a statement concerning the desired timetable for achieving a management decision on each such report. Office of Management and Budget Circular A-50 requires resolution within 6 months of a final report being issued. In this section, we report on audits and evaluations with no management decision or resolution within 6 months of final report issuance. In the summaries below, we provide the resolution status of management decisions not made as of September 30, 2018, which the OIG desires to resolve as soon as possible.

Office of the Administrator

Report No. 17-P-0378, *Management Alert: EPA Should Promptly Reassess Community Risk Screening Tool*, September 7, 2017

Summary: Our review substantiated some hotline allegations about the Community-Focused Exposure and Risk Screening Tool, known as C-FERST. We found that the EPA's Office of Research and Development took 8 years to develop a tool that is different from its intended purpose, requires effective training to use, overlaps with other EPA tools, and has not been widely used in the approximately 9 months after it was publicly released. Without metrics to measure performance, it is unclear whether the Community-Focused Exposure and Risk Screening Tool is being used for its intended purpose or meets user needs. Further, having multiple agency mapping tools that perform similar functions can confuse potential users. One recommendation—for the Deputy Administrator to examine all of the EPA's web-based screening and mapping tools to ensure the need for each tool and to avoid potential overlap, duplication and waste—is unresolved.

Resolution Status: The OIG received the EPA's response. The agency and the OIG continue to have discussions regarding the unresolved recommendation.

Office of Air and Radiation

Report No. 17-P-0249, *Improved Data and EPA Oversight Are Needed to Assure Compliance with the Standards for Benzene Content in Gasoline*, June 8, 2017

Summary: The EPA could improve the effectiveness of its oversight processes and controls for the benzene fuels program to better assure that refineries and importers report accurate and complete data, and comply with the gasoline benzene standards. We reviewed all batch and annual benzene reports for the period 2011 through 2014. Reported annual volumes and/or annual average benzene concentrations did not match supporting batch reports for over 25 percent of the regulated facilities. We identified potential noncompliance with the benzene standards at 40 facilities. EPA staff had never reviewed 16 of these facilities for compliance using the compliance assessment tool, conducted an on-site compliance audit as of the time of our review, or reviewed the facilities prior to the year in which we identified the potential noncompliance. According to data reported to the EPA at the time of our review, these 16 facilities produced or imported over 13 billion gallons of gasoline during 2011 through 2014, which potentially did not meet applicable benzene standards for gasoline (about 3 percent of total U.S. volume during that period). We made 10 recommendations for the EPA to improve data quality and completeness, and review instances of potential noncompliance. Two recommendations remain unresolved.

Resolution Status: The agency provided a response to the final report on October 19, 2017. Discussion regarding the two remaining unresolved recommendations is ongoing between the OIG and agency management.

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Office of Chemical Safety and Pollution Prevention

Report No. 18-P-0080, *EPA Needs to Evaluate the Impact of the Revised Agricultural Worker Protection Standard on Pesticide Exposure Incidents*, February 15, 2018

Summary: The EPA had policies and procedures to implement the revised Agricultural Worker Protection Standard, designed to protect the nation's more than 2 million agricultural workers and pesticide handlers from pesticide exposure. However, management controls to implement the revised standard were not fully adequate as of January 2, 2017, when compliance with most of the revised rule was required. Although required training was provided, essential materials were not available when the majority of the training was conducted. Also, the EPA did not have the ability to collect pesticide exposure incident data to measure impact. The agency did not agree with the recommendation to develop a methodology to evaluate incident data.

Resolution Status: The OIG received the EPA's response. The agency and the OIG continue to have discussions regarding the proposed corrective actions.

Region 8—Regional Administrator

Report No. 2007-4-00078, *Cheyenne River Sioux Tribe Outlays Reported Under Five EPA Assistance Agreements*, September 24, 2007

Summary: The tribe did not comply with the financial and program management standards under the Code of Federal Regulations and Office of Management and Budget Circular A-87. We questioned $3,101,827 of the $3,736,560 in outlays reported. The tribe's internal controls were not sufficient to ensure that outlays reported complied with federal cost principles, regulations and grant conditions. In some instances, the tribe also was not able to demonstrate that it had completed all work under the agreements and had achieved the intended results.

Resolution Status: The OIG has not received a response from the EPA.

Total reports issued before reporting period for which no management decision had been made as of September 30, 2018 = 4

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Appendix 3—Reports with Corrective Action Not Completed

In compliance with reporting requirements of Sections 5(a)(3) and 5(a)(10)(C) of the Inspector General Act of 1978, as amended, we are to identify each significant recommendation described in previous semiannual reports on which corrective action has not been completed, and a summary of each audit, inspection and evaluation report for which there are any outstanding unimplemented recommendations. We are also to identify the aggregate potential monetary benefits of the unimplemented recommendations.

This appendix contains separate tables of unimplemented recommendations for the EPA and the CSB from 2001 to September 30, 2018.

There is a total of 64 current and unimplemented recommendations for the EPA with total potential monetary benefits of approximately $86 million, which was sustained by the agency. Sustained cost is the dollar value of questioned costs or monetary benefits identified by the OIG during an audit/evaluation and agreed to in whole or in part by the agency. There is one unimplemented CSB recommendation with a total potential monetary benefit of approximately $0.402 million, all of which was sustained by the CSB.

In this report, corrective actions (CAs) and sub-recommendations (a., b. c., etc.) are not individually counted as recommendations.

Below is a listing of the responsible EPA offices to which recommendations included in the following tables are directed. While a recommendation may be listed as unimplemented, the agency may be on track to complete agreed-upon corrective actions by the planned due date.

Responsible EPA Offices:

OAR	Office of Air and Radiation
OARM	Office of Administration and Resources Management
OCFO	Office of the Chief Financial Officer
OCSPP	Office of Chemical Safety and Pollution Prevention
OECA	Office of Enforcement and Compliance Assurance
OEI	Office of Environmental Information
OLEM	Office of Land and Emergency Management
OP	Office of Policy (within the Office of the Administrator)
ORD	Office of Research and Development
OW	Office of Water
Region 2	
Region 6	
Region 9	

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EPA Reports with Unimplemented Recommendations

Report title, number and date	Office	Unimplemented recommendation	Planned completion date	Revised completion date	Potential monetary benefits recommended (in $000s)
EPA Can Better Manage State Pesticide Cooperative Agreements to More Effectively Use Funds and Reduce Risk of Pesticide Misuse 18-P-0079 2/13/18	OECA	1. Develop and implement additional Federal Insecticide, Fungicide, and Rodenticide Act guidance to assist Project Officers in evaluating whether funding is reasonable given projected work plan tasks.	11/30/19		
		2. Conduct a national review of state work plans and performance for Federal Insecticide, Fungicide, and Rodenticide Act cooperative agreements to verify the consistent application of agency guidance and achievement of agency goals and requirements.	5/31/19		
Self-Insurance for Companies with Multiple Cleanup Liabilities Presents Financial and Environmental Risks for EPA and the Public 18-P-0059 12/22/17 *Note: Recommendations listed here differ from the recommendations published in the final report and reflect changes agreed upon by the OIG and the agency.*	OLEM & OECA	1. Conduct a study to qualitatively and quantitatively analyze and evaluate the program effectiveness and resource requirements to EPA of the corporate self-insurance instruments, including the financial test and corporate guarantee, in the Resource Conservation and Recovery Act regulations and the Superfund Program for current settlements and orders. Assess adequacy of self-insurance instruments for companies with multiple environmental liabilities and the nature and extent of any problems identified.	3/31/19		
		2. Once the study in Recommendation 1 is complete, use the information to develop appropriate risk management actions to mitigate any identified problems in line with agency practices for enterprise risk management under Office of Management and Budget Circular A-123, and determine whether additional controls, such as the requirement for full disclosure of all self-insured environmental liabilities over corporate self-insurance, should be implemented and if corporate self-insurance should continue as an option.	9/30/20		
		3. Update standard operating procedures and data systems to accommodate the implemented risk management actions.	9/30/21		
		4. Train staff on the implemented risk management actions.	12/31/22	12/31/21	
		5. Develop or update existing standard operating procedures to outline the Office of Land and Emergency Management and Office of Enforcement and Compliance Assurance roles and responsibilities for overseeing the validity of Resource Conservation and Recovery Act and Superfund financial assurance instruments, where needed.	6/30/20	3/31/19	
		6. Develop and include procedures for checking with other regions for facilities/sites with multiple self-insured liabilities in the standard operating procedures created for Recommendation 5.	6/30/20	3/31/19	
		7. In the standard operating procedures created for Recommendation 5, develop and include instructions on (1) the steps to take when an invalid financial assurance instrument (expired, insufficient in dollar amount, or not provided) is identified and (2) how to collect information on the causes of invalid financial assurance.	6/30/20	3/31/19	
		8. Train staff on the procedures and instructions developed for Recommendations 5 through 7.	9/30/20	9/30/19	
		9a. Develop and distribute to EPA regions and states annual reports that include the total dollar amount of Superfund financial assurance required and provided.	Unprovided	12/31/19	

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Report title, number and date	Office	Unimplemented recommendation	Planned completion date	Revised completion date	Potential monetary benefits recommended (in $000s)
		9b. Work with EPA regions and states to identify and implement appropriate metrics, including metrics to help identify, track and correct, on a facility level, where there are monetary gaps in the amount of Resource Conservation and Recovery Act financial assurance required and provided. Develop and distribute to EPA regions and states annual reports on these metrics.	12/31/20	12/31/19	
		10. Develop and distribute to EPA regions and states annual reports that include progress on the reduction of financial assurance that is expired, insufficient and/or not provided.	9/30/19	12/31/19	
		11. To more accurately determine the value of insufficient instruments, add a data field(s) to the data system used for Superfund financial assurance to track when a lower amount of Superfund financial assurance is accepted by the EPA region or headquarters through negotiations with a responsible party or other arrangements.	12/31/18		
		12. Train staff on how to use the new data field created for Recommendation 11.	12/31/18		
EPA's Fiscal Years 2017 and 2016 Consolidated Financial Statements 18-F-0039 11/15/17	OCFO	1.Require the Compass Financials Project Manager to obtain the Federal Acquisition Certification for Program and Project Managers with the Information Technology specialization within the 1-year deadline, as required by the Office of Management and Budget, and take corrective actions if the Project Manager is not able to complete the certification requirements by the deadline.	10/31/18		
Analysis of Toxics Release Inventory Data Identifies Few Noncompliant Facilities 18-P-0001 10/5/17	OECA	2. After the implementation of mandatory electronic Discharge Monitoring Reports, review the usefulness of the Discharge Monitoring Report Comparison Dashboard for identifying possible unpermitted surface water dischargers using Toxics Release Inventory data, and modify as appropriate.	6/30/18	12/28/18	
EPA Can Better Reduce Risks from Illegal Pesticides by Effectively Identifying Imports for Inspection and Sampling 17-P-0412 9/28/17	OECA	1. Establish national compliance monitoring goals based on assessment and consideration of available regional resources.	9/30/19		
		2. Implement internal controls to monitor and communicate progress on regional goals.	9/30/19		
		4. Direct each EPA region to develop guidance or protocols that define how the region will coordinate with local U.S. Customs and Border Protection offices on illegal pesticides that are imported without Notices of Arrival.	9/30/18	3/30/19	
EPA's Distribution of Superfund Human Resources Does Not Support Current Regional Workload 17-P-0397 9/19/17	OLEM	1. In coordination with the Chief Financial Officer, develop and implement actions to address past obstacles that have affected the EPA's ability to make progress on the allocation of human resources. Obstacles include management's unwillingness to change its human resource allocation process and perceived short-term disruptions that would result from such a change.	9/30/18	1/31/19	
		3. Implement a national prioritization of all sites including risk and other factors in the prioritization and regularly distribute regional full-time equivalents according to the national prioritization.	9/30/18	1/31/19	
Management Alert: EPA Should Promptly Reassess Community Risk Screening Tool 17-P-0378 9/7/17	ORD	1. Review the Community-Focused Exposure and Risk Screening Tool and develop an action plan with timeframes to address issues identified, including considerations on whether to retain the tool. If retained: a. Develop metrics for measuring the tool's performance and establish a regular schedule for performance evaluations. b. Survey users to obtain feedback on tool utilization and any needed improvements.	9/30/19		

Report title, number and date	Office	Unimplemented recommendation	Planned completion date	Revised completion date	Potential monetary benefits recommended (in $000s)
		2. Develop policies and procedures for planning, developing, implementing and monitoring the performance of web-based research tools. Policies and procedures could build on the draft guidance for web-based tools developed by the National Exposure Research Laboratory, and should ensure that any new Office of Research and Development research tool stems from a clear project proposal that includes ongoing monitoring metrics and outcome measures, and vetting to ensure there is a need and no overlap with other tools.	9/30/18		
		3. Review new and existing Office of Research and Development research tools to determine the applicability of the agency's information technology requirements.	9/30/19		
		4. Work with agency offices responsible for other geospatial mapping tools to develop a decision support matrix for when to use certain tools and for what purposes.	9/30/19		
EPA Needs to Increase Oversight of Leave Bank Program to Improve Efficiency and Reduce Risk of Misuse 17-P-0374 8/28/17	OARM	6. Issue guidance to and train supervisors on the leave bank and leave transfer programs and their roles and responsibilities for approving and attesting timesheets of employees using the leave programs.	6/30/18		
EPA's Voluntary WaterSense Program Demonstrated Success 17-P-0352 8/1/17	OW	1. Share WaterSense program practices in program design, implementation and reporting with the agency's Program Management Improvement Officer.	9/30/18		
EPA Needs to Institutionalize Its "Lean" Program to Reap Cost and Time Benefits 17-P-0346 7/31/17	OP	1. Implement a strategy for institutionalizing the Lean Government Initiative within the agency by integrating the application of Lean practices and business process improvement approaches.	6/30/18		
		2. Develop policies that specify how to plan, design, oversee and implement Lean practices within the agency.	6/30/18		
		3. Develop a process for monitoring, tracking and measuring quantifiable results, including cost savings, for Lean projects.	1/31/18		
		4. Develop a process for a) vetting projects that have the potential for standardized implementation across the agency and b) collaborating on projects to maximize the application of Lean, as well as sharing experiences and lessons learned agencywide.	6/30/18		
		5. Develop and implement a consistent and standardized Lean training effort for the EPA's staff.	6/30/18		
EPA Should Assess Needs and Implement Management Controls to Ensure Effective Incorporation of Chemical Safety Research Products 17-P-0294 6/23/17	OCSPP	1. Conduct a needs assessment that identifies and addresses the challenges, timeframes, training and resources necessary to effectively incorporate Office of Research and Development products into Office of Chemical Safety and Pollution Prevention programs.	5/31/18	11/30/18	
		2. Develop and implement management controls that formalize the Office of Chemical Safety and Pollution Prevention's processes for collaborating with the Office of Research and Development to maintain current products and develop future products.	5/31/18	11/30/18	
EPA Can Strengthen Its Oversight of Herbicide Resistance with Better Management Controls 17-P-0278 6/21/17	OCSPP	1. Consider requiring mechanisms of action be included on relevant herbicide labels.	6/30/19		
		2. Determine whether synergistic effects data should be required for the pesticide registration process and document the results of that determination.	6/30/19		

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Report title, number and date	Office	Unimplemented recommendation	Planned completion date	Revised completion date	Potential monetary benefits recommended (in $000s)
Improved Data and EPA Oversight Are Needed to Assure Compliance with the Standards for Benzene Content in Gasoline 17-P-0249 6/8/17	OAR	4. Ensure the integrity of benzene credit trading by developing and implementing a process to verify the annual average benzene concentration and total volume values that facilities input into the trading database are supported by batch reports.	9/30/20		
		5. Revise the annual benzene report so that facilities must report the number of benzene deficits or credits at the end of the current reporting year.	9/30/20		
EPA Needs to Provide Leadership and Better Guidance to Improve Fish Advisory Risk Communications 17-P-0174 4/12/17	OW	1. Provide updated guidance to states and tribes on clear and effective risk communication methods for fish advisories, especially for high-risk groups. This guidance could recommend posting fish advisory information at locations where fish are caught and using up-to-date communication methods that include social media, webinars, emails, newsletters, etc.	3/31/20		
		2. Working with states and tribes, develop and disseminate best practices they can use to evaluate the effectiveness of fish advisories in providing risk information to subpopulations, such as subsistence fishers, tribes and other high fish-consuming groups.	3/30/20		
		3. Develop and implement methods to ensure that tribal members receive current fish advisory information.	9/30/18		
	ORD	4. Conduct an assessment for methylmercury to determine whether the reference dose requires updating, as indicated by the Integrated Risk Information System, and as proposed in the system's 2012 and 2015 agendas.	12/31/18		
Additional Measures Can Be Taken to Prevent Deaths and Serious Injuries from Residential Fumigations 17-P-0053 12/12/16	OCSPP	2. Provide label language that clearly defines the criteria for meeting the applicator stewardship training requirement, including the frequency of training.	5/31/18	1/31/19	
Religious Compensatory Time Is Subject to Abuse 16-P-0333 9/27/16	OCFO	4. Modify the EPA's payroll and time and attendance system to include the enhanced internal controls, preventing employees from accumulating Religious Compensatory Time hours inconsistent with revised policies and procedures.	9/30/18	11/30/18	
EPA Needs a Risk-Based Strategy to Assure Continued Effectiveness of Hospital-Level Disinfectants 16-P-0316 9/19/16	OCSPP	2. Develop a risk-based antimicrobial testing strategy to assure the effectiveness of public health pesticides used in hospital settings once products are in the marketplace. At a minimum, the strategy should: a. Include a framework for periodic testing to assure products continue to be effective after registration. b. Define a program scope that is flexible and responsive to current and relevant public health risks. c. Identify risk factors for selecting products to test. d. Identify the method to be used for obtaining samples for testing. e. Designate a date to commence risk-based post-registration testing.	11/30/18		
Hawaii Department of Health Needs to Reduce Open Grants and Unspent Funds 16-P-0218 6/28/16	Region 9	1. Re-evaluate the status of the fundable projects and the Hawaii Department of Health's progress on implementing the corrective action plan items prior to awarding the FY 2016 allotment of $8,312,000 and any future award. The re-evaluation should continue until the Hawaii Department of Health meets the agency's funding utilization target.	7/31/17	11/30/18	$8,312

Report title, number and date	Office	Unimplemented recommendation	Planned completion date	Revised completion date	Potential monetary benefits recommended (in $000s)
EPA Needs to Assess Environmental and Economic Benefits of Completed Clean Water State Revolving Fund Green Projects 16-P-0162 5/2/16	OW	2. Implement a process (through a grant requirement or otherwise) for routine collection of Green Project Reserve benefits of completed projects as part of the EPA's regular oversight of state programs.	3/31/18	9/30/18	
EPA Needs to Improve the Recognition and Administration of Cloud Services for the Office of Water's Permit Management Oversight System 15-P-0295 9/24/15	OW	4. Develop and implement an approved system authorization package (i.e., a risk assessment, System Security Plan and Authorization to Operate) and perform annual security assessments for the Permit Management Oversight System application.	5/31/16		
Incomplete Contractor Systems Inventory and a Lack of Oversight Limit EPA's Ability to Facilitate IT Governance 15-P-0290 9/21/15	OEI	5. Implement the recommendation of the EPA's Information Security Task Force to manage the vulnerability management program.	9/30/18		
Conditions in the U.S. Virgin Islands Warrant EPA Withdrawing Approval and Taking Over Management of Some Environmental Programs and Improving Oversight of Others 15-P-0137 4/17/15	Region 2	13. To improve oversight of the Underground Storage Tank/ Leaking Underground Storage Tank program, establish an updated Underground Storage Tank/Leaking Underground Storage Tank Memorandum of Agreement with the U.S. Virgin Islands that reflects changes and new provisions results from the Energy Policy Act of 2005. The memorandum of agreement should also outline roles, responsibilities and expectations.	9/30/18	3/31/19	
		18. Develop a plan to address currently uncompleted tasks and activities, and develop a schedule for reprogramming grant funds to accomplish these tasks if the U.S. Virgin Islands does not or cannot complete them. Upon completion of the financial management corrective actions, follow the Office of the Chief Financial Officer's Resource Management Directive System 2520-03 to determine whether any of the current unspent funds of approximately $37 million under the U.S. Virgin Islands' assistance agreements could be put to better use.	9/30/18	3/31/19	$37,000
Cloud Oversight Resulted in Unsubstantiated and Missed Opportunities for Savings, Unused and Undelivered Services, and Incomplete Policies 14-P-0332 7/24/14	OEI	4. Prior to entering into any future Infrastructure-as-a-Service contracts, perform a formal documented analysis to determine whether such contracts are in the EPA's best interest that includes the investments the EPA would have to make to address integration requirements, obstacles and gaps identified as a result of the current Infrastructure-as-a-Service contract.	10/16/17	10/31/18	
Internal Controls Needed to Control Costs of Emergency and Rapid Response Services Contracts, as Exemplified in Region 6 14-P-0109 2/4/14	Region 6	3. Direct Contracting Officers to require that the contractor adjust all its billings to reflect the application of the correct rate to team subcontract Other Direct Costs.	9/30/24		

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Report title, number and date	Office	Unimplemented recommendation	Planned completion date	Revised completion date	Potential monetary benefits recommended (in $000s)
Improvements Needed in EPA Training and Oversight for Risk Management Program Inspections 13-P-0178 3/21/13	OLEM	7. Coordinate with the Assistant Administrator for Enforcement and Compliance Assurance to revise inspection guidance to recommend minimum inspection scope for the various types of facilities covered under the program and provide detailed examples of minimum reporting.	2/28/19		
		8. Coordinate with the Assistant Administrator for Enforcement and Compliance Assurance to develop and implement an inspection monitoring and oversight program to better manage and assess the quality of program inspections, reports, supervisory oversight and compliance with inspection guidance.	2/28/20		
EPA Needs to Improve Air Emissions Data for the Oil and Natural Gas Production Sector 13-P-0161 2/20/13	OAR	2. Prioritize and update existing oil and gas production emission factors that are in greatest need of improvement and develop new emission factors for key oil and gas production processes that do not currently have emission factors. CA2.4 - The EPA will set forth procedures for developing emissions factors based on data collected with non-traditional measurement techniques and incorporate those procedures into the Web Information Retrieval System (WebFIRE).	9/30/19		
Controls Over State Underground Storage Tank Inspection Programs in EPA Regions Generally Effective 12-P-0289 2/15/12	OLEM	1. Require the EPA and states to enter into memorandums of agreement that reflect program changes from the 2005 Energy Policy Act and address oversight of municipalities conducting inspections.	10/13/18		
EPA Needs to Further Improve How It Manages Its Oil Pollution Prevention Program 12-P-0253 2/6/12	OLEM	1. Improve oversight of facilities regulated by the EPA's oil pollution prevention program by: d. Producing a biennial public assessment of the quality and consistency of Spill Prevention, Control, Countermeasure Plans and Facility Response Plans based on inspected facilities. CA1-2: A summary of findings will be developed by October 2013. These findings will help to identify areas where additional guidance and outreach are needed to improve the quality and consistency of Spill Prevention, Control, Countermeasure Plans. CA1-3: The model developed for the Spill Prevention, Control, Countermeasure program will then be used to develop a review protocol for Facility Response Plan by September 2013 to examine Facility Response Plan inspections conducted during the FY 2013 inspection cycle. CA1-4: A summary of findings will be developed by October 2014. These findings will help to identify areas where additional guidance and external outreach are needed to improve the quality and consistency of Facility Response Plans.	6/30/20		
EPA Should Update Its Fees Rule to Recover More Motor Vehicle and Engine Compliance Program Costs 11-P-0701 9/23/11	OAR	1. Update the 2004 fees rule to increase the amount of Motor Vehicle and Engine Compliance Program costs it can recover.	12/31/18		$13,000
EPA Should Revise Outdated or Inconsistent EPA-State Clean Water Memoranda of Agreement 10-P-0224 9/14/10	OECA	2-2. Develop a systematic approach to identify which states have outdated or inconsistent memorandums of agreements; renegotiate and update those Memoranda of Agreements using the Memorandum of Agreements template; and secure the active involvement and final, documented concurrence of headquarters to ensure national consistency.	9/28/18	9/30/20	

Report title, number and date	Office	Unimplemented recommendation	Planned completion date	Revised completion date	Potential monetary benefits recommended (in $000s)
EPA Needs a Coordinated Plan to Oversee Its Toxic Substances Control Act Responsibilities 10-P-0066 2/17/10	OCSPP	2-4 Establish criteria and procedures outlining what chemical or classes of chemicals will undergo risk assessments for low-level and cumulative exposure. Periodically, update and revise risk assessment tools and models with the latest research and technology developments.	12/31/17		
Audit of EPA's Fiscal 2009 and 2008 (Restated) Consolidated Financial Statements 10-1-0029 11/16/09	OCFO	27. Ensure that all new financial management systems (including the Integrated Financial Management System replacement system) and those undergoing upgrades include a system requirement that the fielded system include an automated control to enforce separation of duties. CA27.9: The Office of Technology Solutions will modify Compass user profiles to create specific security roles to allow Compass Security Officers to better manage user access. CA27.10: The Office of Technology Solutions will enhance the Access Request Form application to add additional controls and automatic logic to check for approved waivers on file to prevent users from submitting security options that violate the separation of duties policy.	12/31/18		
Making Better Use of Stringfellow Superfund Special Accounts 08-P-0196 7/9/08	Region 9	2. Reclassify or transfer to the Trust Fund, as appropriate, $27.8 million (plus any earned interest less oversight costs) of the Stringfellow special accounts in annual reviews, and at other milestones including the end of Fiscal Year 2010, when the record of decision is signed and the final settlement is achieved.	12/31/12		$27,800
				Total	$86,112

CSB Reports with Unimplemented Recommendations

Report title, number and date	Office	Unimplemented recommendation	Planned completion date	Revised completion date	Potential monetary benefits recommended (in $000s)
CSB Needs to Continue to Improve Agency Governance and Operations 16-P-0179 5/23/16	CSB	6. Include the General Services Administration in any future office leasing plans and revisit office needs for a potential adjustment or supplement to the Washington, D.C., and Denver office leases to reduce space within the General Services Administration benchmarks.	D.C. 10/20/22 Denver 11/30/19		$402
				Total	$402

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Appendix 4—Closed Investigations Not Publicly Disclosed

For Reporting Period Ended September 30, 2018

Details on each investigation conducted by the OIG involving both senior and non-senior employees closed during the semiannual reporting period ending September 30, 2018, are provided below. We also include a separate listing of investigations conducted by the OIG and closed during the semiannual reporting period involving non-employees such as grant recipients, contractors and former EPA employees.

Investigations Involving Presidential Appointees Not Previously Publicly Disclosed

CASE NUMBER: OI-HQ-2018-ADM-0081
This case addressed multiple allegations against the EPA Administrator. This case was subsequently split into subsidiary cases addressing the separate specific allegations. The OIG does not identify or acknowledge the existence of any open cases.

CASE NUMBER: OI-HQ-2018-AFD-0112
The Inspector General reported his EPA OIG badge and credential as missing. The items could not be located, and this information was entered into the National Crime Information Center database.

Investigations Involving Senior Employees Not Previously Publicly Disclosed

CASE NUMBER: OI-HQ-2016-ADM-0080
An EPA SES-level director allegedly verbally and physically assaulted a subordinate employee during a workplace meeting. The Federal Protective Service was contacted. The OIG investigation was inconclusive but was referred to the EPA. Subsequently, the EPA conducted its own review. The SES employee retired after receiving a notice of suspension from EPA management for lack of candor in an official investigation.

CASE NUMBER: OI-HQ-2016-ADM-0063
An EPA SES-level director allegedly failed to attend a conference while on official government travel and was instead absent without leave. The allegation was not supported.

CASE NUMBER: OI-HQ-2018-ADM-0072
An EPA SES-level employee allegedly viewed classified material without a security clearance. This employee was allegedly allowed to view the material by a GS-14 employee. The investigation revealed that the SES employee maintained the proper security clearance. Therefore, the GS-14 employee did not commit a violation for allowing access to classified information. Neither allegation was supported.

CASE NUMBER: OI-HQ-2018-ADM-0066
An EPA SES-level employee allegedly engaged in inappropriate behavior with three subordinate female employees. It was alleged that two of the subordinate employees resigned due to their relationship with the SES employee and the remaining subordinate was promoted due to the relationship with the SES employee. Based on an extensive review of EPA documents and interviews of witnesses and the subject, it was determined that the allegations were not supported.

CASE NUMBER: OI-BO-2018-OTH-0067
The personal cell phone, government-issued cell phone and personal credit cards of an EPA OIG GS-15 employee were allegedly stolen while the employee was on official travel. The investigation found sufficient evidence to support that the employee's personal credit cards were stolen and used to make unauthorized purchases. However, the cell phones could not be recovered, and the identity of the suspect could not be determined.

CASE NUMBER: OI-BO-2016-CAC-0001
An EPA GS-15 employee allegedly retroactively manipulated timecards to falsely reflect telework or annual leave following a medical procedure. The employee also allegedly falsely claimed and received public transit

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reimbursement. The investigation did not develop sufficient evidence to support the allegation that the employee improperly recorded time and attendance. However, the investigation, which looked at a 19-month period, did develop sufficient evidence to support the allegation that the employee claimed and received public transit reimbursement while not actually commuting to the office via public transit. The employee reimbursed the EPA $2,690 and was issued a letter of reprimand for the submission of inaccurate public transit subsidy claims. The case was referred to and declined for prosecution by the U.S. Department of Justice on May 24, 2016.

CASE NUMBER: OI-HQ-2017-ADM-0036
An EPA GS-15 employee allegedly allowed a subordinate employee to attend school during core working hours. The investigation did not support the allegation.

CASE NUMBER: OI-HQ-2017-CAC-0048
An EPA GS-15 employee allegedly possessed marijuana while on official EPA travel. It was also alleged that the employee sold marijuana to EPA employees. The investigation supported the first allegation but not the second. The employee received a 3-day suspension. The case was referred to and declined for prosecution by the U.S. Department of Justice on June 7, 2017.

CASE NUMBER: OI-HQ-2018-ADM-0017
An EPA GS-15 employee allegedly traveled to a high-risk country with an EPA computer and, during the trip, the computer became infected with malware, was decrypted by unknown individuals, and was possibly used to compromise EPA network security. It was discovered during the investigation that the EPA had mistakenly turned off the encryption on the computer and the computer was not infected with malware. The allegation of traveling to a high-risk country with an EPA computer and compromising EPA network security was not supported.

CASE NUMBER: OI-AT-2017-CFD-0145
An EPA GS-15 supervisor allegedly had EPA contractors come to the supervisor's home regularly and promised work to these contractors. The investigation found no evidence of bribery or that the supervisor steered work to contractors. However, the investigation obtained evidence that showed the supervisor created an appearance of a loss of impartiality in interactions with EPA contractors and grantees. The supervisor frequently met with contractors for lunch or dinner and hosted contractors at home. On one occasion, the supervisor invited an EPA contractor to stay overnight at the supervisor's home in lieu of staying at a local hotel. Additionally, emails between the supervisor and EPA contractors contained references to alcohol and facilitating meetings with high-level EPA officials. The investigation found that the supervisor received a gift of alcohol from an EPA grantee. The supervisor received a 5-day suspension for "exercising poor judgment (social interactions with EPA contractor leading to the appearance of impropriety)." The case was referred to the U.S. Department of Justice on January 26, 2018, and declined for prosecution on March 1, 2018.

CASE NUMBER: OI-HQ-2015-ADM-0084
An EPA GS-15 employee allegedly provided false information on a federal job application. The investigation found information to support the allegation that the employee provided false information on Standard Form 85P, *Questionnaire for Public Trust Positions*. On the form, the employee claimed to have attained an associate degree from an area college. The employee admitted that the degree was not attained but said that enough credit hours were completed to be eligible for an associate degree. The employee's supervisor stated that a degree is not part of the criteria for that position, and no administrative action was taken by EPA management. The case was referred to the U.S. Department of Justice on September 4, 2015, and declined for prosecution on September 9, 2015.

CASE NUMBER: OI-AR-2016-ADM-0036
An EPA GS-15 employee allegedly used his official position to influence a contractor to hire a former EPA colleague. Multiple interviews and record reviews were conducted, and an EPA ethics official reviewed the facts of the case. The investigation did not support the allegation.

Investigations Involving Non Senior Employees Not Previously Publicly Disclosed

CASE NUMBER: OI-HQ-2017-ADM-0141
An EPA GS-14 employee allegedly misrepresented employment history on the employee's job application. The investigation discovered that periods of unemployment were omitted. The employee was within the 1-year new

employee probationary period, and the employee's management terminated the individual's employment with the EPA.

CASE NUMBER: OI-HQ-2017-ADM-0071
An investigation was initiated into whether an EPA GS-14 employee posed a potential threat when another employee found printed material about firearms in the GS-14 employee's workspace. Investigators were informed that the GS-14 employee had no work-related reason to have this type of material in the workspace. However, the investigation determined that the employee is a firearms collector and did not a pose a threat to self or other EPA employees. The allegation was not supported.

CASE NUMBER: OI-HQ-2016-ADM-0007
An EPA GS-14 Criminal Investigator in the EPA's Criminal Investigation Division allegedly used a government-owned vehicle to travel out of town on a personal trip without approval. The Criminal Investigator allegedly allowed a fellow Criminal Investigation Division agent, who was off duty, to go on the unauthorized trip. The allegations were supported. It was also discovered that significant damage occurred to the government-owned vehicle during the trip. There were no corresponding vehicle reports, and EPA management was not notified of the vehicle damage. The actions of the GS-14 Criminal Investigator violated the office's policy and procedure related to the use of government-owned vehicles. The GS-14 Criminal Investigator retired from federal service after management issued a notice of proposed removal. This case is related to case number OI-HQ-2015-CAC-0090 (immediately below).

CASE NUMBER: OI-HQ-2015-CAC-0090
An EPA GS-13 Criminal Investigator in the EPA's Criminal Investigation Division traveled as a passenger while off duty with another Criminal Investigation Division agent on an unauthorized trip. The GS-13 Criminal Investigator was given 14 days' leave without pay for unauthorized use of a government-owned vehicle. This case is related to case number OI-HQ-2016-ADM-0007 (immediately above).

CASE NUMBER: OI-WI-2017-ADM-0017
An EPA GS-13 employee was arrested on sexual assault-related charges unrelated to the employee's EPA employment. The charges were a result of a 2003 case in which new evidence was developed. The employee was suspended and barred from EPA premises while the charges were pending. Due to the statute of limitations expiring, the case was dismissed by the court and the employee was reinstated.

CASE NUMBER: OI-SA-2018-ADM-0041
An EPA GS-13 employee was arrested for felony charges relating to destruction of private property and assault with the use of a vehicle. The arrest did not occur during work hours or while the employee was representing the EPA. The EPA employee was screened to determine if a threat within the workplace existed. The employee had already engaged the EPA Employee Assistance Program, has kept management advised of the situation, and is awaiting the outcome of the pending charges. It was determined that the EPA employee did not pose a threat within the workplace.

CASE NUMBER: OI-HQ-2016-CAC-0024
An EPA GS-13 employee allegedly allowed contractors to include commute times in billing for the hours that they were supposed to be completing work at an EPA site. The investigation supported the allegation. The employee received a written warning, additional training and enhanced supervision. The EPA was reimbursed by the contractor for the billed commuting time.

CASE NUMBER: OI-HQ-2018-ADM-0014
An EPA GS-13 employee allegedly lied on a resume and Standard Form 85P, *Questionnaire for Public Trust Positions*. The investigation did not find that any incorrect or false information was reported. The allegations were not supported.

CASE NUMBER: OI-HQ-2014-ADM-0049
An EPA GS-13 Criminal Investigator in the EPA's Criminal Investigation Division allegedly discharged a service weapon by accident, causing injury to self. The allegation was supported. The Criminal Investigator accidentally discharged a bullet into the Criminal Investigator's leg while holstering the firearm while sitting in a vehicle, causing injury.

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CASE NUMBER: OI-CI-2016-ADM-0039
An EPA GS-13 employee allegedly misused the official government travel card. The investigation found that the employee made numerous cash withdrawals not associated with official travel. The employee had no recollection of making the cash withdrawals but acknowledged the withdrawals were made. The card balance was paid in full, and no further action was taken.

CASE NUMBER: OI-DA-2017-ADM-0051
An EPA GS-13 employee allegedly used an EPA email account and computer for personal business. The investigation supported the allegations. The employee admitted to using the EPA email account and computer to conduct personal business during work hours for several years. The employee received a letter of reprimand and was suspended from participation in the telework program for 1 year.

CASE NUMBER: OI-HQ-2017-ADM-0115
An EPA OIG GS-13 employee allegedly engaged in time-and-attendance fraud. The investigation did not support the allegation.

CASE NUMBER: OI-HQ-2017-ADM-0130
An EPA GS-13 employee was allegedly in possession of a counterfeit Personal Identity Verification card. The investigation supported the allegation in that the employee had created an almost identical copy of the EPA-issued Personal Identity Verification card. EPA management issued the employee a 4-day suspension.

CASE NUMBER: OI-AT-2017-ADM-0123
An investigation was initiated after an EPA GS-11 employee was arrested for soliciting a prostitute. The employee allegedly used an EPA cell phone and computer to facilitate the crime. The allegation was not supported, but the investigation found that the employee engaged in other activities facilitating the crime during official duty hours and falsely recorded the total number of work hours in the EPA timekeeping system for the date on which the arrest occurred. When confronted, the employee provided EPA management and OIG investigators with false and/or misleading information related to the arrest. The employee received a 14-day suspension for displaying a lack of candor in statements made to the supervisor and OIG investigators, engaging in conduct inappropriate for the workplace, and misusing official duty time.

CASE NUMBER: OI-HQ-2018-PFD-0038
An EPA employee was found unresponsive in an EPA facility restroom. The local fire department responded and found that the employee had died. An investigation was opened in case the results of the autopsy showed that the employee did not die from natural causes. The medical examiner ruled the employee's death was from natural causes.

CASE NUMBER: OI-HQ-2018-ADM-0028
An unknown EPA employee(s) allegedly accessed and disclosed, without authorization, the EPA Administrator's official EPA travel records regarding a trip abroad. Employees with access to the Administrator's travel account were interviewed and all denied committing the unauthorized release. The investigation was inconclusive.

Investigations Involving Non Employees Not Previously Publicly Disclosed

CASE NUMBER: OI-CH-2018-ADM-0001
An EPA supervisor notified the OIG of suspected child pornography on an EPA computer. The supervisor had received a computer from a former EPA employee approximately a year after the employee separated from the EPA. A review of the computer showed suspicious child pornography wording on the computer files. Adult pornography, but not child pornography, was found on the computer. As the EPA employee already was separated from the EPA, no administrative action was taken.

CASE NUMBER: OI-AR-2017-CAC-0003
A network storage server hosted by the Office of Environmental Information was found to be unsecured, which could have enabled users to access the file shares on the server. This server routinely had been used to transfer the email files and folders of subjects under investigation by the OIG. The investigation determined that the audit log functions of the server were not enabled; therefore, detailed audit records were not available.

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Without audit records, the root cause determination is not available. The server was secured, and no evidence of data exfiltration was observed.

CASE NUMBER: OI-NE-2014-CFR-0121
It was alleged that a company was not performing a certain water testing procedure in accordance with EPA regulations on an EPA-funded contract. The investigation found that the required testing procedure was not being followed, but it was inconclusive as to whether the analysts were purposely not following the proper testing procedure. In addition, the investigation was inconclusive as to whether the improper testing procedure that was used had any impact on projects funded directly or indirectly by the EPA.

CASE NUMBER: OI-DA-2014-CFR-0098
An investigation into an EPA grant recipient for potential fraudulent activity was initiated after the recipient was consistently unable to account for how EPA water grant funds were spent. The investigation determined that the grant recipient had charged labor hours based on estimated hours or percentages rather than actual hours worked. The EPA received from the grant recipient a repayment of $172,045, while the remaining funds were deobligated and the grant was closed.

CASE NUMBER: OI-SA-2017-OTH-0128
A public safety officer allegedly conducted an inappropriate security screening and harassed an EPA employee at the checkpoint of a federal building. Investigators interviewed all parties involved and reviewed the security video footage. The investigation did not support the allegation.

CASE NUMBER: OI-DE-2013-CAC-0064
Contractors at a Superfund remediation site allegedly did not replace air filters in the vehicles used to haul asbestos-contaminated material prior to releasing the vehicles from the site to be used for general purposes. The investigation found no violations of company policy and procedures or contractual requirements regarding proper replacement of air filters. The allegation was not supported.

CASE NUMBER: OI-HQ-2018-ADM-0020
An unknown individual contacted the offices of a state Senator and the Speaker of the U.S. House of Representatives via email and impersonated the acting Deputy Director of the EPA's Criminal Investigation Division. Investigative techniques identified the use of numerous proxy servers to mask the location and identity of the sender, who was located abroad. The investigation was closed.

CASE NUMBER: OI-CH-2017-AFD-0134
An employee at an EPA-funded wastewater treatment plant allegedly accepted bribes from various contractors. The investigation found that the allegation was supported. Due to the death of the individual, the case did not move forward toward prosecution.

CASE NUMBER: OI-PH-2018-CFD-0013
A Canadian valve supplier was alleged to have supplied valves not compliant with the American Iron and Steel provision under a State Revolving Fund project. The investigation determined that the supplier complied with the requirements of the provision; therefore, the allegation was not supported.

CASE NUMBER: OI-DA-2018-ADM-0035
An individual was investigated for possible threats against the EPA. The suspect had a long history of contacting the EPA OIG Hotline and becoming offensive when matters were not addressed to the individual's satisfaction. During a 3-week period, the individual made four visits to Federal Bureau of Investigation offices in San Antonio and Houston, Texas, and the EPA Region 6 office in Dallas, Texas. While visiting the EPA office, the individual alleged that a former employer, who is a government contractor, committed fraud on a Superfund site over 10 years ago. The OIG investigated the allegation; it was not supported. However, due to the escalation in behavior exhibited by the individual in an effort to be heard, a bar notice was issued for the individual in EPA Region 6.

CASE NUMBER: OI-SA-2018-PFD-0003
An air purifier company allegedly claimed as part of its advertising and marketing to be funded by and partnering with the EPA. The company also may have used these claims to lure venture capitalists to invest in the company. The investigation supported the allegation that the company was misusing the EPA seal and logo, as

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well as falsely claiming to be funded by and partnering with the EPA. The investigation did not support the allegation of defrauding investors. The EPA submitted a letter to the company stating that it was to stop using the EPA seal and logo and remove all claims regarding EPA partnership and funding from its website and advertising. The investigation also found that the company had not engaged the EPA regarding proper registration of potential pesticide products or devices, including nanotechnology. The matter was referred to the EPA Office of Pesticide Programs for further action.

CASE NUMBER: OI-DE-2013-CAC-0063
Contractors on a Superfund remediation site allegedly remediated residential and public properties with amphibole asbestos-contaminated soil. The investigation showed that applicable policy, procedures and contractual requirements were followed regarding the remediation of properties in and around the Superfund remediation site. The allegations were not supported.

CASE NUMBER: OI-AT-2015-CFR-0092
It was alleged that an engineering company falsified the hours worked in requests for payment claims made to a Leaking Underground Storage Tank trust fund awarded to a state by the EPA. The allegation was supported. The investigation identified instances where the company falsely reported the total hours spent at the Leaking Underground Storage Tank site and instances where the company was paid for geologist site visits that were either not conducted or were conducted by a field technician. The total loss due to fraudulent claims was identified as approximately $31,000, of which approximately $10,000 was associated with the federally funded Leaking Underground Storage Tank sites. The U.S. Department of Justice declined pursuit of federal remedies against any individual or entity identified in this investigation in lieu of state administrative actions associated with the recovery of lost funds from the engineering company.

CASE NUMBER: OI-SA-2017-CAC-0084
Four individuals associated with two companies allegedly conspired to defraud a Drinking Water State Revolving Fund to relieve themselves of the responsibility to repay a $200,000 loan, which was funded by the EPA. A company that owned a mobile home park obtained funds from a Drinking Water State Revolving Fund to build and operate an arsenic treatment facility. After the facility was constructed, the company failed to properly fund and maintain the facility. The company also ceased all communications with the State Revolving Fund controlling entity. The investigation supported the allegation. Communications and business records were found showing that individuals within the company that owned the mobile home park conspired with other individuals—with whom they were already familiar and conducting business in other ventures—to put the mobile home park on notice of being foreclosed and up for auction and to have the second company purchase it. The second company then sold the mobile home park to a third, nonconnected series of investors. The first company was then dissolved, and the individuals associated with that company stated that they were no longer responsible for repayment of the loan. The OIG referred the case to the U.S. Department of Justice and the Nevada Attorney General, but they declined to prosecute or take civil action.

CASE NUMBER: OI-DE-2013-CFR-0111
Contractors on a Superfund remediation site allegedly violated the Response Action Work Plans by failing to restore properties to a condition equal to that which existed before the remediation work. No incidents were noted where the remediation contractors did not either restore residential properties to their pre-remediation condition or provide homeowners with monetary compensation for any damage sustained due to remediation work. The allegation was not supported.

CASE NUMBER: OI-DE-2014-CFR-0075
An EPA contract associated with the renovation of an environmental building located on a tribal reservation may have been fraudulently awarded. Further, the contractor may have submitted fraudulent documentation to request reimbursement from an EPA grant for materials never received and work never completed. The contracting authority went through three different bidding processes to ensure that proper protocol was followed surrounding the award of the contract. The investigation determined that the tribe's finance department mistakenly interpreted three documents submitted by the contractor as representing actual costs incurred rather than cost estimates for the renovation project. The tribe issued a check to pay the invoices but caught the invoicing mistake prior to the check being mailed. The check was subsequently voided. The allegations were not supported.

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CASE NUMBER: OI-RTP-2018-CFD-0106
A former employee of an EPA contractor alleged contract fraud by that employer. The complainant believed that the contractor—the recent recipient of an EPA contract—intentionally did not request or obtain information needed to ensure an efficient transition from the previous contractor, resulting in overcharges to the EPA for work not completed during the transition period. This delay also allegedly resulted in security vulnerabilities for the EPA systems maintained under the contract. The investigation found that although the transition between the contractors did not occur smoothly and required the involvement of EPA contracting officers, no actual measurable loss to the EPA resulted. Upgrades to some EPA systems were temporarily delayed but ultimately completed. No security vulnerabilities were noted. The allegations were not supported.

CASE NUMBER: OI-CH-2018-THT-0080
An individual allegedly left a threatening voice message directed at EPA Office of Water employees. The allegation was not supported.

CASE NUMBER: OI-RTP-2018-THT-0055
An EPA office advised of a potential threat made by a former employee of an EPA contractor. The EPA contractor had fired the employee and barred the employee from the workplace, an EPA facility. Later that day, the former employee returned to the EPA facility but was denied access by security. The employee became agitated and made a comment that security believed was a veiled threat. The former contractor employee's EPA-issued desktop and laptop computers were seized by investigators as evidence. Interviews with coworkers and EPA employees with oversight responsibilities for the former employee indicated no previous threats or violent behavior by the individual. Review of the computers did not show any evidence of violent or threatening behavior. When interviewed, the former employee vigorously denied making a threat and apologized repeatedly for the misunderstanding. Since no threat was identified, the investigation was closed.

CASE NUMBER: OI-DE-2017-CAC-0118
An individual allegedly verbally threatened EPA personnel and contractors who were working to remove asbestos from an EPA cleanup site. Interviews of the parties involved disclosed that the individual was extremely intoxicated and did not recall the incident. After all the interviews were conducted, the investigation was determined to be inconclusive.

CASE NUMBER: OI-HQ-2016-CAC-0049
A private citizen sent threatening messages to numerous government officials, including a former EPA Administrator. The individual was located and contacted by investigators, admitted to sending the threatening messages, and agreed to cease the activity. The U.S. attorney's office declined the case for prosecution.

CASE NUMBER: OI-HQ-2017-CAC-0060
An unknown individual or group sent potentially dangerous mailings to family members of numerous presidential Cabinet nominees. The mailings each consisted of a plastic package of a white powdery substance and a card with the President's name written on it. The substance was tested and determined not to be harmful. This case was opened in anticipation of the EPA Administrator or his family receiving such a mailing, but they did not. The investigation was closed.

CASE NUMBER: OI-HQ-2018-THT-0004
An EPA employee received a threatening email from an unknown sender outside of the EPA. The email referenced personal information about the employee and his family; however, the information was publicly available. The email was found to be untraceable. There were no additional investigative leads to pursue, and the investigation was closed.

CASE NUMBER: OI-CH-2018-THT-0068
An individual allegedly sent a potentially threatening letter to the President referencing the use of a weapon. The individual cited construction being completed in his neighborhood and blamed the EPA for the inconvenience. The investigation determined that the letter was not intended as a threat and the individual did not pose a threat to EPA employees.

CASE NUMBER: OI-SE-2017-CAC-0058
An individual allegedly acted in a potentially threatening manner toward EPA contractors at an EPA Superfund site. The investigation determined that although the individual's behavior toward the contractors was disturbing,

the individual did not commit a crime. The individual was asked by the EPA to enter into a relocation agreement. The individual signed the relocation agreement, which stipulated that the individual would reside in a temporary location until work on and near the individual's property was completed.

CASE NUMER: OI-HQ-2018-CCR-0065
An individual gained unauthorized access to EPA office space in the Ronald Reagan Building and International Trade Center in Washington, D.C. The individual was interviewed by OIG and Federal Protective Service investigators. The individual admitted to gaining unauthorized access to the EPA office space while attending a conference in the building. As a result of the unauthorized access, the individual was issued an "Order Not to Enter," and the EPA issued a bar notice for the individual. In addition, the EPA conducted remediation and repairs to security vulnerabilities that were identified by this incident.

CASE NUMBER: OI-HQ-2018-THT-0029
The OIG was notified that there was a video posted on a pro-Islamic State website that threatened the murder of, and called upon viewers to murder, U.S. government employees. The video displayed a list of government employees, some of whom worked for the EPA. The OIG notified the named EPA employees that they were on this list. The security offices for the EPA regions where those EPA employees worked were also notified.

CASE NUMBER: OI-SA-2018-THT-0089
An individual posted a potentially threatening message to the EPA Administrator's official Facebook page. It was determined that the message was not a credible threat.

CASE NUMBER: OI-SE-2017-CAC-0073
A postcard containing potentially threatening statements was sent to the EPA Administrator. It was determined that the message was not a credible threat.

CASE NUMBER: OI-HQ-2017-CAC-0069
An individual sent a potentially threatening email to the EPA Administrator. The OIG was unable to identify a sender. The investigation was closed.

CASE NUMBER: OI-HQ-2018-THT-0056
An individual made a potentially threatening post toward the EPA Administrator on Instagram. No threat was identified. The investigation was closed.

CASE NUMBER: OI-HQ-2018-THT-0026
An individual sent obscene and inappropriate emails to the EPA Administrator. Investigators interviewed the individual. The individual stated that the emails were sent out of frustration and there was no intention to harm the EPA Administrator. No threat was identified. The investigation was closed.

CASE NUMBER: OI-BO-2017-CAC-0093
An individual sent a potentially threatening email to the EPA Administrator. It was determined that the communication was not a direct threat. The investigation was closed.

CASE NUMBER: OI-HQ-2017-THT-0148
An individual made a potentially threatening post toward the EPA Administrator on Twitter. It was determined that the post was not a credible threat.

CASE NUMBER: OI-HQ-2018-THT-0042
An individual sent a potentially threatening email to the EPA Administrator. It was determined that the language within the email was not a credible threat.

CASE NUMBER: OI-HQ-2018-THT-0043
An individual sent a potentially threatening email to the EPA Administrator. It was determined that the language within the email was not a credible threat.

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Appendix 5—Peer Reviews Conducted

Audits

The U.S. Department of Defense OIG completed an external peer review of the EPA OIG audit organization covering the fiscal year ended September 30, 2017, and issued its report on June 18, 2018. The review was conducted in accordance with generally accepted government auditing standards and the Council of the Inspectors General on Integrity and Efficiency's *Guide for Conducting Peer Reviews of the Audit Organizations of Federal Offices of Inspector General*. The peer review report stated that the system of quality control for the EPA OIG audit organization in effect for the year ended September 30, 2017, was suitably designed and complied with to provide the EPA OIG with reasonable assurance of performing and reporting in conformity with applicable professional standards in all material respects. The EPA OIG received an external peer review rating of *pass*.

The EPA OIG completed an external peer review of the audit organization of the U.S. Department of Homeland Security OIG and issued its report on August 27, 2018. The review was conducted in accordance with *Governmental Auditing Standards* and the Council of the Inspectors General on Integrity and Efficiency's *Guide for Conducting Peer Reviews of the Audit Organizations of Federal Offices of Inspector General*. We examined the audit function for the fiscal year ended September 30, 2017. We found that the Department of Homeland Security OIG had quality control policies and procedures that were intended to provide reasonable assurance of compliance with generally accepted government auditing standards. However, we believe that the Department of Homeland Security OIG should take additional steps to strengthen its system of quality control to ensure that all applicable standards are met and adequately documented. The Department of Homeland Security OIG received an external peer review rating of *pass with deficiencies*.

Investigations

The U.S. General Services Administration OIG completed the most recently mandated Council of the Inspectors General on Integrity and Efficiency quality assurance review of the EPA OIG Office of Investigations and issued its report on June 11, 2018. The U.S. General Services Administration OIG identified no deficiencies and found internal safeguards and management procedures compliant with quality standards.

On February 24, 2017, the EPA OIG completed its report on a quality assessment review of the U.S. Department of the Interior OIG's Office of Investigations in effect for the 1-year period ending April 30, 2016. We found that the Department of the Interior OIG's system of internal safeguards and management procedures for the investigative function for the period reviewed were in compliance with the applicable quality standards.

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Appendix 6—OIG Mailing Addresses and Telephone Numbers

Headquarters

U.S. Environmental Protection Agency
Office of Inspector General
1200 Pennsylvania Ave., NW (2410T)
Washington, DC 20460
(202) 566-0847

Offices

Atlanta
U.S. Environmental Protection Agency
Office of Inspector General
61 Forsyth Street, SW
Atlanta, GA 30303
Audit: (404) 562-9830
Investigations: (404) 562-9857

Boston
U.S. Environmental Protection Agency
Office of Inspector General
5 Post Office Square, Suite 100 (OIG15-1)
Boston, MA 02109-3912
Audit: (617) 918-1475
Investigations: (617) 918-1466

Chicago
U.S. Environmental Protection Agency
Office of Inspector General
77 West Jackson Boulevard
13th Floor (IA-13J)
Chicago, IL 60604
Audit: (312) 353-2486
Investigations: (312) 886-7167

Cincinnati
U.S. Environmental Protection Agency
Office of Inspector General
26 West Martin Luther King Drive
Cincinnati, OH 45268-7001
Audit: (513) 487-2363
Investigations: (312) 353-2507

Dallas
U.S. Environmental Protection Agency
Office of Inspector General (6OIG)
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733
Audit: (214) 665-6621
Investigations: (214) 665-2249

Denver
U.S. Environmental Protection Agency
Office of Inspector General
1595 Wynkoop Street, 4th Floor
Denver, CO 80202
Audit: (303) 312-6969
Investigations: (303) 312-6868

Kansas City
U.S. Environmental Protection Agency
Office of Inspector General
11201 Renner Boulevard
Lenexa, KS 66219
Audit: (913) 551-7878
Investigations: (312) 886-7167

New York
U.S. Environmental Protection Agency
Office of Inspector General
290 Broadway, Suite 1520
New York, NY 10007
Audit: (212) 637-3049
Investigations: (212) 637-3033

Philadelphia
U.S. Environmental Protection Agency
Office of Inspector General
1650 Arch Street, 3rd Floor
Philadelphia, PA 19103-2029
Audit: (215) 814-5800
Investigations: (212) 637-3033

Research Triangle Park
U.S. Environmental Protection Agency
Office of Inspector General
Mail Drop N283-01
Research Triangle Park, NC 27711
Audit: (919) 541-1030
Investigations: (919) 541-0517

San Francisco
U.S. Environmental Protection Agency
Office of Inspector General
75 Hawthorne Street (IGA-1-2)
8th Floor
San Francisco, CA 94105
Audit: (415) 947-4527
Investigations: (415) 947-4507

Seattle
U.S. Environmental Protection Agency
Office of Inspector General
Mail Code OIG-173
1200 Sixth Avenue, Suite 155
M/S OIG-173
Seattle, WA 98101-3140
Audit: (206) 553-6906
Investigations: (206) 553-1273

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Message

From: Green Guy Media [talkwithgreenguy@gmail.com]
Sent: 1/9/2019 3:07:02 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: ♻ Green Guy Media Newsletter College Sustainability Summit Series, Duke University

♻ Green Guy Media Newsletter College Sustainability Summit Series, Duke University

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Volume 99 - January 9, 2019

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Talk with Green Guy Show! Sunday, January 13th,9-10AM EST.

TALK RADIO 640 WGST

Duke University joins the College Sustainability Summit Series.

Curt Richardson, Director, Duke University Wetland Center talks about their 10,000 Acre Carbon Farm and why " Carbon Farming" is a new approach to fighting global warming.

Green Guy broadcasts live every Sunday, **9-10AM, EST on** WGST AM 640

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- iHeartRadio

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Coming Events

Green Guy Media EcoEvent of the Week:
January 9th, Hot Cities 2050
bit.ly/2R3tBvT

January 12th, City of Atlanta
Freeking Freezing 5K
atlantaga.gov/newsroom/city-calendar

January 15th, Atlanta Regional Commission

Stay Connected!

Civic Dinner
bit.ly/2CO9XLP

January 23rd, Metro Atlanta Chamber
Greenlight on Sustainability
bit.ly/2Fij89H

January 25th, Southface
BIT Building Community Call
bit.ly/2CZtUiQ

Take the Pledge to save water at home
mydropcounts.org/pledge-to-conserve/take-the-pledge

Take the Pledge to save water at work
mydropcounts.org/pledge-to-conserve/pledge-at-work

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Message

From: API SmartBrief [api@smartbrief.com]
Sent: 1/17/2019 6:04:01 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Special Report on API's State of American Energy event

API SmartBrief

Created for **jackson.ryan@epa.gov** | Web Version

Below is a Special Report from the American Petroleum Institute recapping highlights from last week's State of American Energy event in Washington, D.C.

If you haven't already subscribed to API SmartBrief, you can do so by clicking the sign-up button below. More than 33,000 of your peers read this daily resource to stay on top of the news and trends affecting the oil and natural gas industry.

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January 17, 2019

EXPERT INSIGHT FROM API

The State of American Energy 2019

As the American Petroleum Institute's Mark Green writes, the truest measure of US energy is America itself: The country's economic strength and security in the world, the individual prosperity of its citizens and our ability to meet challenges. All this is powered and supported by energy, led by natural gas and oil.

No less important: The limitless freedom of possibilities that Americans can dream of achieving because of abundant, secure energy. By these definitions, US energy is strong -- perhaps never stronger. These themes were highlighted at the State of American Energy 2019 event in Washington, D.C., where API's annual report, "America's Generation Energy," was released. Read Mark Green's post.

TRADE AND TARIFFS

The American oil and gas industry has been churning out record amounts of liquefied natural gas, and 15% of US LNG exports in 2017, valued at $447 million, went to China. A trade dispute broke out between President Donald Trump and China in 2018, and for much of last year, the rapidly growing Asian nation imported only 10% of US natural gas. Now, a 10% tariff on LNG imports originating from America has left China-bound exports grinding to a halt.

"It's a void other countries are happy to fill," said API President and CEO Mike Sommers. "Our position at API is pretty straightforward: Fight back against anti-American trade practices. Just do it in ways that don't undermine America's economic leadership."

Also massively affecting the industry are Trump-imposed tariffs of 25% on steel imports, which are crucially needed to relieve domestic pipeline bottlenecks.

WORKFORCE

(Sean Gallup/Getty Images)

API President and CEO Mike Sommers anticipates the creation of as many as 2 million oil and gas industry jobs by 2030. Women account for about 15% of the sector's current workforce, and companies such as Pink Petro, which recruits women into the oil and gas industry, are looking to change that. By the end of the next decade, 35% of the 811,000 total new jobs anticipated in the sector are projected to go to black and Latino workers.

With record-low unemployment and stiff competition from other technological sectors for high-quality talent, it has become increasingly difficult for companies to attract young, skilled workers. It is imperative that industry executives craft programs and incentives to bring their desired labor pool to the industry.

SUSTAINABILITY AND POLICY

A thriving economy demands energy, and climbing energy needs have led to carbon emissions rising 3.4% in the US in 2018, despite what the American Petroleum Institute has found to be a 70% drop in emissions between 1970 and 2016. A lack of takeaway infrastructure and leaks were the primary causes of growing methane emissions, said API President and CEO Mike Sommers, as gas field operators flared product in excess of their storage capacity.

"The risks of climate change are real," Sommers said before the State of American Energy 2019 event. "Industrial activity around the globe impacts the climate." He went on to tout the emergence of natural gas, which has been the primary source in the growing domestic power sector, and its accompanying lower emissions as part of the solution.

MISSED THE EVENT? RELIVE IT HERE

UPCOMING EVENTS

API Q1 & API 6D Workshop

This two (2) day workshop will provide an overview of the requirements, timeline and the potential costs associated with obtaining an API Q1 certification and API 6D monogram license. This workshop is suitable for management and others responsible for guiding their company through the API Q1 certification and API 6D monogram license process. Presented by: Aston Technical Consulting Services, LLC, Feb. 25-26. To learn more about this course and to register, visit the API-U Calendar.

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Message

From: Lyons, Troy [lyons.troy@epa.gov]
Sent: 1/11/2019 2:03:22 PM
To: Mary Frances Repko [mary_frances_repko@epw.senate.gov]
CC: Humphreys, Hayly [humphreys.hayly@epa.gov]; Eby, Natasha [eby.natasha@epa.gov]; Frye, Tony (Robert) [frye.robert@epa.gov]; Palich, Christian [palich.christian@epa.gov]
Subject: Meeting w Acting Administrator Wheeler

Mary Frances,

Great to see you last week. I hope you are Ex. 6 I am sure the current weather is not helpful.

Following up on our email from earlier this week, I am circling back to see if Senator Carper would like to meet w Acting Administrator Wheeler? We want to make sure we are honor any desire the Senator has to meet with Andrew.

Have a good weekend!

Many thanks,
Troy

Sent from my iPhone

Message

From: The Well News [press@thewellnews.com]
Sent: 1/5/2019 11:09:32 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: SPECIAL EDITION: Welcome to the 116th Congress

SPECIAL EDITION: Welcome to the 116th Congress

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Straight from The Well

Saturday, January 5, 2019

SPECIAL EDITION: **Welcome to the 116th Congress**

FIRST DAY IN CONGRESS

The Well News Interviews Rep. Chrissy Houlahan (PA-06)

At the beginning of each new Congress, the new members are sworn into office, the Speaker of the House is chosen, the House Rules are adopted and there are numerous other first day agenda items to complete. Over the course of the next week, we will be releasing videos highlighting a few new members who were willing to discuss their first day and plans for the new year with us. Representative Chrissy Houlahan is a rising star. A third generation military veteran and Captain in the USAFR, she is poised to make her mark in the 116th Congress.

Watch Now

BLUE DOGS WORK TO RESTORE FISCAL RESPONSIBILITY TO GOVERNMENT

Pay-As-You-Go Rules

This week, Democrats took back the majority in the U.S. House of Representatives following 2018's historic midterm elections. One of the first orders of business? Establish rules for the 116th Congress. H.Res.6, "A Resolution Providing for the House Rules of the 116th Congress," included a measure giving Members of Congress additional time to read bills, created a select committee to modernize Congress and restored Pay-As-You-Go (PAYGO) rules.

PAYGO, which was last in place in 2010, requires that both mandatory spending and tax cuts must be offset to prevent increases in the national debt. House Republicans did away with the rule when their party took control of the House in 2011.

Read More

SENATORS MARK WARNER AND MARCO RUBIO INTRODUCE BIPARTISAN BILL

To Combat Chinese Tech Threats to National Security

On Friday, bipartisan legislation was introduced by Vice Chairman of the Senate Select Committee on Intelligence Sen. Mark R. Warner (D-VA) and Committee member Sen. Marco Rubio (R-FL) to combat tech-specific threats to national security posed by foreign actors like China, while ensuring U.S. technological supremacy by improving interagency coordination across the U.S. government.

Specifically, the bill creates an Office of Critical Technologies & Security at the White House responsible for coordinating across agencies and developing a long-term strategy to protect against state-sponsored technology theft and risks to critical supply chains.

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HUNDREDS OF TRUMP POLITICAL APPOINTEES TO RECEIVE $10,000 PAY BOOST

Amid Government Shutdown

Hundreds of Trump's political appointees, including Vice President Mike Pence, will reportedly receive a $10,000 pay raise while hundreds of thousands of federal employees continue to be denied pay due to the prolonged government shutdown. Pay raises are scheduled to go into effect beginning today according to documents issued by the Office of Personnel Management.

House Majority Leader Steny Hoyer was incensed by the move, issuing the following statement: "It is outrageous that Vice President Pence and hundreds of President Trump's political appointees will each receive a $10,000 raise while denying paychecks to 800,000 federal employees as they keep the government shut down…I call on Leader McConnell to allow the Senate to vote on the measures House Democrats passed last night to end the Trump shutdown, reopen government, and provide retroactive pay to those who have been forced to go without a paycheck as a result of the President's temper tantrum."

IN THE NEWS

- House Establishes Select Committee on Modernizing Congress in First Bipartisan Vote of New Session
  By Lindsey McPherson
- A Handy Guide to the 2020 Presidential Campaign
  By Adam Wollner
- Here's When the Government Shutdown Will Hurt Even More
  By Kate Irby
- Trump, Democrats Meet Again on Shutdown But Remain Far Apart on His Border Wall Demand
  By Eli Stokols and Jennifer Haberkorn
- No Deal on Shutdown But Talks to Continue Through the Weekend
  By John T. Bennett

WEEKEND LONGREAD

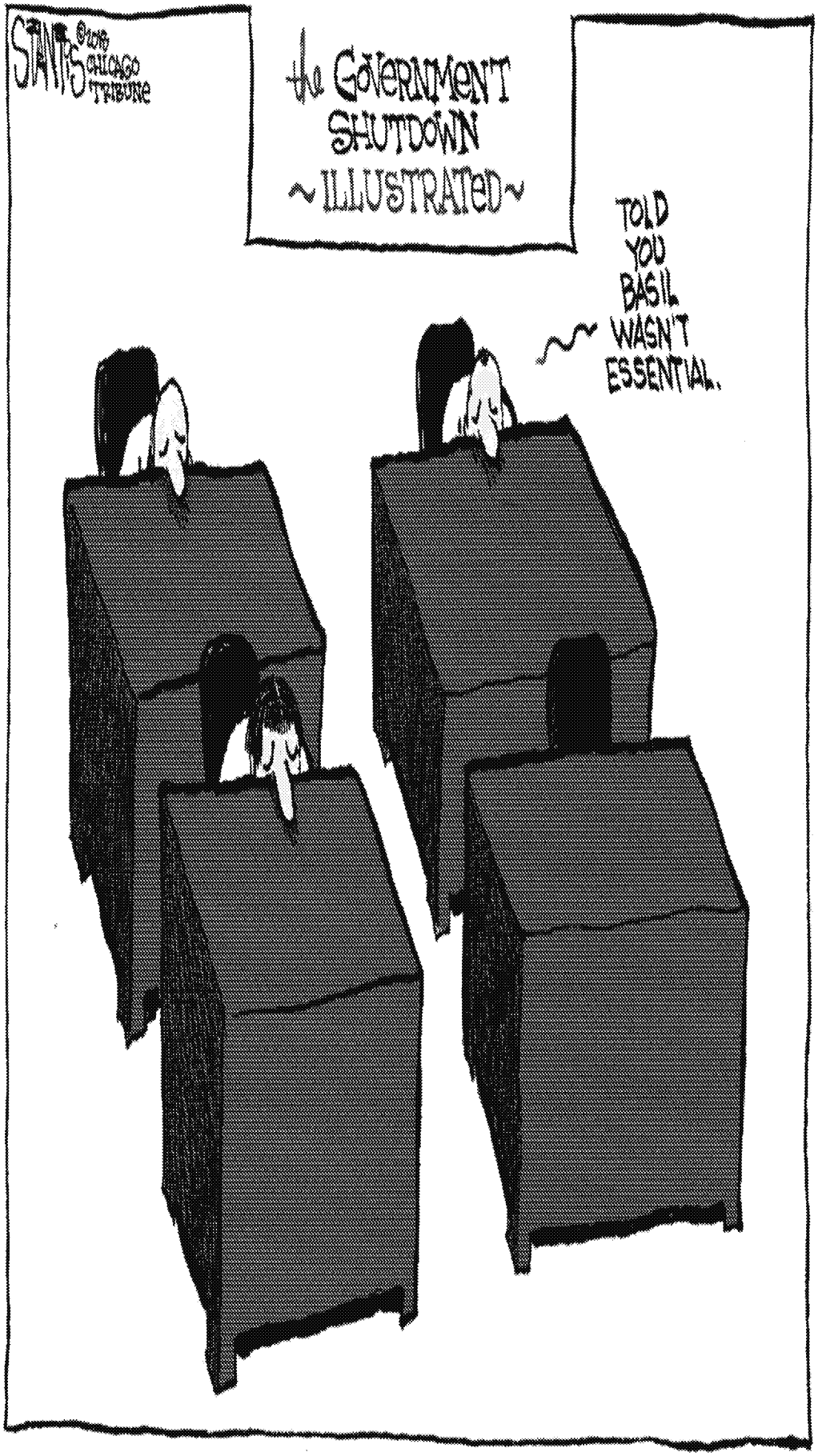
Did Pentagon Ban on Guantanamo Art Create a Market for It?

Hollywood actors Ben and Casey Affleck got one each. Pulitzer Prize-winning historian Taylor Branch has four hanging in his home. The actress who played the "Gossip Girl" grandma wept, then bought one. Some students and teachers have acquired the artwork as well, including a former CIA analyst.

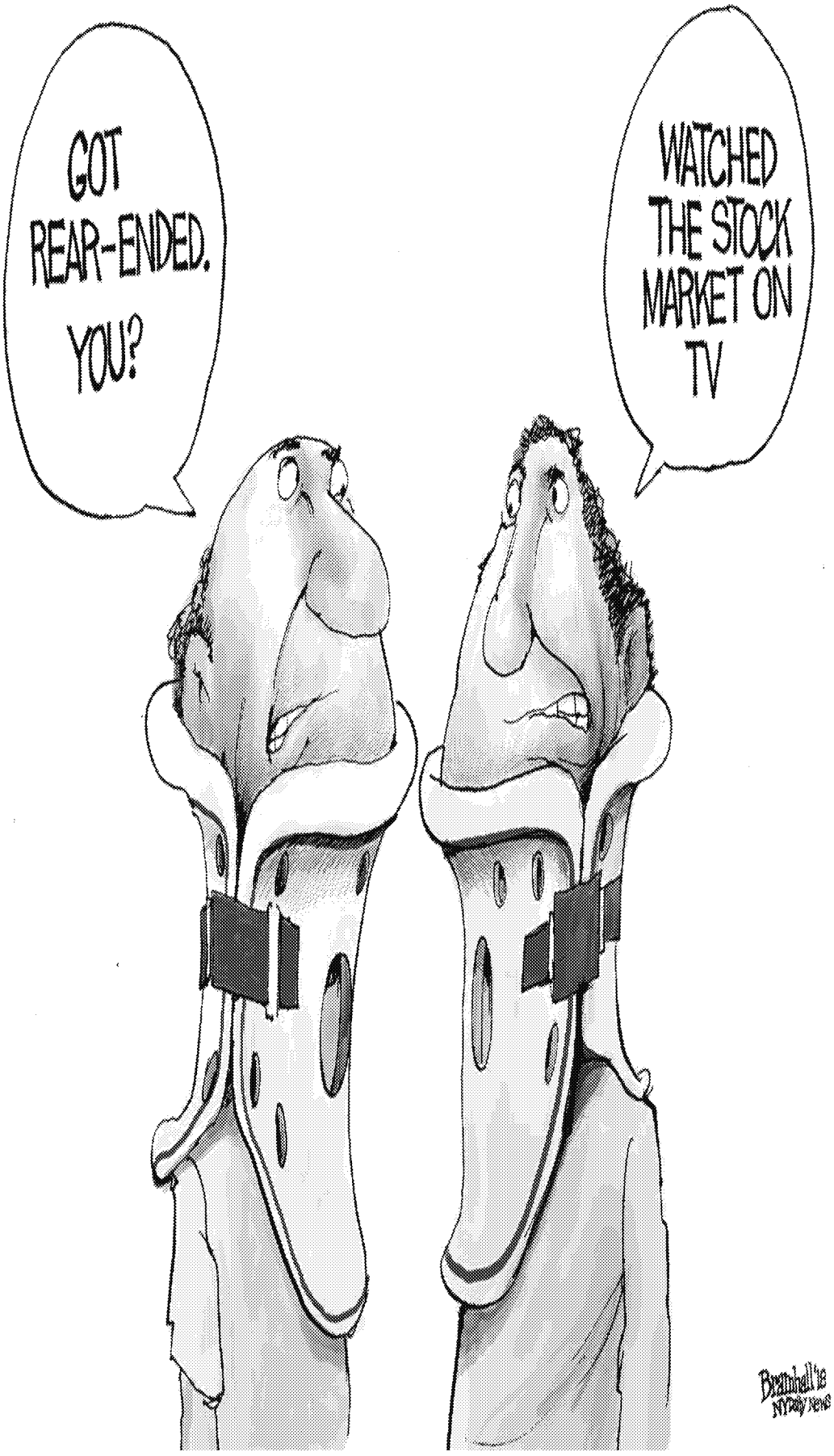
Call it blowback: A year after the Defense Department banned releases of art made by the 40 prisoners still at Guantanamo, detainee artwork that got out before the ban is emerging as a collectible with a bit of cachet.

Read More

CARTOONS OF THE WEEK


STAMPS ©2013 CHICAGO TRIBUNE
the GOVERNMENT SHUTDOWN ~ILLUSTRATED~
TOLD YOU BASIL WASN'T ESSENTIAL.

TRUST ME, DO NOT ORDER A PIZZA...
SHUT-DOWN GOES ON


GOT REAR-ENDED. YOU?
WATCHED THE STOCK MARKET ON TV
Bramhall'ie
NYDaily News

#!*@
?#$!
%*!!#
THE SWEARING IN OF NANCY PELOSI
Breathed '19
NYDailyNews

The Well News, 777 6th Street, NW, Washington, DC, 20001
Unsubscribe

Message

From: Lyons, Troy [lyons.troy@epa.gov]
Sent: 1/15/2019 6:01:49 PM
To: Richard_Russell@epw.senate.gov; Matt Leggett [Matt_Leggett@epw.senate.gov]
CC: Jackson, Ryan [jackson.ryan@epa.gov]; Palich, Christian [palich.christian@epa.gov]
Subject: AW testimony

Making edits but it's clocking in around sevens minutes. Will the Chairman allow for the extra minute or two.

Sent from my iPhone

Message

From: The Embassy of Canada [noreply@worldsbest.events]
Sent: 4/5/2019 2:38:55 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: You are invited to the Canadian Electricity Association Reception and Dinner

The Embassy of Canada
in partnership with the
Canadian Electricity Association
cordially invites you to a reception and dinner to discuss

Canada-U.S. Collaboration in the Electricity Sector

Keynote Speaker
Rep. Paul Tonko (D-NY), Chairman of the House Energy and Commerce Subcommittee on Environment and Climate Change

April 11, 2019
Cocktail reception from 5:30 - 6:30 PM
Dinner from from 6:30 to 8:00 PM

Embassy of Canada
501 Pennsylvania Ave., NW | Washington, D.C.

RSVP & government-issued photo ID are required for entry.

RSVP

Message

From: Defense Tech Expos [lrinaldo@cox.net]
Sent: 1/3/2019 6:08:10 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Invitation Federal Small Business Procurement & Tech Plus Expo DC

Invitation Federal Small Business Procurement & Tech Plus Expo DC

Defense Tech Expos presents:

Special Invitation

Federal Government Small Business Procurement and Technology Plus Expo

Thursday, February 21st, 2019

Free to attend for Government!

The hours are from 9 a.m. to 2 p.m. Bring coworkers!

RSVP please

Holiday Inn Capitol

by the Smithsonian Museums, U.S. Capitol and L'Enfant Plaza

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Congressional Ballroom

550 C Street, SW

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More than 25 exhibitors will demonstrate the latest in energy solutions, cloud technologies, cyber security, Big Data, solar power, disaster recovery, communication technologies, systems integration, wireless, 5G, manufacturers, Hyper Convergence, blockchain, AI. cell phones, greening, network solutions, construction, defense and Homeland Security equipment, engineering, architecture, construction, information technology products, COOP, training, Storage solutions, office automation products, data management, audio and visual equipment, hardware and software, healthcare, hospital applications, medical, software. furniture, office supplies, hospitality and So Much More.

Who will be there?

Most of the Vendors are Small Businesses: 8 (a)'s, Small and Disadvantaged Businesses,

Small and Woman Owned Businesses, Service Disabled Veteran Owned Businesses, Veteran Owned,

Native American Owned, and HUBZones). Some large manufacturers too.

Who should attend?

All Government personnel Everyone, especially: DoD. Civilians, Warfighters, OSDBUs, SADBUs, Small Business Program staff, Program Managers, Project Managers, Engineers, Techs, Scientists, Security,

Contracting Officers, CTOs, CIOs, CXOs, CISSPs, Buyers, purchase card holders, Economists, clerks,

Procurement, IT, Hospital, Medical, Labs, Public Affairs, Public works, SBLOs, PTAC/PTAP, everyone, etc. .

FREE of CHARGE for Government

. Demos!

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Education and Information!

What: Federal Small Business Procurement and Technology Plus Expo

Where: Holiday Inn Capitol, Congressional Ballroom next to FEMA

550 C Street, SW, Washington, DC 20024

near L'Enfant Metro and Federal Center Metro station

www.wmata.com

When: 2.21.19

Mark your calendar

Time: 9:00 AM - 2:00 PM

Larry Rinaldo

Defense Tech Expos

More information is available from 703-344-8771

Questions/Please RSVP to: LRinaldo@cox.ne t

Bring associates!

Free table for Government OSDBUs and Small Business Program Managers!

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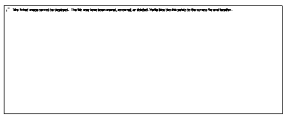


This Tribal image cannot be displayed. The file may have been moved, renamed, or deleted. Verify that the link points to the correct file and location.

Message

From: ClearPath Action [info@clearpathaction.org]
Sent: 4/5/2019 2:33:49 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: The Rundown - Why DOE's Budget Request is Exciting for Energy Storage

|MC:SUBJECT|

The Rundown

By: CLEARPATH ACTION

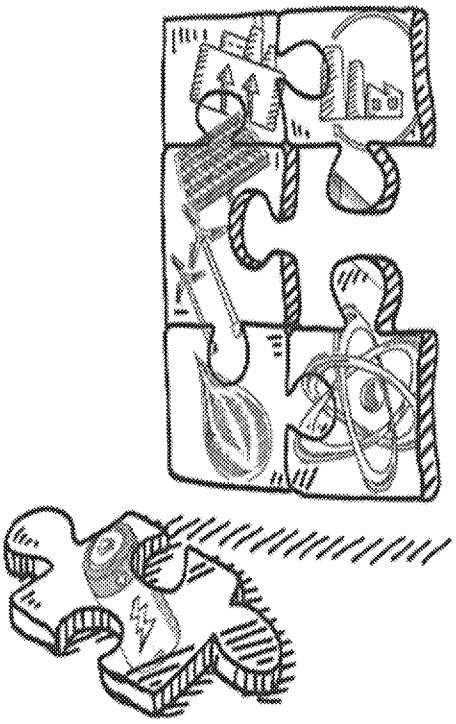
Welcome to Friday's Rundown, for the week ending April 5.

I'm your driver, **Darren Goode**.

Was this email forwarded to you? **Sign up here**.

As always, thanks for reading.

Piecing Together the Clean Energy Puzzle



WHY DOE'S BUDGET REQUEST HAS EXCITING NEWS FOR STORAGE

There was a surprising and welcome inclusion in the **Department of Energy's FY20 budget proposal** that could make serious headway toward efforts to develop long-duration grid-scale energy storage options.

In a new blog, ClearPath's lead storage analyst **Faith Smith** dove into the budget proposal and unlocked a couple of highlights aimed at helping consolidate and better target energy storage R&D efforts across multiple DOE offices, many of which also currently primarily focus on transportation rather than grid-scale storage.

That includes a new Advanced Energy Storage Initiative across multiple DOE offices, as well as a new "launchpad" hosted at Pacific Northwest National Lab focused on testing

and evaluating battery and potentially other grid-scale storage materials and systems.

As Faith (with the help of ClearPath's graphics guru **Mitch Kersey**) explains, this is all part of a vital missing piece of a larger clean energy puzzle. With wind and solar an ever-increasing percentage of our power generation, we need a broad portfolio of technologies at low cost to speed the transition to cleaner energy. That starts with smart investments in next-generation grid-scale energy storage and batteries.

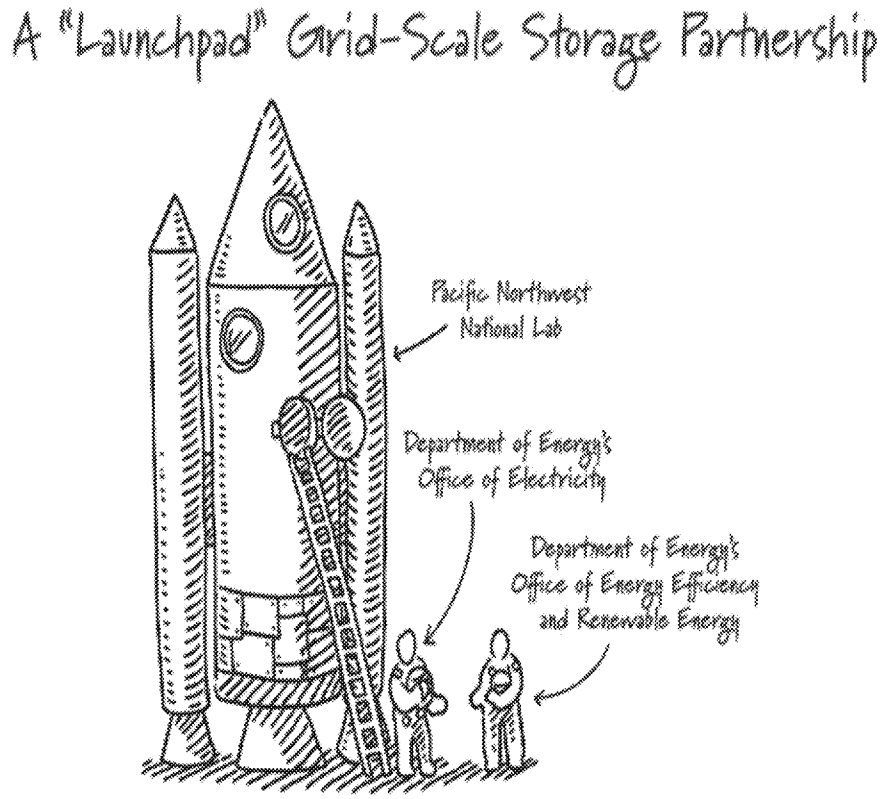
WHY DOE'S FY20 BUDGET REQUEST HAS EXCITING NEWS FOR STORAGE

WHAT'S JAY TWEETING?

Jay Faison
@JayFaison1

Watching first climate select committee hearing and @RepGarretGraves really striking a chord about how "we need to be better stewards of our environment and our Earth." youtu.be/86tkFbWgDEU

11:29 AM - 4 Apr 2019



STORAGE "MOONSHOT" MODEL FOR OTHER CLEAN ENERGY TOOLS

At a **DOE budget hearing Wednesday**, House Energy and Water Appropriations ranking member Mike Simpson (R-Idaho) asked Under Secretary for Energy Mark Menezes whether similar "moonshot" efforts outlined for storage in the budget should also happen for advanced nuclear and carbon capture.

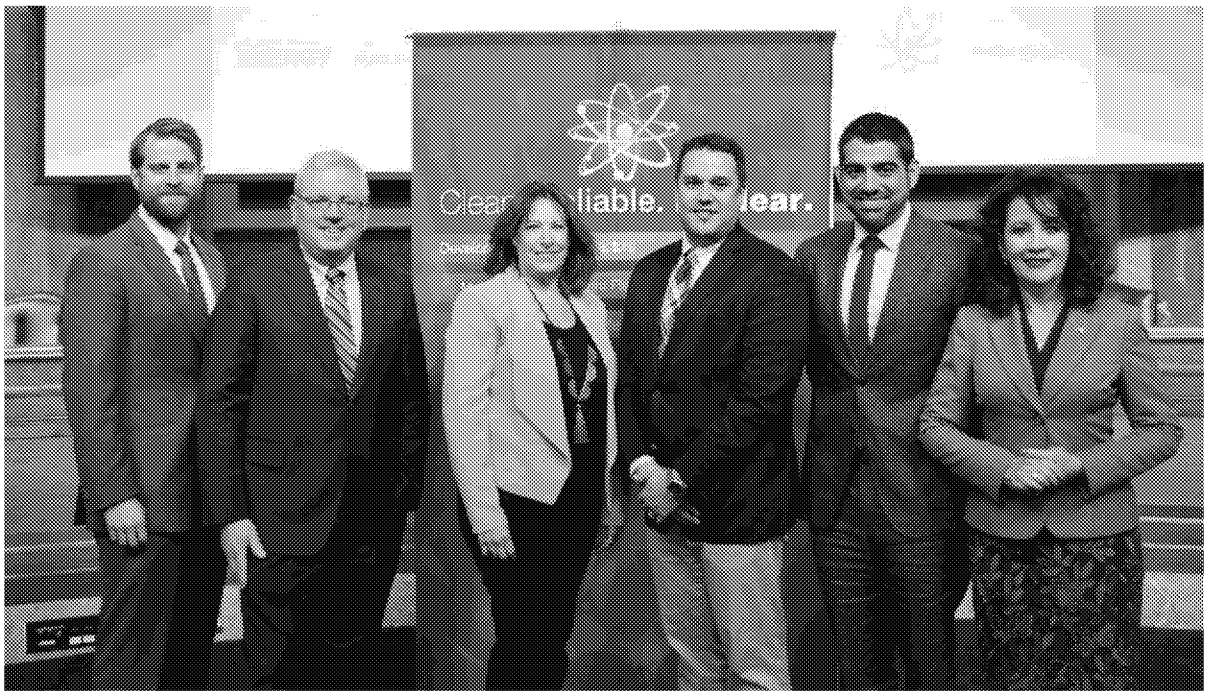
"That's an excellent suggestion and recognition of what you can accomplish when you do things through crosscutting and a collaborative effort," Menezes responded. On advanced nuclear specifically, "we are already seeing quite a bit of interest in the private sector," he said. "But I think to put a challenge out there shows that the government is interested in supporting the technology breakthroughs that it will take for us to maintain our global leadership in the nuclear area."

After Rep. Dan Newhouse (R-Wash.) lauded the PNNL launchpad idea, Menezes noted that the "next big breakthrough" for energy will be storage technologies. "We've identified that as our big commitment, that's where I think we can bring true changes in the way that we provide electricity across this country," he said.

RELATED NEWS

DOE **announced up to $20 million** in federal funding for cooperative agreements that will help accelerate projects as part of the Office of Fossil Energy's Carbon Storage Program.

Idaho Power **claims one of the lowest-priced solar deals**, at 2.2 cents/kWh.



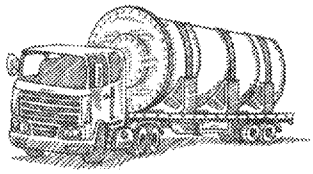
CHARTING ADVANCED NUCLEAR PROGRESS IN CONGRESS

A **bipartisan strategy reintroduced last week** by Senate Energy and Natural Resources Chairman Lisa Murkowski (R-Alaska) and Sen. Cory Booker (D-N.J.) was highlighted as the latest move to boost next-generation nuclear technologies by Congress.

The Nuclear Energy Leadership Act was an attempt "to take the framework that had been set in the 115th congress and build upon it," Ben Reinke, top Senate energy panel nuclear expert, said at this week's latest Atomic Wings briefing co-hosted by DOE and ClearPath.

Successful multi-year efforts to have two other advanced nuclear measures – **Nuclear Energy Innovation Capabilities Act (NEICA)** and **Nuclear Energy Innovation and Modernization Act (NEIMA)** – approved by the last Congress and signed into law led to an updated version of NELA. "While these things were going, we were of course learning

new things," Reinke said.



45J Nuclear Production Tax Credit reform, benefiting roughly 2 gigawatts of nuclear power being constructed at Plant Vogtle and next 6 gigawatts of U.S. advanced nuclear power. SIGNED INTO LAW 2/9/18

FY18 Appropriations gives Office of Nuclear Energy $1.2 Billion, 20% more than FY17, and requests a plan for multiple advanced reactor demonstrations. SIGNED INTO LAW 3/23/18

Department of Defense Microreactor Pilot Program directs relevant federal agencies to evaluate feasibility of deploying microreactors at U.S. military facilities.. SIGNED INTO LAW 8/13/18

Nuclear Energy Leadership Act, a bipartisan comprehensive advanced nuclear energy bill focused on accelerating the deployment of new advanced nuclear reactors within the next decade. INTRODUCED IN SENATE 9/6/18

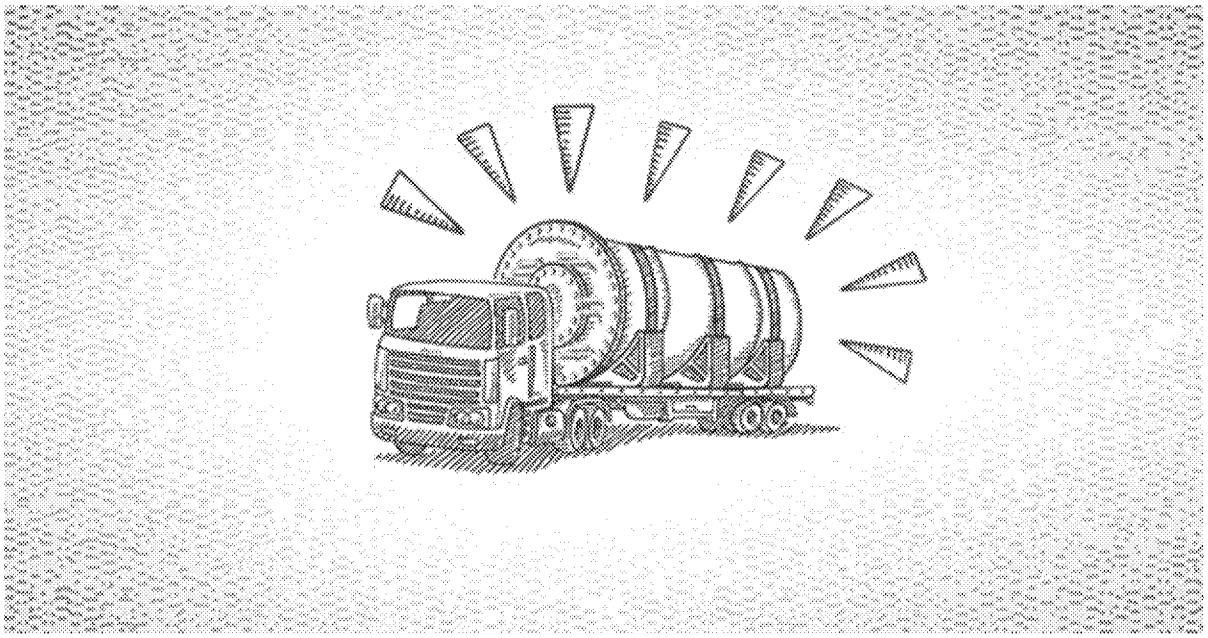
FY19 Appropriations funds Office of Nuclear Energy $1.3 Billion, a 36% increase from FY17. Key research programs included substantial support for a fast spectrum reactor user facility (Versatile Test Reactor) at Idaho National Laboratory and initial work to provide advanced reactor fuels. SIGNED INTO LAW 9/21/18

Nuclear Energy Innovation Capabilities Act authorizes private-funded advanced reactor demonstrations at DOE national laboratories, improves DOE-NRC collaboration on advanced reactor licensing and prioritizes construction of a Versatile Test Reactor at Idaho National Laboratory. SIGNED INTO LAW 9/28/18

Nuclear Energy Innovation and Modernization Act streamlines NRC licensing process for advanced reactors, improves the NRC fee structure and increases NRC transparency. SIGNED INTO LAW 1/14/19

RELATED NEWS

DOE's Office of Nuclear Energy and U.S. Nuclear Industry Council next Wednesday host the inaugural **Up & Atom Morning Briefing**, featuring Idaho National Lab Director Mark Peters.



RICH'S TAKE: WHY NELA SHOULD BE CLOSELY TRACKED

In his **latest whiteboard video**, ClearPath Executive Director Rich Powell walks through the main details of NELA and why it is worth closely tracking.

That includes establishing specific goals to align federal, lab and private-sector efforts; developing a 10-year strategic plan that supports advanced nuclear R&D goals; providing initial domestic supplies of the fuel needed for many U.S. advanced reactor

designs; a reliable testing ground for advanced fuels and materials; and nuclear engineering scholarships to maintain a robust pipeline of nuclear engineering talent.

NEWS NUGGETS

DOE is **opening a new prize** to spur solutions and technologies addressing challenges faced by pumped hydropower storage developers. That includes large capital investments and long lead times required to get projects commissioned. The first stage of the prize closes May 24.

The staff of the Maine Public Utilities Commission **is recommending a permit** for a transmission line that would bring Canadian hydropower to Massachusetts.

The outgoing chief executive of the Tennessee Valley Authority said the power generator **expects to get more than 60 percent** of its energy from non-carbon-emitting sources by 2020, compared with more than 50 percent in 2018.

THE PATH AHEAD

THURSDAY Senate Energy and Natural Resources **hearing** to "Examine Opportunities for Energy Innovation and Other Potential Solutions to Help Address Global Climate Change."

THURSDAY CRES Forum hosts a panel on "Republican Solutions to Reduce Emissions," including ClearPath Managing Director-Policy Jeremy Harrell. **RSVP**

APRIL 30 ACCF hosts a conversation with FERC Chairman Neil Chatterjee. **RSVP**

MISS A WEEK?

RUNDOWN ARCHIVES

Follow us on Twitter: **@JayFaison1**, **@powellrich**, **@ClearPathAction**

View this Rundown **online**

CLEAN ENERGY. THE CONSERVATIVE WAY.

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This email was sent to jackson.ryan@epa.gov

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Clearpath, Inc.
611 Maryland Ave NE
Washington, DC 20002

Message

From: Russell, Richard (EPW) [Richard_Russell@epw.senate.gov]
Sent: 1/9/2019 6:33:14 PM
To: Lyons, Troy [lyons.troy@epa.gov]; Palich, Christian [palich.christian@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: RE: Wheeler nom

If you have time between meeting stop-by or give me a buzz. Got a couple updates. Otherwise will see you at 3:30 with the Chairman.

Richard M. Russell
Staff Director
Senate Committee on Environment and Public Works
202 224-6176

Message

From: Benjamin.Dunham@hklaw.com [Benjamin.Dunham@hklaw.com]
Sent: 1/8/2019 6:57:49 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Following up on Wheeler speaking invitation
Attachments: Wheeler Invitation Letter 10.5.18.pdf

Ryan,
I hope married life is treating you well. I wish Politico covered my wedding!

When I brought in the Household and Commercial Products Association in October, the CEO invited Wheeler to speak at HCPA's mid-year meeting at the Mayflower in May. We followed up with a written invitation, which is attached.

I know yall book Wheeler's schedule months in advance, so I just wanted to follow up and make sure this didn't fall through the cracks.

Let me know if there's anything I can do to help.

See you soon,

Ben Dunham | Holland & Knight
Sr Policy Advisor
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone 202.329.2708 | Fax 202.955.5564
benjamin.dunham@hklaw.com | www.hklaw.com

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HOUSEHOLD & COMMERCIAL PRODUCTS ASSOCIATION
Innovative Products For Home. Work. Life.

Stephen J. Caldeira, President and CEO

October 5, 2018

The Honorable Andrew Wheeler
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Administrator Wheeler:

On behalf of the Household & Commercial Products Association, its Board of Directors, and its members that are responsible for 200,000 direct jobs and $180 billion in annual sales in the United States, I sincerely thank you for meeting with me this week to discuss issues that are critically important to our industry. We once again congratulate you on your appointment as Acting Administrator and look forward to working with you and your staff in the future.

As we mentioned during the meeting, our members would benefit from your unique insights and vast experience gained leading such a pivotal government agency. With that in mind, you are cordially invited to address HCPA's mid-year meeting, IMPACT2019, May 1-3, 2019 at the Mayflower Hotel in Washington, DC.

We believe that your work as Administrator of the Environmental Protection Agency allows you to provide our members and conference attendees with a unique perspective on the state of environmental, sustainability, and chemical safety regulations that impact businesses across the country. HCPA members are formulators, marketers, and suppliers of household and commercial products used in homes and workplaces, and many work closely with the EPA to ensure that their products are safe. We expect approximately 400 executives specializing in scientific affairs, regulatory compliance, and product marketing to attend.

Because the agenda for the meeting is still in formation, we are currently very flexible with the timing of your presentation, should you choose to accept this invitation. If you or your staff require additional information about this event, or wish to coordinate your attendance, you may contact HCPA's Executive Vice President of Government Relations & Public Policy, Owen Caine, at 202-833-7310 or ocaine@thehcpa.org.

Our association and our industry truly appreciate your dedicated service and leadership at EPA and thank you for respectfully considering this request. We truly appreciate it.

Sincerely,

Stephen J. Caldeira

1667 K Street NW, Suite 300, Washington, DC 20006 | Office 202-833-7302 | Ex. 6 | Fax 202-223-2636 | www.theHCPA.org

Message

From: Bowman, Liz (Ernst) [Liz_Bowman@ernst.senate.gov]
Sent: 1/9/2019 6:29:14 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Lyons, Troy [lyons.troy@epa.gov]
Subject: FW: Trump formally nominates Wheeler to deregulate at EPA

Nice article; nice work!

From: POLITICO Pro <politicoemail@politicopro.com>
Sent: Wednesday, January 9, 2019 1:00 PM
To: Bowman, Liz (Ernst) <Liz_Bowman@ernst.senate.gov>
Subject: Trump formally nominates Wheeler to deregulate at EPA

By Alex Guillén

01/09/2019 12:58 PM EDT

President Donald Trump has formally nominated Andrew Wheeler to be EPA administrator, cementing the no-nonsense former attorney as his pick to carry out his deregulatory agenda, the White House announced today.

The nomination was expected after Trump announced his intention in November.

Democrats are likely to attack Wheeler for his aggressive efforts to undo Obama-era environmental regulations. Although EPA was already working on rolling back rules when he arrived last spring, since his ascension to acting administrator Wheeler has released proposals scaling back climate rules and mercury limits for coal-fired power plants, emissions standards for cars and trucks, and guidelines for which waterways are subject to federal regulations.

But his scandal-free tenure atop EPA will deprive Democrats of many of the same sort of ethics complaints they made against his predecessor, Scott Pruitt. Wheeler is all but guaranteed to have the votes to pass. All Senate Republicans voted to confirm him as deputy, as did Sen. Joe Manchin (D-W.Va.).

It is unclear how long it will take to confirm him. Wheeler is already running EPA in an acting capacity, and the Senate is dealing with an ongoing shutdown and the need to fill other high-profile positions atop the Departments of Defense, Justice and Interior.

WHAT'S NEXT: The Senate Environment and Public Works Committee will hold a hearing with Wheeler before advancing his nomination.

To view online:
https://subscriber.politicopro.com/energy/whiteboard/2019/01/trump-formally-nominates-wheeler-to-deregulate-at-epa-2460964

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Message

From: Lyons, Troy [lyons.troy@epa.gov]
Sent: 1/9/2019 6:28:16 PM
To: Leggett, Matt (EPW) [Matt_Leggett@epw.senate.gov]
CC: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: OGE

Fantastic! Thank you! When do you anticipate noticing the hearing?

Sent from my iPhone

> On Jan 9, 2019, at 1:03 PM, Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov> wrote:
>
> We just got it. I've forwarded OGE and the questionnaire to the minority.
>
> -----Original Message-----
> From: Lyons, Troy <lyons.troy@epa.gov>
> Sent: Wednesday, January 9, 2019 12:46 PM
> To: Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov>
> Cc: Jackson, Ryan <jackson.ryan@epa.gov>
> Subject: RE: OGE
>
> If you do not have what you need within the hour, please let us know
>
> -----Original Message-----
> From: Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov>
> Sent: Wednesday, January 9, 2019 12:42 PM
> To: Lyons, Troy <lyons.troy@epa.gov>
> Cc: Jackson, Ryan <jackson.ryan@epa.gov>
> Subject: Re: OGE
>
> Great. Thank you.
>
> Sent from my iPhone
>
>> On Jan 9, 2019, at 12:35 PM, Lyons, Troy <lyons.troy@epa.gov> wrote:
>>
>>
>> Justina has just certified AW's forms. OGE knows to expedite to you all.
>>
>>
>> Sent from my iPhone

Message

From: Cisco Customer Listening [cisco-feedback@external.cisco.com]
Sent: 1/16/2019 12:12:12 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [WARNING: DMARC validation failed] Please remember to provide your feedback

As a valued Cisco customer, we rely on your feedback to help us deliver solutions and services that meet your evolving business needs. Your continued success is important to us and the insights you provide will be reviewed and used to further enhance your Cisco experience.

Please help us to better serve you by completing this brief, 5 minute survey.

Annual Customer Loyalty Survey

Sincerely,
Cisco Customer Listening Team
customer-listening@cisco.com

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Message

From: Cisco Customer Listening [cisco-feedback@external.cisco.com]
Sent: 1/8/2019 12:48:34 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [WARNING: DMARC validation failed] Exclusive Invitation to provide feedback to Cisco

CISCO

We are passionate about ensuring your experience with Cisco is the best it can be. Candid feedback from customers like you is extremely valuable as we strive to meet your evolving business needs.

Please tell us how we are doing by completing this 5-minute survey by February 8, 2019.

Annual Customer Loyalty Survey

Your responses will help us further improve our solutions and services so you can continue to succeed in today's marketplace.

We look forward to hearing from you.

Sincerely,
Cisco Customer Listening Team
customer-listening@cisco.com

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Message

From: Matt Ogren [MOgren@insightwebpoll.com]
Sent: 1/16/2019 5:01:14 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Opportunity to share your insights

Hello Ryan Jackson,

I'd like to invite you to participate in a short, confidential opinion survey among Washington, D.C. professio
energy and environmental issues. As someone identified as being involved in discussions about public poli
environment and business issues, I believe your insights will contribute greatly to our understanding of thes

The survey is short – it should take 15 minutes or less to record your responses.

Please be assured that this survey is completely confidential, and that your name and affiliation will no
responses you provide in any public forum; we further recognize that you are sharing your *personal* opinion
organization.

In appreciation for your time, **the survey sponsor, a not-for-profit organization, will be making a $50 d
your choice if you qualify for and complete the survey.**

Furthermore, **we will send you an executive summary of the survey results** once the study is complete

To complete the survey online, please click on the link below.

Start now →

Alternatively, you can copy and paste the following URL into your internet browser:
http://vxonline.luceresearch.com/SE/?st=Wf%2flzTXOZuANa3pMMC%2beYZMwOlDWn1gDJh8RcP%

I understand that you have a very busy schedule. If you prefer to complete this survey by telephone, a repr
you to schedule a time that is convenient for you.

Because only a small number of individuals in the Washington, D.C. area have been asked to share their o
participation is very important. I hope you will set aside about 15 minutes to complete this online survey
our representative when he or she calls.

Should you have any questions or difficulties completing this survey, please feel free to contact me.

Thank you for your participation.

Matt Ogren
Study Director

To unsubscribe, please reply to this e-mail
5086 List Drive, Colorado Springs, CO 80919

Message

From: Ex. 6
Sent: 1/18/2019 9:31:11 PM
To: Wheeler, Andrew [wheeler.andrew@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Thank You Wynne Family

Director Wheeler,

Thank you for meeting your timeline in pushing forward Methylene Chloride regulations. This is all we asked for and history will show that (eventually) rational minds prevailed and a real accomplishment was achieved. I hope that you enjoy your weekend and that the full staff can get back to work quickly.

Respectfully,

Brian Wynne

Message

From: Bailey, Stefan [Stefan.Bailey@prime-policy.com]
Sent: 1/10/2019 5:02:14 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Traci Kraus [traci.kraus@cummins.com]
Subject: Cummins letter to Indiana delegation
Attachments: Cummins letter- Sen. Todd Young.pdf

Ryan – I hope you are well. Attached is a letter from Cummins Inc. president Rich Freeland to Senator Todd Young and the Indiana delegation encouraging a swift reopening of the federal government. EPA is mentioned in the letter and the Administrator is copied. As such, I wanted to get this over to your office.

Traci Kraus of Cummins is copied on this email. Please do not hesitate to reach out to either one of us with questions.

Thanks for your consideration.
Stefan

STEFAN L.B. BAILEY
Managing Director

1110 Vermont Avenue NW | Suite 1000 | Washington, DC 20005
202 530 4625 Ex. 6 | www.prime-policy.com

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January 9, 2019

The Honorable Todd Young
U.S. Senate
400 Russell Senate Office Building
Washington, DC 20510

Dear Senator Young:

On behalf of Cummins Inc.'s over 26,000 employees across the United States, I am writing to encourage Congress and the Administration to work together to enact legislation ending the partial shutdown of the federal government as soon as possible. As the largest independent producer of diesel and alternative fuel engines in the world and a global leader in technological innovation in the power sector, Cummins relies heavily on a fully functioning and operational federal government to conduct business and to safeguard economic opportunity for our employees.

Cummins Inc. designs, manufactures, sells and services diesel and alternative fuel engines from 2.8 to 95 liters, diesel and alternative-fueled electrical generator sets from 2.5 to 3,500 kW, as well as related components and technology. Cummins serves customers through our network of 500 company-owned and independent distributor facilities and approximately 7,500 dealer locations in more than 190 countries and territories. In Indiana alone, Cummins employs over 10,000 people across 10 different facilities.

As a result of our partnership with federal agencies Cummins is able to develop the world's most technologically advanced engines and power systems. Cummins depends upon federal government departments, like the Environmental Protection Agency, on issues related to statutory and regulatory compliance, enforcement, policy, and guidance, among others. Without the certainty of a fully funded federal government, Cummins ability to properly conduct its business affairs is hampered severely and could have significant economic consequences.

As such, I encourage Congress work swiftly to ensure full funding federal government operations. I appreciate your consideration and please feel free to reach out to me or Cathy Van Way in our Washington, D.C. office if you need more information.

Respectfully,

CC: Governor Eric Holcomb
Administrator Andrew Wheeler

Rich J Freeland
President and
Chief Operating Officer

Cummins Inc.
500 Jackson Street, MC 60913
Columbus, IN 47201 USA

Phone 1 812 377 5380
Fax 1 812 377 6658
cummins.com
rich.j.freeland@cummins.com

Message

From: Natasha John [njohn@nnwo.org]
Sent: 1/15/2019 4:49:14 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Fwd: EPA Compliance Consultation

Hi Ryan,

Is the call in for the EPA Compliance Consultation still scheduled for today?

Thanks,
Natasha

--
Natasha John, M.A.
Government and Legislative Affairs Associate
Navajo Nation Washington Office
Office: 202-682-7390
Direct: 202-847-4804
Ex. 6
njohn@nnwo.org

--
Natasha John, M.A.
Government and Legislative Affairs Associate
Navajo Nation Washington Office
Office: 202-682-7390
Direct: 202-847-4804
Ex. 6
njohn@nnwo.org

Message

From: Tim Doyle [TDoyle@accf.org]
Sent: 3/29/2019 2:42:08 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: A. Wheeler speaks briefly to S&P Global about ESG and Climate Policy

Ryan,

FYI: This is a S&P Global podcast I participated in and then to my surprise when I heard it, A. Wheeler apparently did as well.

I hope all is well. As always, let me know if I can be of any help.

Tim

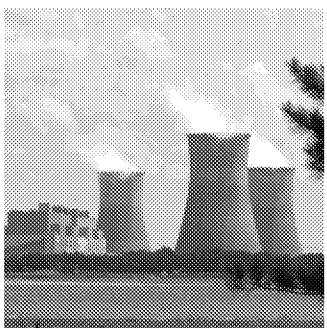
Tim Doyle
Vice President of Policy & General Counsel
American Council for Capital Formation (ACCF)
ACCF Center for Policy Research
tdoyle@accf.org | www.accf.org
1001 Connecticut Ave., NW | Ste. 620 | DC 20036
Ex. 6 | 202.293.5811 (W)

From: Whieldon, Esther <Esther.Whieldon@spglobal.com>
Sent: Friday, March 29, 2019 9:58 AM
To: Tim Doyle <TDoyle@accf.org>; Oliver Williams <oliver.williams@fticonsulting.com>
Subject: ESG Insider podcast Episode 2 is posted

Hey Tim, Thanks so much for coming in for an interview earlier this month. We posted the podcast episode this morning. We'd love it if you tweet it also.

--Esther

https://soundcloud.com/esginsider/its-proxy-season-investors-and-companies-are-facing-off-over-these-esg-issues



Investors and companies are facing off over these sustainability issues

Shareholders filed proposals on nearly 400 environmental, social and sustainability issues at U.S. companies through mid-February. The top topics were climate change, gender diversity and corporate po

soundcloud.com

--Esther

Esther Whieldon
Senior reporter on climate, energy and ESG
Office: 571-814-2085
Ex. 6
Market Intelligence
S&P Global
1700 North Moore Street, Suite 1110
Arlington, VA 22209
Esther.Whieldon@spglobal.com

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*We're News, not Ratings: https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/index

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Message

From: Clifford, Brian (EPW) [Brian_Clifford@epw.senate.gov]
Sent: 1/3/2019 11:20:43 PM
To: Lyons, Troy [lyons.troy@epa.gov]
CC: Leggett, Matt (EPW) [Matt_Leggett@epw.senate.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: Wheeler confirmation

Ok, thanks

Sent from my iPhone

> On Jan 3, 2019, at 6:17 PM, Lyons, Troy <lyons.troy@epa.gov> wrote:
>
>
> We are hoping to have it completed early tomorrow. We are on pushing the White House hard to get this finished
>
>
> Sent from my iPhone
>
>> On Jan 3, 2019, at 1:02 PM, Clifford, Brian (EPW) <Brian_Clifford@epw.senate.gov> wrote:
>>
>> Troy,
>>
>> Happy new year. We just got McIntosh passed, so that is good news.
>>
>> Any news on the paperwork for the Wheeler nomination? As Matt explained in the e-mail chain below, we will need it today.
>>
>> Thanks,
>> Brian
>> 202-224-7855
>>
>> -----Original Message-----
>> From: Lyons, Troy <lyons.troy@epa.gov>
>> Sent: Monday, December 31, 2018 7:56 PM
>> To: Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov>
>> Cc: Russell, Richard (EPW) <Richard_Russell@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>; Clifford, Brian (EPW) <Brian_Clifford@epw.senate.gov>
>> Subject: Re: Wheeler confirmation
>>
>> Will do.
>>
>> Happy new year!
>>
>>
>>
>> Sent from my iPhone
>>
>>> On Dec 31, 2018, at 5:00 PM, Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov> wrote:
>>>
>>> Troy,
>>>
>>> Great news that we should get Wheeler this week. Just a reminder to include Brian on the questionnaire email so he can forward to the minority in case I'm traveling.
>>>
>>> Happy New Year!
>>>
>>> Best,
>>> Matt
>>>
>>>
>>> Sent from my iPhone
>>>
>>>> On Dec 28, 2018, at 9:29 AM, Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov> wrote:
>>>>
>>>> Troy,
>>>>
>>>> To clarify, we'll need the formal nomination on January 3rd - the first day of the new Congress.
>>>>
>>>> I just spoke to Deborah Bortot at OGE. She's handling this through the shutdown. Our normal contact, Teresa Williamson, is furloughed.

>>>>
>>>> EPW will send OGE the formal nomination when we receive it. (Otherwise, OGE waits for it to be posted on Congress.gov.) OGE will then contact EPA for signatures from (1) Andrew Wheeler and (2) Justina Fugh, the Alternate Designated Ethics Official. Wheeler and Fugh should both be available to sign immediately. Please note that Fugh must sign since EPA does not currently have a Primary Designated Agency Ethics Official. It is currently OGE's understanding that she has not been furloughed yet, but could be in the future. You will need to make sure she is available to sign once OGE contacts EPA.
>>>>
>>>> EPA then returns the signed OGE back to OGE. Deborah will expedite it from there. She's already talked to the Director of OGE about the need to get his signature as soon as possible. Once that happens, they'll return to us.
>>>>
>>>> I don't think it hurts if you all send the questionnaire on Wednesday, January 2, so we can forward to the minority exactly two weeks in advance. If they balk for some reason and say they need it dated in the new Congress, you all can just resign and resubmit on January 3.
>>>>
>>>> I'm not back in the office until January 4th. I'll be on a plane most of the day January 3rd. Please keep Brian Clifford, cc'd, in the loop on all of this, too. He's currently running the office while Richard's out.
>>>>
>>>> Best,
>>>>
>>>> Matt
>>>>
>>>>
>>>> Sent from my iPhone
>>>>
>>>>> On Dec 28, 2018, at 6:05 AM, Lyons, Troy <lyons.troy@epa.gov> wrote:
>>>>>
>>>>> Thanks, Matt. We will circle back to make sure OGE is still on track.
>>>>>
>>>>>
>>>>>
>>>>> Sent from my iPhone
>>>>>
>>>>>> On Dec 27, 2018, at 9:19 PM, Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov> wrote:
>>>>>>
>>>>>> The Senate is still conducting business during the shutdown. Our operations shouldn't really be impacted since the leg branch appropriations bill is already law. Our next legislative session is January 2nd. If you can deliver the formal nomination, questionnaire, and OGE by January 2nd, I don't see why we can't still tee up a January 16th hearing. Unless you foresee shut-down related problems on your side (like maybe we can't get OGE until we reopen?) Do you anticipate any problems on your side?
>>>>>>
>>>>>> CC'ing Brian Clifford, too.
>>>>>>
>>>>>> Sent from my iPhone
>>>>>>
>>>>>>> On Dec 27, 2018, at 1:40 PM, Lyons, Troy <lyons.troy@epa.gov> wrote:
>>>>>>>
>>>>>>> How will timing work for Andrew's hearing assuming you get the papers by next week but the government remains shutdown?
>>>>>>>
>>>>>>>
>>>>>>> Sent from my iPhone

Message

From: David Schwietert [DSchwietert@autoalliance.org]
Sent: 1/12/2019 7:17:13 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: re: Automobile Manufacturer Certification Issues
Attachments: Light Duty Automobile Certificate overview January 12 2019.docx; cd1802.pdf

Importance: High

Ryan,

Attached you will find more details regarding the existing challenges that automobile manufacturers are witnessing when it comes to the certification paperwork that is required before a new vehicle can be transported anywhere in the U.S. for sale to the public. In many instances, a manufacturer may be unwilling to even assemble the vehicle absent the EPA certification paperwork being complete.

I've also attached the updated fee structure that OAR provided to Auto Manufacturers with respect to the 2019 fee structure that exists for processing the certification paperwork.

There's also the ability for EPA to grant conditional certifications that allow vehicles to be transported and sold, which preserves all EPA authorities if there needed to be follow up afterwards. Simply put, the degree of harm that auto manufacturers (and the public) experience will increase the longer the certification issue is unresolved.

From my review of EPA's contingency plan, the Agency **"retains the authority to modify lists of personnel working or excepted or exempted activities, as necessary, during any period or shutdown."**

Happy to answer any questions you or others may have and we appreciate your attention to this matter.

Dave

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL VEHICLE AND FUEL EMISSIONS LABORATORY
2565 PLYMOUTH ROAD
ANN ARBOR, MICHIGAN 48105-2498

OFFICE OF
AIR AND RADIATION

February 20, 2018

CD-18-02 (All Manufacturers and Converters)

Subject: Adjustment of the Motor Vehicle and Engine Compliance Program Fees for Calendar Year 2019

Dear Manufacturer:

The Motor Vehicle and Engine Compliance Program (MVECP) fees rule (69 Fed. Reg. 26222, May 11, 2004) provided for annual certification fees adjustment and advance notification of the same. In accordance with updated fees regulations 40 C.F.R. 1027.105(c), this letter serves as EPA's advance notification of the new fees for complete applications for certification received by EPA on or after January 1, 2019, through December 31, 2019. Please note that fees are determined by the calendar year in which a complete application is received, not by the model year. The new certification fees schedule is provided in Attachment 1 to this letter.

The new fees are calculated by inserting the appropriate values for each category into the formulas shown in Attachment 2. The formulas take into account changes in labor costs (multiplying the labor costs by a factor derived from changes in the Consumer Price Index (CPI)), and apply an adjustment factor that is based on the average number of certificates issued in the 2016 and 2017 model years for each fee/industry category. The CPI value for November, 2017, which was obtained from the United States Department of Labor, is 246.669. The number of certificates for each fee/industry category for the 2016 and 2017 model years is provided in Attachment 2 to this letter. The formula also includes fixed operating (Op) and labor (L) costs and these values are set forth in 40 C.F.R. 1027.105(d)(1).

EPA has transitioned to a fully electronic payment system for the submission of fee payments and fee forms that improves processing time and notification of fees payment. Fee forms are no longer available on EPA's website. A new fee filing form that may be used for all payment types is available on Pay.gov.

Any questions regarding the adjusted fees or fee payments should be directed to your EPA certification team representative, and any questions about the process EPA has employed in arriving at the new fees or the transition to electronic fee payment should be directed to Lynn Sohacki at 734-214-4851.

Sincerely,

Byron J. Bunker, Director
Compliance Division
Office of Transportation and Air Quality

Enclosures

Enclosure 1 to CD-18-02
Table of Fees for Calendar Year 2019

Category (Industry Sector Codes from fifth digit of engine family name)	**Certificate Type**	**Fee for Calendar Year 2019**
Light-Duty Vehicles, Light-Duty Trucks, Medium-Duty Passenger Vehicles, excluding ICIs (A,V,T,J)	Federal Certificate[1] California-only Certificate[1]	$26,864 $14,367
Complete Heavy-Duty Highway Vehicles , excluding ICIs (D)	Federal Certificate[1] California-only Certificate[1]	$26,864 $14,367
ICIs for the following industries: LD, MDPV, or Complete HD Vehicles	All Types	$97,115 or 1% of the aggregate retail sales value of the vehicles being certified
Heavy-Duty Highway Engines, (H,E)	Federal Certificate[1] California-only Certificate[1]	$55,892 $563*
Heavy-Duty Evaporative (F)	Evaporative Family Certificate	$563*
Highway Motorcycles, including ICIs (C)	All Types	$1,852*
Nonroad Compression-Ignition Engines excluding Locomotives, Marine and Recreational engines (L)	All Types	$2,940
Nonroad Spark-Ignition Engines (S,B)	All Types	$563*
Marine Engines (W,N,M)	All Types regulated by 40 CFR parts -1045 and 94 or Annex VI[1]	$563*
All Nonroad Recreational, excluding Marine engines (Y,X)	All Types	$563*
Locomotives (K,G)	All Types	$563*
Equipment and Fuel System Components (P)	All Types	$451*

[1] Federal and California-only Certificates and Annex VI are defined in 40 C.F.R. 1027.110(a)

* Remains at 2018 amount as per 40 C.F.R. 1027.105(c)(2)

Enclosure 2 to CD-18-02
"Op" and "L" Values and Number of Certificates for 2016 and 2017

Fee Category	"Op"	"L"	2016 Certificates	2017 Certificates
LD Cert/FE	$3,322,039	$2,548,110	556	550
LD In-Use	$2,858,223	$2,184,331	544	548
LD ICI	$344,824	$264,980	8	9
MC HW	$225,726	$172,829	288	299
HD HW	$1,106,224	$1,625,680	62	77
NR CI	$486,401	$545,160	487	491
Other	$177,425	$548,081	1,953	2057
Equipment and Fuel System Components	$5,039	$236,670	843	870

For each category <u>except</u> Equipment and Fuel System Components:

Certification fee (Calendar Year 2019) = [Op + L* (CPI Nov 2017 /CPI 2002)] * 1.169/[(Cert # 2016 + Cert # 2017) * .5], CPI 2002=180.9

For Equipment and Fuel System Components:

Certification fee (Calendar Year 2019) = [Op + L* (CPI Nov 2017 /CPI 2006)] * 1.169/[(Cert # 2016 + Cert # 2017) * .5], CPI 2006=201.8

The LD Fed. Certificate fee is the LD in-use and LD Cert/FE category fees added together. The LD Cal-only fee is only the LD Cert/FE category fee.

The CPI is posted on the United States Department of Labor, Bureau of Labor Statistics website in the page entitled "Consumer Price Index Data from 1913 to 2017," Table: "All Urban Customers – (CPI – U), 1913-2017*":
http://www.usinflationcalculator.com/inflation/consumer-price-index-and-annual-percent-changes-from-1913-to-2008/

The Issue: Critical Passenger Car and Light-duty Truck Certifications

- Vehicle assembly plants will soon need to idle new vehicle production.
  - Lack of EPA certification will eventually lead to the manufacturing cessation of all vehicles built for the U.S. market.

- An EPA certificate of conformity is needed before vehicles can enter commerce in the U.S.
  - Entering commerce means shipping from an assembly plant in the U.S. or from a U.S. port for sale in the U.S.

- To date, at least nine auto manufacturers have identified certification delays that will cause economic harm – starting as soon as the week of January 14th.
  - Lack of certification will have a cascading impact on manufacturers until certification applications can be processed and approved.
  - These pending certifications impact both Model Year 2019 vehicles as well as Model Year 2020 vehicles. Note, the industry is already halfway through MY 2019 and MY 2020 began on January 1, 2019.

- The inability to obtain certifications for new vehicles also inhibits manufacturers/distributors from introducing and selling vehicles that would otherwise help in meeting CAFE/GHG compliance obligations.

- There are several steps to obtaining a certificate.
  - Some vehicles could be at the final certification step; EPA staff simply needs to review the manufacturers' submitted documentation so that EPA can "hit a button" to issue the certificate.
  - Other steps include more Agency interaction with the Manufacturer.
  - Simply put, EPA staff need to expedite processing of time sensitive certifications due to the significant harms that would be caused absent timely approval – such as production delays, vehicle transport delays, or the inability to manufacture vehicles because there's no clarity regarding when the partial government shutdown ends. It is against the law for un-certified vehicles to enter Commerce – including being shipped from a port or transported from a manufacturing plant for sale.

Request:

- Instruct EPA OAR OTAQ officials to review and issue certificates of conformity for applications that are in the final step of the certification process.
- Allow officials to complete the steps necessary for manufacturers to submit applications for certification.
    - Unlock the EPA Verify/CROMERR electronic data exchange to enable manufacturers to submit necessary information for approval.
    - Where appropriate, the EPA can select vehicles for testing and issue conditional certificates of conformity.
    - Certifications can be granted, including conditional certifications without eroding any of EPA inherent authorities when it comes to auto manufacturer obligations under the Clean Air Act.

Certificate Overview

[HYPERLINK "https://www.epa.gov/clean-air-act-overview/clean-air-act-text"] (codified as 42 U.S.C. United States Code, Title 42 - THE PUBLIC HEALTH AND WELFARE, CHAPTER 85 - AIR POLLUTION PREVENTION AND CONTROL, SUBCHAPTER II - EMISSION STANDARDS FOR MOVING SOURCES, Part A - Motor Vehicle Emission and Fuel Standards, Sec. 7525) sets out what is required for motor vehicle and motor vehicle engine compliance testing and certification. This is a link to the regulations that were promulgated by EPA for issuing certificates: [HYPERLINK "https://www.law.cornell.edu/cfr/text/40/86.1848-10"]

Basically, a manufacturer must submit data to the EPA, and after review, EPA may issue a certificate permitting importation or sale of the vehicle model. This is what an issued certificate of conformity looks like:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2019 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: FCA US LLC
(U.S. Manufacturer or Importer)
Certificate Number: KCRXT02.05P1-052-R01

Effective Date: 09/10/2018
Expiration Date: 12/31/2019

Byron J. Bunker, Division Director
Compliance Division

Issue Date: 09/10/2018
Revision Date: 10/09/2018

Test Group Name: KCRXT02.05P1
Evaporative/Refueling Family Name: KCRXR0136PF0
Executive Order Number:
Applicable Exhaust Emission Standards: Federal Tier 3 Transitional Bin 88, LEV
Applicable Evaporative/Refueling Standards: Federal Tier 3 Evap

Engine Displacement: 2.0 Liters
Exhaust Emission Test Fuel Type: CARB LEV3 E10 Regular Gasoline
Full Useful Life Miles: Exhaust Emissions: 120,000 miles
Full Useful Life Miles: Evaporative/Refueling Emissions: 150,000 miles

Models Covered: Jeep: Wrangler 4X4
Mild Hybrid (BSG)

Pursuant to sections 206 of the Clean Air Act (42 U.S.C.7525) and 40 CFR Parts 85, 86, 88, 600, 1037, 1065, and 1066 as applicable, this certificate of conformity is hereby issued with respect to test vehicles which have been found to conform to the requirements of the regulations on Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines (40 CFR Parts 85, 86, 88, 600, 1037, 1065, and 1066 as applicable) and which represent the new motor vehicle models listed above by test group and evaporative/refueling emission family, more fully described in the application of the above named manufacturer. Vehicles covered by this certificate have demonstrated compliance with the applicable emission standards as more fully described in the manufacturer's application. This certificate covers the above models, which are designed to meet the applicable emission standards specified in 40 CFR Parts 85, 86, 88, 600, 1037, 1065, and 1066 as applicable at both high and low altitude as applicable.

EPA is issuing this certificate subject to the conditions and provisions of 40 CFR 86.1848(c), and 40 CFR 1037 as applicable.

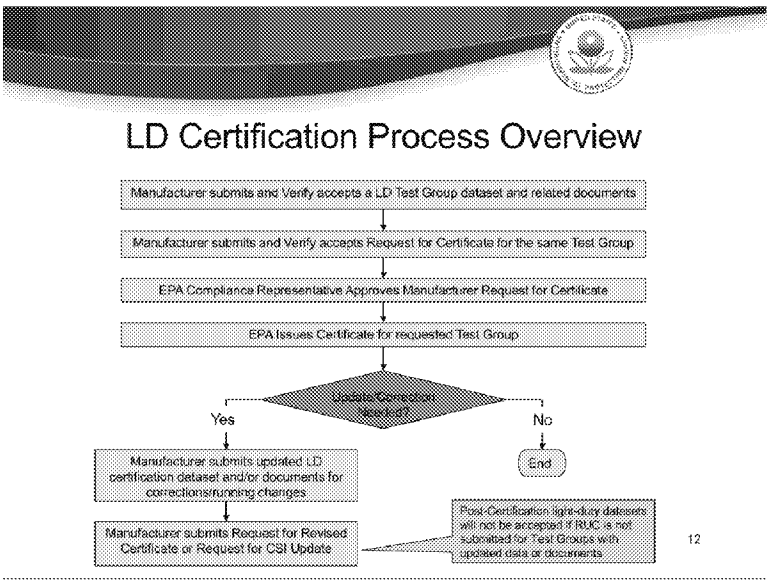
This certificate covers only those new motor vehicles or vehicle engines which conform, in all material respects, to the design specifications that apply to those vehicles or engines described in the documentation required by 40 CFR Parts 85, 86, 88, 600, 1037, 1065, and 1066 as applicable and which are produced during the 2019 model year production period stated on this certificate of the said manufacturer, as defined in 40 CFR Parts 85, 86, 88, 600, 1037, 1065, and 1066 as applicable. The manufacturer shall obtain the approval of the California Air Resources Board (in the form of an executive order issued by the California Air Resources Board) prior to introducing any vehicle covered by this certificate into commerce 1) in the State of California, or 2) in a State that, under the authority of Section 177 of the Clean Air Act, has adopted and placed into effect the California standards to which this test group has been certified.

Catalyst-equipped vehicles designed to be operated on gasoline or flexible fuel are equipped with an emission control device which the Administrator has determined will be significantly impaired by the use of leaded fuel. This certificate is issued subject to the conditions specified in 40 CFR 80.24. Catalyst-equipped vehicles designed to be operated on gasoline or flexible fuel, otherwise covered by this certificate, which are driven outside the United States, Canada, Mexico, Japan, Australia, Taiwan and the Bahama Islands will be presumed to have been operated on leaded fuel resulting in deactivation of the catalysts. If these vehicles are imported or offered for importation without retrofit of the catalyst, they will be considered not to be within the coverage of this certificate unless included in a catalyst control program operated by manufacturer or a United States Government Agency and approved by the Administrator.

In the case of completely assembled vehicles, this certificate of conformity covers only vehicles which are completely manufactured prior to January 1, 2020. Normally incompletely assembled vehicles (such as cab chassis) may be completed after this date, provided that the basic manufacturing (including installation of the emission control system) was completed prior to January 1, 2020. This certificate does not cover vehicles sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

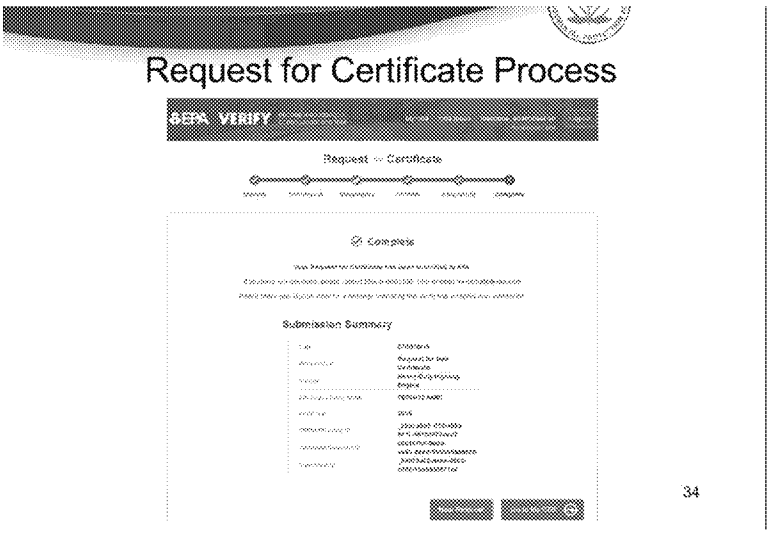
Mild Hybrid (BSG)

EPA Certification Flowchart



Request for Certificate

EPA relies on an electronic process (VERIFY/ Request for Certificate Module CROMERR) to accept manufacturer data and to signal to EPA staff that all the required information ("Certification Application") and representative test data has been inputted and that now a certificate is being requested. This is a summary page showing the final stage of the request:



EPA Testing and Conditional Certification

If EPA has selected a vehicle for testing, a certificate can be issued while the manufacturer waits. EPA has put in place a workaround for when EPA is not able to complete a confirmation retest (this is called issuing a "conditional certificate"; see page 8 of this EPA [HYPERLINK "https://iaspub.epa.gov/otaqpub/display_file.jsp?docid=33582&flag=1"] which discusses conditional certificates). Thus in-lab testing at EPA NVFEL lab in Ann Arbor is not needed, either for criteria pollutant emissions or for GHG or fuel economy labeling or CAFE purposes, in order for EPA to be able to issue a conditional certificate.

Additional testing can also be performed after the issuance of a certificate of conformity. This is true for any [HYPERLINK "https://iaspub.epa.gov/otaqpub/display_file.jsp?docid=35637&flag=1"] that EPA has put in place. This testing can be performed once the government shutdown is lifted.

EPA staff need to re-enable the functioning of the VERIFY electronic process (it has reportedly been shut off) and to sign and issue conditional certificates to manufacturers.

Documents Needed for a Certificate Request

Other items not included in the EPA Verify system include the fees that a manufacturer must pay in order to request a certificate and California approvals. To pay fees manufacturers use [HYPERLINK "https://pay.gov/public/form/start/66591388"]; this system continues to operate.

California Air Resources Board (CARB) has historically provided and continues to provide approval of onboard diagnostic systems for obtaining an EPA certificate. CARB also issues Executive Orders (EO), similar to EPA certificates, and it is required in addition to EPA certificates for vehicle sales in the state

of California and Section 177 states. These separate processes are not affected by the federal government shutdown.

Significant Harm Can be Avoided:

- Entering commerce means shipping from an assembly plant in the U.S. or from a U.S. port for sale in the U.S.
- Delays in certification could quickly cause vehicle plant and port inventory to overrun storage capacity – which then forces manufacturers to idle production which is tremendously costly, not to mention disruptive when it comes to manufacturing jobs and the overall supply chain.
- Storage capacity overrun also results in severe disruptions to the manufacturers' distribution chain as vehicles pile up and cannot be transported on public roads due to their non-certified status.
- Manufacturers typically certify new vehicles year round.
- Vehicles are certified by model year.
- Model years overlap such that currently 2019 and 2020 model year vehicles can be entered into commerce.
- Even if a vehicle does not change in any material aspects, it must be re-certified to sell in newer model years.
- Approval of pending and time-sensitive certifications can reduce the economic harms related to vehicles that can't otherwise enter Commerce absent EPA approval.
- Certifications can be granted, including conditional certifications without eroding any of EPA inherent authorities when it comes to auto manufacturer obligations under the Clean Air Act.

Message

From: Forbes, Andrew (Inhofe) [Andrew_Forbes@inhofe.senate.gov]
Sent: 1/3/2019 1:13:37 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Fwd: Cloakroom Wrap Up

And looks like just pro forma tomorrow morning and roll right into 116th.

Sent from my iPhone

Begin forwarded message:

From: Cloakroom <**subscriptions_cloakroom@rep-secretary.senate.gov**>
Date: January 2, 2019 at 8:09:25 PM EST
To: Undisclosed recipients:;
Subject: Cloakroom Wrap Up
Reply-To: Cloakroom <**subscriptions_cloakroom@rep-secretary.senate.gov**>

Wrap Up Memo

WEDNESDAY, JANUARY 2, 2019 AT 08:09 PM

Cloakroom Wrap Up

Roll Call Votes:

There were no roll call votes during today's session of the Senate.

Executive Session:

Treaty 7: U.N. Convention on the Assignment of Receivables in International Trade

PN 1999 in the Coast Guard, referred to the Commerce Committee between 9/6/2018-11/26/2018.

PN 2210 - Robert S. Brewer, Jr., of California, to be United States Attorney for the Southern District of California for the term of four years.

PN 2270 – Nicholas A. Trutanich, of Nevada, to be United States Attorney for the District of Nevada for the term of four years.

PN 1963 - Brian T. Moran, of Washington, to be United States Attorney for the Western District of Washington for the term of four years.

PN 2213 - Matthew J. Schneider, of Michigan, to be United States Attorney for the Eastern District of Michigan for the term of four years.

PN 2437 - John C. Milhiser, of Illinois, to be United States Attorney for the Central District of Illinois for the term of four years.

PN 2448 - David L. Anderson, of California, to be United States Attorney for the Northern District of California for the term of four years.

PN 2450 - Lawrence Keefe, of Florida, to be United States Attorney for the Northern District of Florida for the term of four years.

PN 2598 - Aaron L. Weisman, of Rhode Island, to be United States Attorney for the District of Rhode Island for the term of four years.

PN 1893 - Denny Wade King, of Tennessee, to be United States Marshal for the Middle District of Tennessee for the term of four years.

PN 2242 - John M. Garrison, of Texas, to be United States Marshal for the Eastern District of Texas for the term of four years.

PN 1965 - Todd L. Nukes, of Indiana, to be United States Marshal for the Northern District of Indiana for the term of four years.

PN 2120 - Michael S. Yeager, of Georgia, to be United States Marshal for the Northern District of Georgia for the term of four years.

PN 2214 - Mark B. Shepherd, of Mississippi, to be United States Marshal for the Southern District of Mississippi for the term of four years

Cal. #1148 - Kim Gaffney, of Wisconsin, to be United States Marshal for the Western District of Wisconsin for the term of four years.

Cal. #1149 - Bradley Jay LaRose, of Vermont, to be United States Marshal for the District of Vermont for the term of four years.

Cal. #1150 - Douglas J. Strike, of Iowa, to be United States Marshal for the Northern District of Iowa for the term of four years.

PN 2642 - L. E. Sola, of Florida, to be a Federal Maritime Commissioner for a term expiring June 30, 2023.

PN 2641 - Daniel B. Maffei, of New York, to be a Federal Maritime Commissioner for a term expiring June 30, 2022. (Reappointment).

Cal. #1106 - Tamara Bonzanto, of New Jersey, to be an Assistant Secretary of Veterans Affairs (Office of Accountability and Whistleblower Protection).

Cal. #1107 - James Paul Gfrerer, of Virginia, to be an Assistant Secretary of Veterans Affairs (Information and Technology).

Cal. #1198 - Donald L. Palmer, of Florida, to be a Member of the Election Assistance Commission for a term expiring December 12, 2021.

Cal. #1199 - Benjamin Hovland, of Maryland, to be a Member of the Election Assistance Commission for a term expiring December 12, 2019.

Cal. #1192 - Erhard R. Chorle, of Illinois, to be a Member of the Railroad Retirement Board for a term expiring August 28, 2022.

PN 2702 - Johnathan Bragg, of Virginia, to be a Member of the Railroad Retirement Board for a term expiring August 28, 2019.

PN 2703 - Johnathan Bragg, of Virginia, to be a Member of the Railroad Retirement Board for a term expiring August 28, 2024. (Reappointment)

PN 2704 - Thomas Jayne, of Missouri, to be a Member of the Railroad Retirement Board for a term expiring August 28, 2023.

Cal. #1092 - James W. Carroll, Jr., of Virginia, to be Director of National Drug Control Policy.

Cal. #612 - Brendan Carr, of Virginia, to be a Member of the Federal Communications Commission for a term of five years from July 1, 2018.

Cal. #940 - Geoffrey Adam Starks, of Kansas, to be a Member of the Federal Communications Commission for a term of five years from July 1, 2017.

Cal. #1078 - Kelvin Droegemeier, of Oklahoma, to be Director of the Office of Science and Technology Policy.

Cal. #1079 - Joel Szabat, of Maryland, to be an Assistant Secretary of Transportation.

Cal. #1143 - Thomas F. Gilman, of Arizona, to be an Assistant Secretary of Commerce.

Cal. #1144 - Thomas F. Gilman, of Arizona, to be Chief Financial Officer, Department of Commerce.

Cal. #1049 - Mary Bridget Neumayr, of Virginia, to be a Member of the Council on Environmental Quality.

PN 2478 - Alexandra Dapolito Dunn, of Virginia, to be Assistant Administrator for Toxic Substances of the Environmental Protection Agency.

Cal. #1080 - Rae Oliver, of Virginia, to be Inspector General, Department of Housing and Urban Development.

Cal. #1052 - Teri L. Donaldson, of Texas, to be Inspector General of the Department of Energy.

Cal. #1075 - Carmen Guerricagoitia McLean, of the District of Columbia, to be an Associate Judge of the Superior Court of the District of Columbia for the term of fifteen years.

Cal. #1145 - Michael Kubayanda, of Ohio, to be a Commissioner of the Postal Regulatory Commission for a term expiring November 22, 2020.

Cal. #1146 - Steven Dillingham, of Virginia, to be Director of the Census for a term expiring December 31, 2021.

Cal. #1170 - Gail S. Ennis, of Maryland, to be Inspector General, Social Security Administration.

Cal. #1171 - Richard S. Tischner, of Virginia, to be Director of the Court Services and Offender Supervision Agency for the District of Columbia for a term of six years.

Cal. #823 - Patrick Fuchs, of Wisconsin, to be a Member of the Surface Transportation Board for the term of five years. (New Position)

Cal. #1044 - Martin J. Oberman, of Illinois, to be a Member of the Surface Transportation Board for a term expiring December 31, 2023. (Reappointment)

Cal. #1016 - Daniel Simmons, of Virginia, to be an Assistant Secretary of Energy (Energy Efficiency and Renewable Energy).

Cal. #1112 - Alan Ray Shaffer, of Virginia, to be Deputy Under Secretary of Defense for Acquisition and Sustainment.

Cal. #1108 - Casey Wardynski, of Alabama, to be an Assistant Secretary of the Army.

Cal. #1110 - Alex A. Beehler, of Maryland, to be an Assistant Secretary of the Army.

Cal. #1041 - Ellen E. McCarthy, of Virginia, to be an Assistant Secretary of State (Intelligence and Research).

Cal. #1124 - Ron Johnson, of Wisconsin, to be a Representative of the United States of America to the Seventy-third Session of the General Assembly of the United Nations.

Cal. #1125 - Jeff Merkley, of Oregon, to be a Representative of the United States of America to the Seventy-third Session of the General Assembly of the United Nations.

Cal. #1172 - Michael T. Harvey, of Texas, to be an Assistant Administrator of the United States Agency for International Development.

Cal. #1173 - Lucy Tamlyn, of New York, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to Central African Republic.

Cal. #1174 - Donald Armin Blome, of Illinois, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Tunisia.

Cal. #1175 - Craig Lewis Cloud, of Florida, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Botswana.

Cal. #1176 - Judith Gail Garber, of Virginia, a Career Member of the Senior Foreign Service, Class of Career Minister, to be Ambassador of the United States of America to the Republic of Cyprus.

Cal. #1177 - Dennis B. Hankins, of Minnesota, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Mali.

Cal. #1178 - Simon Henshaw, of Massachusetts, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Guinea.

Cal. #1179 - William H. Moser, of North Carolina, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Kazakhstan.

Cal. #1180 - Michael Peter Pelletier, of Maine, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Madagascar, and to serve concurrently as Ambassador of the United States of America to the Union of the Comoros.

Cal. #1183 – Richard Carlton Paschall III, of North Carolina, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of The Gambia.

Cal. #1184 – Eric Williams Stromayer, of Virginia, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Togolese Republic.

Cal. #1185 – Eric George Nelson, of Texas, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to Bosnia and Herzegovina.

Cal. #1186 – Dennis Walter Hearne, of Virginia, a Career Member of the Senior Foreign Service, Class of Counselor, to be Ambassador of the United States of America to the Republic of Mozambique.

Cal. #1187 – Patricia Mahoney, of Virginia, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Benin.

Cal. #1188 – John Mark Pommersheim, of Florida, a Career Member of the Senior Foreign Service, Class of Counselor, to be Ambassador of the United States of America to the Republic of Tajikistan.

Cal. #1189 – Susan N. Stevenson, of Washington, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Equatorial Guinea.

Cal. #1216 - Kyle McCarter, of Illinois, to be Ambassador of the United States of America to the Republic of Kenya.

Cal. #1217 - Michael S. Klecheski, of New York, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Mongolia.

Cal. #1218 - Matthew John Matthews, of Virginia, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to Brunei Darussalam.

Cal. #1219 - Earle D. Litzenberger, of California, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Azerbaijan.

Cal. #1220 - Sarah-Ann Lynch, of Maryland, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Co-operative Republic of Guyana.

Cal. #1221 - Christopher Paul Henzel, of Virginia, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Yemen.

Cal. #1222 - Lynne M. Tracy, of Ohio, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Armenia.

Cal. #1223 - Arthur B. Culvahouse, Jr., of Tennessee, to be Ambassador of the United States of America to the Commonwealth of Australia.

Cal. #1224 - Bonnie Glick, of Maryland, to be Deputy Administrator of the United States Agency for International Development.

Cal. #1225 - Carol Z. Perez, of Virginia, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Director General of the Foreign Service.

All nominations on the Secretary's Desk in the Foreign Service.

Wrap Up:

There were no wrap up items during today's session of the Senate.

Thursday, January 3rd:

The Senate will convene at 12:00 pm. Following any Leader remarks, the Senate will be in a period of Morning Business with Senators permitted to speak for up to 10 minutes each.

Please note, the Senate will begin the 116th Congress at 12:00 noon and Senators will be sworn in groups of four in alphabetical order.

Please also note, the Senate will convene for a Pro Forma session only, with no business conducted, on Thursday, January 3rd at 11:50 am and stand adjourned until it next convenes at 12:00 pm on Thursday, January 3rd.

Wrap Up Memos are sent from the Senate Republican Cloakroom using the telephone alert system. An E-mail copy is sent to offices and posted on Trunkline (**http://gop.senate.gov**) as a convenience, but primary notification will always come via telephone. If you have questions about wrap up memos, unanimous consent items or other floor scheduling matters, please call the Cloakroom at (202) 224-6191. Please do not reply to this message.

To change your Trunkline email subscriptions, please visit your **user profile** page.

Message

From: Esri Nonprofit and Global Organizations Team [newsletter@esri.com]
Sent: 3/29/2019 1:07:27 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Your Special Invitation to Register for GIS for a Sustainable World!

View email in web browser.

Leverage Powerful GIS Technology to Build a Better World

Your special invitation to register!

The 2019 GIS for a Sustainable World Conference will be held April 30–May 2 in Geneva, Switzerland, at the InterContinental Geneva Hotel.

The theme this year is *Collaborating for a Better World* and the conference will confront global issues such as social accountability.
Start leveraging powerful GIS technology in new ways to build a better world by ending poverty and inequality, addressing climate change, improving health, and more.

Enjoy immersive learning from hands-on technical workshops focused on the latest GIS technology. Lightning Talks, the Plenary Session, and networking events—all these have been created to empower your organization to achieve your goals.

Meet. Map. Make a difference.

Register Today

You received this due to your interest in GIS for a Sustainable World.
Update your subscription preferences.
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Esri, 380 New York Street, Redlands, CA 92373, USA.

THE SCIENCE OF WHERE

Message

From: Palich, Christian [palich.christian@epa.gov]
Sent: 1/16/2019 2:07:03 AM
To: Lyons, Troy [lyons.troy@epa.gov]
CC: Russell, Richard (EPW) [Richard_Russell@epw.senate.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: USA Today: President Trump made the right pick for EPA: Sen. Barrasso

You guys are the best. Thank you!

Christian R. Palich
Deputy Associate Administrator
Office of Congressional Affairs
Ex. 6

Sent from my iPhone

On Jan 15, 2019, at 7:52 PM, Lyons, Troy <lyons.troy@epa.gov> wrote:

> Thanks, Richard!
>
> Sent from my iPhone
>
> On Jan 15, 2019, at 7:42 PM, Russell, Richard (EPW) <Richard_Russell@epw.senate.gov> wrote:
>
> > Fyi
> >
> > Richard Russell
> > Staff Director
> > Committee on Environment & Public Works
> >
> > # President Trump made the right pick for EPA: Sen. Barrasso
> >
> > **John Barrasso**
> >
> > Published 6:26 p.m. ET Jan. 15, 2019
> >
> > ***Andrew Wheeler has hands-on experience working in the department he will now lead: Opposing view***
> >
> > https://www.usatoday.com/story/opinion/2019/01/15/president-trump-made-right-pick-epa-administrator-editorials-debates/2586435002/

Americans deserve clean air and water. They also deserve clear rules from Washington.

That is why Andrew Wheeler is the right person to lead the Environmental Protection Agency. President Donald Trump's nominee has received bipartisan praise for his fairness and respect for the environment, the agency and the law.

Since July, Mr. Wheeler has served as acting administrator. Under his leadership, EPA has issued commonsense policy regulations to protect our environment, while still allowing America's economy to grow.

Acting EPA Administrator Andrew Wheeler *(Photo: Jack Gruber/USA TODAY)*

Overreaching regulations such as the so-called Clean Power Plan and Waters of the United States rule would have damaged our economy and cost Americans jobs with minimal benefit to the environment.

These regulations weren't just bad policy, they were illegal. With Andrew Wheeler in charge, the agency has worked with states to draft commonsense replacement rules that protect the environment, follow the law and are simpler to understand.

Mr. Wheeler is also leading EPA's efforts to keep families safe at home. For example, an initiative to limit children's exposure to lead has become an agency priority under his leadership.

He has spent decades working on environmental policy. Long before his time in leadership at the EPA, he served as a staff member at the agency. He has hands-on experience working in the department he will now lead.

He knows the legislative process from his time as staff director of the Senate Environment and Public Works Committee. He was also a consultant for energy and environmental clients in the private sector.

President Trump made the right pick when he nominated Andrew Wheeler. He will be an outstanding administrator at the EPA.

Sen. John Barrasso, R-Wyo., is chairman of the Senate Committee on Environment and Public Works.

Message

From: Van Doren, Terry (McConnell) [Terry_VanDoren@mcconnell.senate.gov]
Sent: 1/10/2019 4:38:50 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Lyons, Troy [lyons.troy@epa.gov]
Subject: Re: we just wanted to ensure you had seen

Y'all are work horses I know. Look forward to getting this one over the finish line.

Sent from my iPhone

On Jan 9, 2019, at 9:21 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

> We have our orders. You know how we roll. On it.

Ryan Jackson
Chief of Staff
U.S. EPA
202-564-6999

> On Jan 9, 2019, at 9:14 PM, Van Doren, Terry (McConnell) <Terry_VanDoren@mcconnell.senate.gov> wrote:
>
> > I'm in close contact with EPW on all this. You'll need to turn QFRs quickly in order for us to report out the week of the 28th. Tuesday (29th) is the only day that will work that week. Otherwise it will have to wait until the next week. Hopefully we can avoid that. Appreciate working with you on these.
> >
> > Sent from my iPhone
> >
> > On Jan 9, 2019, at 9:10 PM, Lyons, Troy <lyons.troy@epa.gov> wrote:
> >
> > > Terry-as I am sure you have seen, the hearing has been noticed for January 16. The Administrator met w the Chairman today and they are looking at marking up his nomination the week of January 28. We will keep you posted as things move forward.
> >
> > Sent from my iPhone
> >
> > On Jan 9, 2019, at 12:05 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
> >
> > > Yep. It's on its way so that noticing today will be no problem.

From: Van Doren, Terry (McConnell)
[mailto:Terry_VanDoren@mcconnell.senate.gov]
Sent: Wednesday, January 9, 2019 12:04 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: we just wanted to ensure you had seen

Thanks. I understand from Committee we are just awaiting the OGE paperwork. Hope to get this noticed today.

Terry Van Doren
Policy Advisor
Office of Majority Leader McConnell
Washington, DC 20510
(202) 224-3135

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Wednesday, January 9, 2019 12:01 PM
To: Van Doren, Terry (McConnell)
<Terry_VanDoren@mcconnell.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: we just wanted to ensure you had seen

Ryan Jackson
Chief of Staff
U.S. Environmental Protection Agency
(202) 564-6999

Message

From: Lyons, Troy [lyons.troy@epa.gov]
Sent: 1/3/2019 12:24:15 AM
To: Brian_Clifford@epw.senate.gov; Matt Leggett [Matt_Leggett@epw.senate.gov]; Richard_Russell@epw.senate.gov; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Noms

Worth a shot asking, but are any noms being cleared by tomorrow?

Sent from my iPhone

Message

From: Tom Davis Ex. 6
Sent: 1/12/2019 1:55:23 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]

Good morning,
I wanted to alert you to the corporate roundtable meeting march 27-28 in dc.
You mentioned last year that you could do an EPA update for us similar to last spring.
Think you can do it? I know the shutdown is causing havoc but want to give you dates asap. You would be dinner guest as before.
Let me know if you can do it.

Thanks
Tom
Sent from my quickeniPad

Message

From: The Well News [press@thewellnews.com]
Sent: 1/12/2019 11:09:39 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Levin, Senate Chiefs of Staff, House/Senate Calendar, and Peters' Bipartisan Weekly Address

Levin, Senate Chiefs of Staff, Peters' Bipartisan Weekly Address and MI Delegation Takes a Field Trip

View in browser

The Well NEWS

Straight from The Well

Saturday, January 12, 2019

FIRST DAY IN CONGRESS

The Well News Interviews Rep. Andy Levin (MI-09)

The third video in our series highlighting new members who were willing to discuss their plans for the year ahead with us. A human rights activist, newly elected Representative Andy Levin has been advocating for working families since the 1980s. Now he brings his fight to Washington. Watch him as he navigates his first day as a member of the 116th Congress.

Watch Now

FIELD TRIP

Michigan Delegation Heads to the North American International Auto Show!

On Monday, Michigan Representatives Debbie Dingell, Dan Kildee, Andy Levin, Elissa Slotkin and Haley Stevens are heading to the North American International Auto Show in Detroit. The group is scheduled to do a joint interview with WJR's Paul W. Smith before touring the General Motors, Volkswagen, Toyota, Nissan, FCA, KIA, Honda and Ford exhibits. The members of the group say the trip reaffirms their commitment to work together to support the auto industry and advance mobility.

HOUSE, SENATE SEND BIPARTISAN BILL TO TRUMP TO PROTECT GOVERNMENT WORKERS HURT BY SHUTDOWN

Government Employee Fair Treatment Act

800,000
without Pay

With 450,000 federal workers being forced to work without pay, and another 380,000 federal workers sent home over the holidays without pay, the ongoing shutdown is taking its toll on families and public servants. It is now the longest shutdown in U.S. history, surpassing the shutdown from late 1995 to early 1996, lasting 21 days.

The Government Employee Fair Treatment Act, which passed unanimously in the Senate and was approved across party lines in the House of Representatives, would guarantee that furloughed federal employees will be paid retroactively and stipulates that all employees will be paid as soon as possible after the lapse in appropriations ends. The bill now heads to the President's desk to be signed into law. McConnell indicated on the Senate floor that he had assurances from the White House that President Trump would sign the bill into law.

Read More

NEW CHIEFS

U.S. Senate

As new members of the U.S. Senate take office, one of the first and most important decisions they make is the appointment of a chief of staff. The Well News is tracking all of these top hires.

See List

PETERS HIGHLIGHTS BIPARTISAN LEGISLATION TO SECURE BORDER IN WEEKLY DEMOCRATIC ADDRESS

"When President Trump says Democrats are against border security and for open borders, he's lying"

On Friday, Congressman Scott Peters of California delivered the Weekly Democratic Address. Peters, a centrist member of Congress known for his practical approach to problem solving, represents California's 52nd congressional district that includes coastal and central portions of the city of San Diego.

At a time when political tensions are at an all time high over the issue of immigration and Trump's proposed border wall, Peters reminded us that there was, in fact, bipartisan legislation last Congress proposed by Representatives Pete Aguilar of California and Will Hurd of Texas that included significant border security measures.

Read More

IN THE NEWS

- Rural Recycling Hit Hard by Shifting Scrap Market
  By Rebecca Beitsch
- Did CIA Director Gina Haspel Run a Black Site at Guantanamo?
  By Carol Rosenberg
- Myanmar Judge Rejects the Appeal of Two Jailed Reuters Reporters
  By David Pierson
- A Trial on Whether Trump Has the Right to End TPS for Haiti Ends: Now Comes the Wait
  By Jacqueline Charles

- Nicaragua Accuses US of Financing International Coup as OAS Considers Punishment
  By Franco Ordonez

THE ONE HUNDRED SIXTEENTH

Session One Calendar

This calendar captures the days that the U.S. Senate and U.S. House of Representatives are in session during 2019 in one place.

Download Calendar

WEEKEND LONGREAD

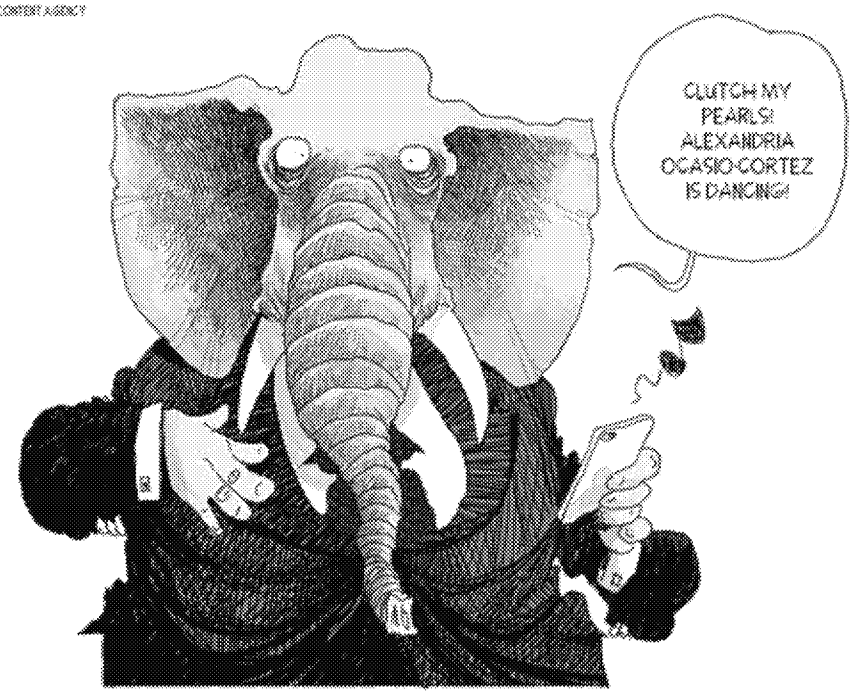
Firefighters' Fateful Choices: How the Woolsey Fire Became an Unstoppable Monster

It was clear from the beginning that the Woolsey fire had the potential to be a monster. It broke out mid-afternoon Nov. 8 on Boeing property near the Santa Susana Pass, fueled by strengthening winds and burning toward populated areas. But during the critical first hours, the Woolsey fire took second priority.

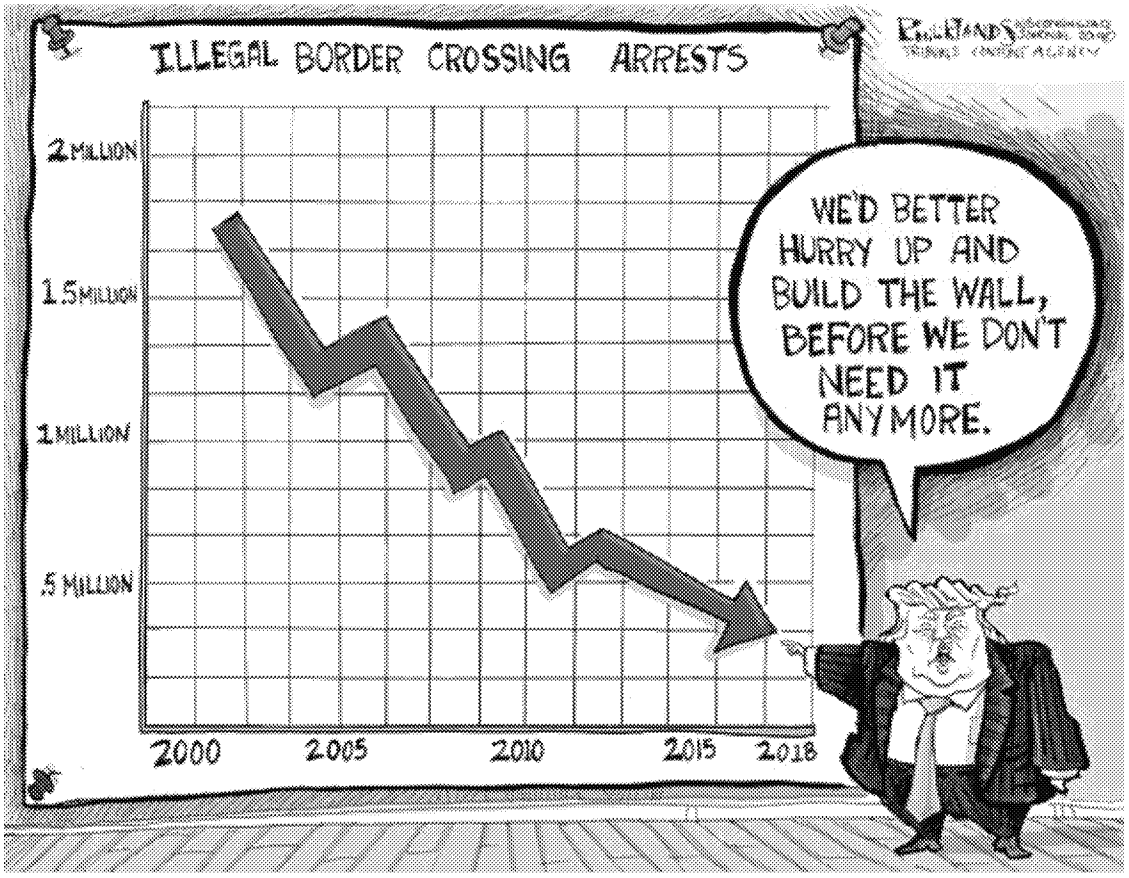
Read More

CARTOONS OF THE WEEK

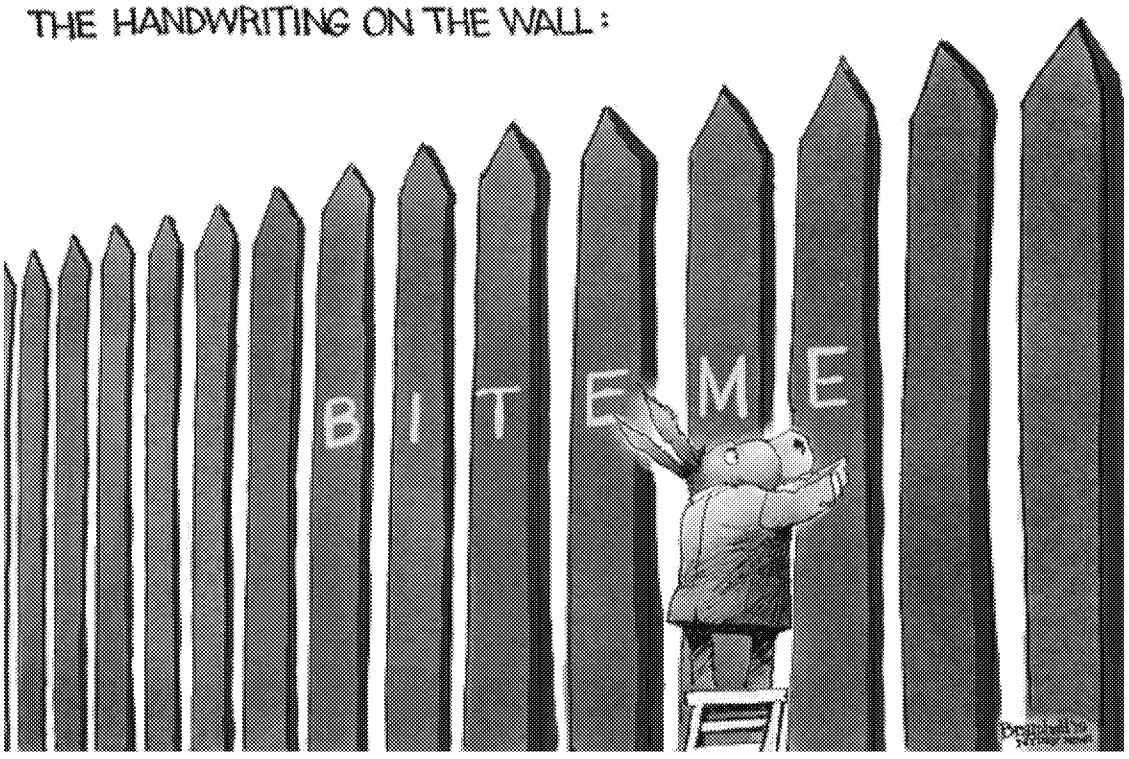
SHENEMAN



CONGRATULATIONS, WE'RE LIVING THE PLOT OF "FOOTLOOSE."



THE HANDWRITING ON THE WALL:



The Well News, 777 6th Street, NW, Washington, DC, 20001
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Message

From: Amy Harder [amy@axios.com]
Sent: 1/7/2019 12:29:26 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Nine energy and climate issues to watch in 2019

Nine energy and climate issues to watch in 2019

View this email in your browser

Happy 2019! Here is my first column of the year: http://axios.link/D9up

What are you watching and think I should be? I'm always interested in hearing

more ideas!

Plus: I have the exclusive on former Republican. Rep. Carlos Curbelo joining Columbia University's energy think tank.

Cheers,

Amy

COLUMN / HARDER LINE

Nine energy and climate issues to watch in 2019

From Washington D.C. to down under, energy and climate are hotter topics this year than they have been in some time. Here's what I'm watching this year.

1. Climate politics

After taking a backseat on Washington's priority list for the past decade, expect climate and energy policy to be in the limelight with the start of Congress and 2020 presidential campaign. The combo of President Trump denouncing climate change and the urgency of it increasing has made it more politically relevant.

- Democrats have created a special committee to focus on climate change, which could likely include consideration of a progressive "Green New Deal" policy championed by Rep. Alexandria Ocasio-Cortez.
- Some likely Democratic candidates for president have said they will emphasize it on the campaign trail, given the stark difference between them and Trump.
- Big oil and gas companies are facing increased pressure on climate change. I'll be watching to see to what extent some sever lobbying ties and accelerate investments in other energy technologies.

2. Regulatory lawsuits

Last year, Trump proposed sweeping regulatory rollbacks of most of his predecessor's aggressive environmental agenda — nearly 80 by this New York Times count. This year, we'll see many of these proposals go final — and a mountain of lawsuits swiftly filed by blue states, particularly California and New York, and other parties.

3. Ailing coal and nuclear

Trump's promise to keep open economically struggling coal and nuclear plants hasn't translated into action after more than a year.

- Unlike coal plants, which shut down at a near record rate in 2018, several states have subsidized nuclear plants. Expect more debate this year.
- One notable development: The iconic Three Mile Island nuclear plant in Pennsylvania, site of America's worst nuclear-energy accident 40 years ago, is slated to shut down this fall absent government support.

4. Protectionist spillover

Trump's trade war with China hit full force last year, and now we're seeing the disparate impacts. I'll be watching to see if this escalates, dissipates or plateaus. It matters a lot to energy because:

- Exports of oil and liquified natural gas to China dropped last year, according to the U.S. Energy Information Administration.
- TerraPower, a nuclear-energy company founded by Bill Gates, said late last month his company is unlikely to follow through on building a demonstration reactor in China largely because of the Trump administration's crackdown on the country.

5. Carbon taxes

Canada, which implemented a nationwide carbon tax January 1, will be an important test case for carbon taxes after opposition elsewhere, including Washington state. This could become an issue in Prime Minister Justin Trudeau's reelection campaign this year.

An advocacy campaign for a federal U.S. carbon tax continues to grow, despite the low chances Washington will seriously consider it any time soon. The push has received funding from two big oil U.S.-based oil companies. I'll be watching to see if others join.

6. Oil-demand levers

I'm watching two, one high-profile and one less so:

- Electric vehicles: We've seen a lot of projections about the emergence of electric cars over internal combustion engines, including goals to ban oil-fueled engines in several nations and cities. I'll be monitoring whether we start to see policies making such goals a reality.
- Plastics: Last year we saw a sharp spike in awareness around plastic pollution. That's running headfirst into another trend: Oil and gas producers eyeing petrochemicals — used to make a range of plastic products — as a growth area.

7. Oil prices' wild ride

After 2018's volatile ups and downs — accentuated by sporadic Trump tweets — oil is likely set for another tumultuous year. If prices rise as we get closer to the presidential race, expect Trump's interest and activity into this area to rise accordingly.

8. Growing climate disconnect

At a high-profile United Nations summit in September, nations will be expected to say what they have done or plan to do to ramp up their commitments to the 2015 Paris Climate Agreement — despite little progress on current goals. That urgency is a stark contrast with the Trump administration promising to withdraw from the accord.

9. Australia and Brazil election consequences

Brazil's new president, Jair Bolsonaro, has pulled back from his promise to withdraw from the Paris deal, but:

- I'll be looking to see to what extent Bolsonaro sides with Trump and pushes for further development of the Amazon rainforest, whose trees are key to sucking up global carbon dioxide emissions.

An Australian government official joined the Trump administration's fossil-fuel event at a climate conference last month in Poland, to the surprise of many.

- Climate and energy policies — often eerily similar to those here in America — have been at the center of the last several prime minister elections down under. Expect these issues, including electric reliability and climate change, to be issues in the next Australian prime minister election this spring.

What are you watching this year? Email me at amy@axios.com.

Amy
energy reporter, Axios
202.906.9629
@AmyAHarder

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Message

From: Qlik Webinars [qlikwebinars@qlik.com]
Sent: 1/3/2019 4:36:30 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] Webinar: 2019's top BI Trends

Qlik LEAD WITH DATA

WEBINAR

Top BI Trends 2019: The Dawn of Postmodern Analytics

Tuesday, 15 January 2019
1:00 PM (EST) / 10:00 AM (PDT)

REGISTER

Top BI Trends 2019: The Dawn of Postmodern Analytics

Where will BI go next – and what should you be focusing on in your organization? The new year will see the emergence of big changes to key areas of analytics, including infrastructure, service delivery, performance, data storytelling, and more.

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- Rising trends in infrastructure, service delivery, and data management
- What postmodern analytics will look like – and why we need it now

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Tuesday, 15 January 2019 at 1:00 PM (EST) / 10:00 AM (PDT)

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Webinar Speaker

Dan Sommer
Senior Director, Market Intelligence Lead
Qlik

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From: Lyons, Troy [lyons.troy@epa.gov]
Sent: 1/4/2019 5:32:34 PM
To: Leggett, Matt (EPW) [Matt_Leggett@epw.senate.gov]
CC: Palich, Christian [palich.christian@epa.gov]; Clifford, Brian (EPW) [Brian_Clifford@epw.senate.gov]; Russell, Richard (EPW) [Richard_Russell@epw.senate.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: Wheeler nom

We are pushing them to get it out today.

Sent from my iPhone

On Jan 4, 2019, at 11:51 AM, Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov> wrote:

> Troy,
>
> Any updates on the Wheeler nomination? Did the White House send it? I'm hearing the Senate didn't receive any nominations today.
>
> Best,
>
> Matt
>
> **Matt Leggett**
> Chief Counsel
> (202) 224-9797
> --
> U.S. Senate Committee on Environment and Public Works
> Senator John Barrasso, Chairman

Message

From: Bloomberg Government [bbg_gov@info.bgov.com]
Sent: 1/7/2019 12:04:34 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Top Technology Headlines to Kick Off 2019

Bloomberg Government Technocrat

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What's New This Week:

In the Year 2019...

Remember when the movies promised us we'd be accustomed to advanced technology like flying cars by 2019 for those of you still allowed to check your government email, does 2019 feel all that advanced? The year has g to a shaky start for the federal government, which continues to deal with a partial shutdown and its side effects. federal employees union filed a lawsuit last week against the Trump administration, claiming more than 400,00 members have been forced to work without pay.

The shutdown also has serious implications for shared services providers that are waiting to be funded. They a operating common systems—such as payroll and property management—using fees from agencies, according report. The bad news for unfunded agencies: they won't be able to access those services once that money run

But agencies must carry on…

In late December, the Defense Department issued a request for information, seeking vendors skilled in Agile m and tools to continuously deliver new software. The DOD expressed a need for partners that can take over management of its latest IT system, which is designed to streamline background investigations and reduce the backlog of security clearance applications. BGOV's Chris Cornillie explains more in this week's exclusive story.

The new Pentagon system will take over the clearance process from the Office of Personnel Management's Na Background Investigations Bureau, which has stated that it's working "daily and almost hourly" with the DOD ar Defense Security Service to prepare for the transfer of the government's security clearance portfolio. Director o defense intelligence Garry Reid cited a need for merger and integration experts to help with the transfer, which expected to take a year.

January is a month of resolutions, as well as reflections on the past year and the year ahead. While it's tough to exactly what 2019 will hold for federal tech, industry leaders have a few good hunches. Nextgov put together a

of specific initiatives taking shape this year. You can check it out here. Elderly members of Congress could use list to get up to date on current technologies, given all the difficulties they've had understanding life in the digita

One more thing … here are some headlines you may have missed over the holidays. Okay, keep reading for ot important news in federal IT below.

Free Live Webcast

Explore Blockchain's Potential For Public-Private Initiatives

Join BGOV and C_TEC for a free webinar on lessons learned from blockchain innovators in government ar industry. Hear about how these two sectors work together to improve the delivery of public services, and le about how blockchain advances efficiency and security along with significant challenges to mitigate.

Click here to view our speaker lineup, agenda- and to register.

This free 60-minute webinar will cover:

- The most promising areas for public sector blockchain use
- Opportunities and challenges in leveraging private sector blockchain expertise
- How the U.S. compares to international public-private blockchain collaborations
- Best practices for building successful blockchain partnerships

Get Smart

"Our progress to date would not have been possible without the robust continuous evaluation and auto records capabilities built over the past three years."
—Garry Reid, director of defense intelligence at the Department of Defense

Read more in this week's exclusive from Bloomberg Government.

Eye on Security

Biggest Questions for Cybersecurity

The White House plans to be more aggressive in cyberspace this year as President Donald Trump announced launch more offensive hacking operations against foreign adversaries. Here are four important questions for the cybersecurity community in 2019. Read more.

Inside New Health Care Cyber Practices

The Department of Health and Human Services released voluntary cybersecurity guidance for the health care i to help organizations mitigate cyber threats such as phishing and ransomware. The report involved roughly 150 cybersecurity and health care experts. Read more.

Strategy & Leadership

DOD CIO Gets Extra Responsibilities
The Defense Department's CIO will have several additional authorities thanks to new legal provisions that Con established for 2019. While future DOD CIOs will have to be appointed and confirmed, the law allows incumber Dana Deasy to continue to serve without a confirmation process. Read more.

Guide to Navigating Tech in Congress
The legislative branch has unique and fragmented rules that can keep even the most experienced tech vendors the loop. Bipartisan advocacy group Future Congress just launched a guide for vendors and civic hackers that build tech for the legislative branch. Read more.

Free Live Webcast

Hear BGOV's 2020 Federal IT Budget Breakdown and Explore How the DoD Used Mode Innovation To Improve Systems Management

Register today and join Bloomberg Government on February 12th for its 2020 Federal IT Budget Breakdow BGOV's federal market analyst, Chris Cornillie, will provide an overview of the 2020 information technology budget; discuss agency-by-agency spending in key markets, including cloud and cybersecurity; and highlig some of the top upcoming opportunities for federal contractors.

Following BGOV's update, Red Hat and Amazon Web Services will look at innovative applications and clou services that can better manage complex projects. Recently, a department at the DoD used DevOps methodologies to manage a research and development effort with ease and efficiency.

Sign up today to learn:

- How using the OpenShift Container Platform can produce instant benefits
- How the DoD is using Cloud Regions to deliver application transformations
- How OpenShift and automated software can help to implement an effective DevOps culture

Sign up today to stream the live webcast.

Next Tech

More Agencies Embracing Automation
Federal agencies are warming up to the idea of robotic process automation, or RPA. The General Services Administration has been automating some of its processes with six active bots. But this year the agency plans t implement RPA on "higher value" applications. Read more.

USDOT Invests in Driverless Car Programs

The Department of Transportation wants to ensure the safe integration of autonomous vehicles into U.S. street transportation systems. So, the agency is contributing up to $60 million in grant funding to public entities interes leading AV research and development. Read more.

Regulation Nation

Government Tech Bills That Never Made It

As the 115th Congress ended, hundreds of unpassed bills were put to rest. Here's a list of federal tech and cyb related proposals that never got past lawmakers. Among them is the Artificial Intelligence in Government Act, w focused on hiring AI experts to help the feds adopt AI. Read more.

Why NSF Needs Tighter Mobile Controls

The National Science Foundation should have stricter policies for enforcing rules related to the use of agency-c mobile phones and tablets, according to a report by its inspector general. The report found that some were inco identified as personal devices. Read more.

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Message

From: Brian Wynne Ex. 6
Sent: 12/31/2018 5:32:03 PM
To: Wheeler, Andrew [wheeler.andrew@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Drew Wynne Tomorrow

I'm holding up my ban. Tomorrow we mobilize to verify. Hundreds of us will be checking in on retailers across the country to make sure promises are kept.

The next mobilization will be to ensure that your nomination is held up until action on Methylene Chloride is taken. This was a commitment from your agency in May. I will be at the confirmation hearing, we will be the face of the resistance.

Good luck! And happy New Year.

Brian Wynne

Sent from my iPhone

Message

From: ECOS [ecos@ecos.org]
Sent: 1/4/2019 8:16:47 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: ECOS Welcomes New Members, Executive Director, & More

ECOS Welcomes New Members, Executive Director, & More

ECOSWIRE | Vol. 21 No. 01

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ECOSWIRE

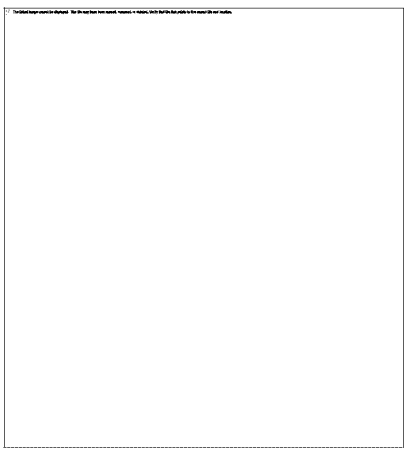
Friday, January 4, 2019

Vol. 21 No. 01

Table of Contents

- Message from New ECOS Executive Director Don Welsh
- Partial Federal Government Shutdown Continues
- Senate Confirms Dunn and CEQ Lead
- ECOS Member Transitions
- State News You Can Use
- Need-to-Know News in Water & Chemicals and Emerging Contaminants
- Upcoming Events

Message from New ECOS Executive Director Don Welsh



I am happy to be on board as the new Executive Director. I look forward to serving the officers and members of ECOS as you work to improve the nation's environmental

protection system. I already can call many of you friends, and I hope to get to know the rest of you soon. Feel free to contact me for any help you need from ECOS, or just to say hello. I can be reached at dwelsh@ecos.org or 202-266-4929.

Partial Federal Government Shutdown Continues

Today marks two weeks since about a quarter of the federal government's funding lapsed. While some affected agencies like U.S. EPA were able to stay open past the funding lapse with carryover money, that funding has run out for most. EPA's funding ran out and the agency shut down as of midnight, Friday, December 28, 2018.

While EPA is closed for regular business and most employees are on furlough, key employees in headquarters and regional offices are still at work to address essential functions. If your agency needs help reaching someone at EPA on a crucial issue, please contact ECOS staff. Additionally, as the partial shutdown lengthens, please share information with ECOS staff on how it affects your agency's work.

The 116th Congress convened for the first time on January 3. They have not yet reached an agreement between the House of Representatives, the Senate, and the President to fund the closed portions of the government. [Welsh, Hanson]

Senate Confirms Dunn and CEQ Lead

During the final hours of the 115th Congress on January 2, the Senate confirmed former ECOS Executive Director and General Counsel Alexandra Dapolito Dunn to lead U.S. EPA's Office of Chemical Safety and Pollution Prevention as its Assistant Administrator. Dunn will leave her position as Regional Administrator for EPA Region 1 to head the chemicals office.

The Senate also approved Mary Neumayr to lead the White House Council on

Environmental Quality (CEQ). Neumayr has been serving as Chief of Staff at CEQ for nearly two years. She has previous experience working for the House Energy and Commerce Committee, the U.S. Department of Energy, and the U.S. Department of Justice. [Hanson]

ECOS Member Transitions

New Members Named in Four States

New Maine DEP Commissioner Comes from Attorney General's Office

This week, Maine's new governor, Janet Mills, announced that she has selected Jerry Reid as her choice to be the Commissioner of the Maine Department of Environmental Protection (DEP). Reid currently serves as Chief of the Natural Resources Division in the Maine Attorney General's Office. He has held this position since 2007 and has more than two decades of experience in the Office. He has degrees from Wesleyan University and the University of Maine School of Law. His nomination will have to be confirmed by the Maine legislature.

Clean Energy Leader Takes the Helm in Michigan

Liesl Eichler Clark was appointed the Director of the Michigan Department of Environmental Quality (DEQ) by Governor Gretchen Whitmer on January 1. Clark left her position as co-founder and partner of 5 Lakes Energy, a clean energy policy consulting firm, to join DEQ. After serving as Deputy Director of Energy Programs at the Michigan Department of Energy, Labor, and Economic Growth under a previous governor, Clark helped create and lead the Michigan Energy Innovation Business Council. Clark holds a Master's degree and a Bachelor of Arts degree from Michigan State University.

Former Deputy Commissioner to Lead Connecticut DEEP

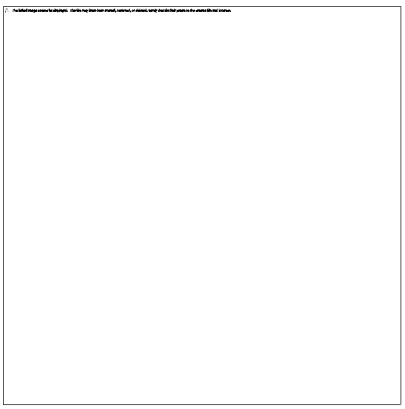
Last week, Connecticut governor-elect Ned Lamont nominated Katie Dykes to be Commissioner of the Connecticut Department of Energy and Environmental Protection (DEEP). Dykes, currently chair of Connecticut's Public Utilities Regulatory Authority,

served as DEEP's deputy commissioner from 2012 to 2016. In previous positions, Dykes has been deputy general counsel for the White House Council on Environmental Quality, worked at the U.S. Department of Energy, and chaired the board of the Regional Greenhouse Gas Initiative. She holds undergraduate and law degrees from Yale University. Her nomination will have to be approved by the state legislature.

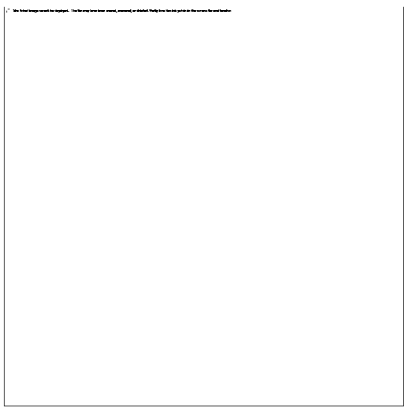
Corporate and Public Affairs Executive Tapped for Minnesota PCA

This week, Minnesota Governor-elect Tim Walz announced his selection of Laura Bishop as Commissioner of the Minnesota Pollution Control Agency (PCA). In the corporate sector, Bishop recently served as Chief Sustainability and Corporate Responsibility Officer for Best Buy Co., Inc. Prior to that she held numerous positions in the public sector including roles with the State of Minnesota, the White House, the U.S. Department of Education, and the U.S. State Department. Bishop holds a Bachelor's degree from the University of Wisconsin - Madison and a Master's degree from the University of Michigan.

Two ECOS Past Presidents Retiring from State Service



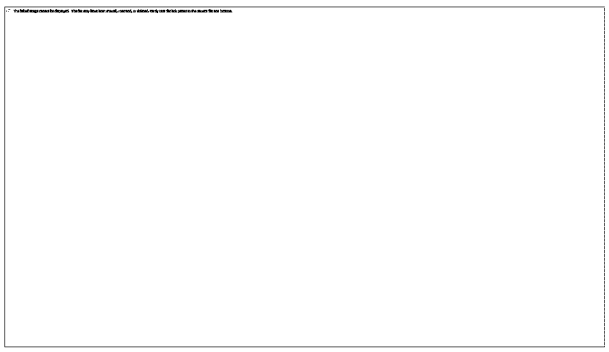
Martha Rudolph



John Stine

Next week, both John Stine of Minnesota and Martha Rudolph of Colorado are retiring from their positions leading their state's environmental agencies. Stine, ECOS President in 2016-2017, led ECOS during the development of the Cooperative Federalism 2.0 initiative and was a leading force behind ECOSResults. Rudolph served as ECOS President in 2015-2016 and was a driver for the development of ECOS' first Strategic Plan and worked to connect state environmental and health agencies through efforts like the ECOS-ASTHO-

EPA Memorandum of Agreement on Public and Environmental Health Initiatives. With nearly 20 years experience leading state environmental agencies and being involved in ECOS between them, they will be missed by the members and staff of ECOS but their legacy will be felt for years to come. [Hanson]



State News You Can Use

Washington Awards its First VW Settlement Grants

New York Recommends Lowest Limits on PFAS, 1,4 Dioxane

Texas Identifies Business Improvements for Legislators

Florida Park Fit Initiative Promotes Outdoor Activity in State Parks

Cleanup of Montana Superfund Site Nears Completion

Need-to-Know News in Water & Chemicals and Emerging Contaminants

Deadline Extended for WIIN Grant

Area of Focus: *Water*

U.S. EPA has extended the deadline for states to submit notices of intent to participate in the new Water Infrastructure Improvement for the Nation Act (WIIN) grant program to **February 11**. This new $20 million grant program supports voluntary testing for lead in drinking water in schools and childcare facilities.

State governors or designees interested in the program can email their notice of intent to participate or any questions to WIINDrinkingwatergrants@epa.gov. Below is an example email:

On behalf of the state/territory of _____, I submit this email as notice of intent to participate in the Lead Testing in School and Child Care Drinking Water Grant program as part of the Water Infrastructure Improvement for the Nation Act. The (insert the State/territory Department/agency here) will serve as the lead state/territory agency for this program.

Please send any following up information pertaining to the grant program to the following:

Name:

Phone number:

Email:

Mailing address:

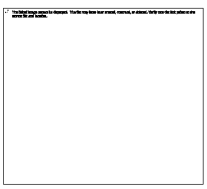
To learn more about the WIIN grant program, visit www.epa.gov/safewater/grants. [Swanson]

MI Science Panel Releases Report on Managing PFAS

Area of Focus: *Chemicals and Emerging Contaminants*

On December 18, the Michigan PFAS Action Response Team (MPART) published findings of the independent PFAS Science Advisory Committee. The committee, appointed in early 2018 by Governor Rick Snyder, examined health advisory levels, adverse health outcomes, remediation and mitigation aspects, and environmental exposure pathways of PFAS, providing the state with a better understanding of available toxicological and environmental health science and evidence-based recommendations to guide Michigan's response to these contaminants. The report, which focuses on PFOA and PFOS, provides a general understanding of human health risks associated with PFAS and outlines 17 recommendations to the state in its ongoing response to PFAS contamination. Michigan may choose to use this information, as well as federal guidance and regional and regulatory considerations, to target their future response efforts.

See the full report here. [Longsworth]



Upcoming Events

ECOS PFAS Caucus Call

ECOS will hold its second PFAS Caucus call on **January 15 at 3-4 p.m. Eastern**. The call will focus on the results and next steps of the PFAS gap analysis state activities assessment. For more information or to be included in future Caucus distributions, email Sarah Grace Longsworth of ECOS. [Longsworth]

U.S. EPA on PFAS Treatment of Small Systems

U.S. EPA's Office of Research and Development will host its small systems monthly webinar on **January 29 at 2-3 p.m. Eastern** to discuss treatment technologies for removing chemicals of concern, specifically PFAS, cyanotoxins, perchlorate, and 1,4 dioxane. More information on the webinar and registration is here. [Longsworth]

U.S. EPA and Army Share Opportunities for WOTUS Engagement

The U.S. EPA and Army Corps of Engineers are hosting several opportunities for state input on the proposed Waters of the U.S. Rule as part of the public review process. The focus of the state discussion sessions will be to hear the input of state officials on the proposed new definition and discuss implementation considerations.

State Meetings:

The EPA and Army will be hosting a half-day discussion forum for state officials at the following locations: Kansas City, Kansas, on **January 22**; Santa Fe, New Mexico, on **February 6**; and Savannah, Georgia, on **February 20**. State officials who would like to attend any of these meetings should send an email to wotus-outreach@epa.gov to receive meeting details and registration information. The state meetings will coincide with similar meetings with tribal representatives. State officials are also welcome and encouraged to attend the public events described below.

Public Informational Webcast & Public Listening Session:

The agencies have also scheduled a public webcast to help explain key elements of the proposed "Revised Definition of Waters of the United States" on **January 10 at 2-3 p.m. Eastern**. The entire webcast will be posted on the EPA WOTUS website. Registration is limited to 2,000 attendees, so interested parties are encouraged to view with colleagues. For additional information and to register, please visit here.

In addition, the agencies have scheduled a public listening session on the proposed rule on **January 23 at 1-8 p.m. Central** (coinciding with the tribal and state discussion forums) at the Reardon Convention Center in Kansas City, Kansas. The last day to pre-register to speak at the hearing will be **January 17.** Additionally, requests to speak will be taken the day of the hearing at the hearing registration desk, pending availability. For additional information and to register, please visit here.

The EPA and Army plan to seek additional opportunities to engage with states as the public comment period progresses. [Piper]

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From: Leggett, Matt (EPW) [Matt_Leggett@epw.senate.gov]
Sent: 1/9/2019 5:54:25 PM
To: Lyons, Troy [lyons.troy@epa.gov]
CC: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: OGE

Will do.

Sent from my iPhone

> On Jan 9, 2019, at 12:46 PM, Lyons, Troy <lyons.troy@epa.gov> wrote:
>
> If you do not have what you need within the hour, please let us know
>
> -----Original Message-----
> From: Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov>
> Sent: Wednesday, January 9, 2019 12:42 PM
> To: Lyons, Troy <lyons.troy@epa.gov>
> Cc: Jackson, Ryan <jackson.ryan@epa.gov>
> Subject: Re: OGE
>
> Great. Thank you.
>
> Sent from my iPhone
>
>> On Jan 9, 2019, at 12:35 PM, Lyons, Troy <lyons.troy@epa.gov> wrote:
>>
>>
>> Justina has just certified AW's forms. OGE knows to expedite to you all.
>>
>>
>> Sent from my iPhone

Message

From: Russell, Richard (EPW) [Richard_Russell@epw.senate.gov]
Sent: 1/9/2019 8:59:18 PM
To: Lyons, Troy [lyons.troy@epa.gov]; Palich, Christian [palich.christian@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: FW: NOTICE: Senate Committee on Environment and Public Works hearing entitled, "Hearing on the Nomination of Andrew Wheeler to be Administrator of the Environmental Protection Agency," Wednesday, January 16, 2019 at 10:00 AM

Importance: High

Richard M. Russell
Staff Director
Senate Committee on Environment and Public Works
202 224-6176

From: Trenti, Beth (EPW) <Beth_Trenti@epw.senate.gov>
Sent: Wednesday, January 9, 2019 3:49 PM
To: Balash, Joe (Sullivan) <Joe_Balash@sullivan.senate.gov>; Brubaker, Joel (Capito) <Joel_Brubaker@capito.senate.gov>; Goeas, Lisa (Ernst) <Lisa_Goeas@ernst.senate.gov>; Hack, Joe (Fischer) <Joe_Hack@fischer.senate.gov>; Jackson, Ryan (Inhofe) <Ryan_Jackson@inhofe.senate.gov>; Kunsman, Dan (Barrasso) <Dan_Kunsman@Barrasso.senate.gov>; Skjonsberg, Rob (Rounds) <Rob_Skjonsberg@rounds.senate.gov>; Tolar, Helen (Boozman) <Helen_Tolar@boozman.senate.gov>; DailyDigest <SecretaryDailyDigest@routing.senate.gov>; Gross, Amy (SAA) <Amy_Gross@saa.senate.gov>; Johnston, Joseph (Secretary) <Joseph_Johnston@sec.senate.gov>; Senate RTVG (SAA) <SenateRTVG@saa.senate.gov>; Tratos, Elizabeth (Secretary) <Elizabeth_Tratos@sec.senate.gov>; Adhar, Radha (Duckworth) <Radha_Adhar@duckworth.senate.gov>; Bansal, Rajan (Duckworth) <Rajan_Bansal@duckworth.senate.gov>; Barry, Giselle (Markey) <Giselle_Barry@markey.senate.gov>; Baugh, Jordan (Gillibrand) <Jordan_Baugh@gillibrand.senate.gov>; Beaton, Alex (Budget) <Alex_Beaton@budget.senate.gov>; Becerra, Dan (Merkley) <Dan_Becerra@merkley.senate.gov>; Becker, Kelsey (Duckworth) <Kelsey_Becker@duckworth.senate.gov>; Binsted, Kim (Whitehouse) <Kim_Binsted@whitehouse.senate.gov>; Bustamante, Michele (Markey) <Michele_Bustamante@markey.senate.gov>; Compton, Caryn (Sanders) <Caryn_Compton@sanders.senate.gov>; Conklin, Meghan (Van Hollen) <Meghan_Conklin@vanhollen.senate.gov>; Copeland, Mark (Duckworth) <Mark_Copeland@duckworth.senate.gov>; Deveny, Adrian (Merkley) <Adrian_Deveny@merkley.senate.gov>; Driscoll, Laura (Gillibrand) <Laura_Driscoll@gillibrand.senate.gov>; Dudis, Dan (Whitehouse) <Dan_Dudis@whitehouse.senate.gov>; Edwards, Ryan (Whitehouse) <Ryan_Edwards@whitehouse.senate.gov>; Frede, Shannon (Cardin) <Shannon_Frede@cardin.senate.gov>; Frey, Bridgett (Van Hollen) <Bridgett_Frey@vanhollen.senate.gov>; Gaeta, Joe (Whitehouse) <Joe_Gaeta@whitehouse.senate.gov>; Garmisa, Ben (Duckworth) <Ben_Garmisa@duckworth.senate.gov>; Goldner, Aaron (Whitehouse) <Aaron_Goldner@whitehouse.senate.gov>; Goode, Eric (Duckworth) <Eric_Goode@duckworth.senate.gov>; Gray, Morgan (Markey) <Morgan_Gray@markey.senate.gov>; Greene, Daniel (Markey) <Daniel_Greene@markey.senate.gov>; Griffith, Lindsey (Markey) <Lindsey_Griffith@markey.senate.gov>; Harrelson, Jill (Budget) <Jill_Harrelson@budget.senate.gov>; Haynie, Deborah (Van Hollen) <Deborah_Haynie@vanhollen.senate.gov>; Hinch, Ethan (Sanders) <Ethan_Hinch@sanders.senate.gov>; Hollers, Logan (Merkley) <Logan_Hollers@merkley.senate.gov>; Jacobs, Ann (Cardin) <Ann_Jacobs@cardin.senate.gov>; Jamison, Brooke (Gillibrand) <Brooke_Jamison@gillibrand.senate.gov>; Joseph, Avenel (Markey) <Avenel_Joseph@markey.senate.gov>; Leibman, Adena (Whitehouse) <Adena_Leibman@whitehouse.senate.gov>; Maxwell, Gray (Cardin) <Gray_Maxwell@cardin.senate.gov>; Menard, Katrina (Sanders) <Katrina_Menard@sanders.senate.gov>; Mitnick, Rachel (Whitehouse) <Rachel_Mitnick@whitehouse.senate.gov>; Rampone, Emily (Budget) <Emily_Rampone@budget.senate.gov>; Rhodeside, Benjamin (Duckworth) <Benjamin_Rhodeside@duckworth.senate.gov>; Richer, Claire (Markey) <Claire_Richer@markey.senate.gov>; Schenning, Sarah (Van Hollen) <Sarah_Schenning@vanhollen.senate.gov>; Slevin, Chris (Booker)

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Cc: Russell, Richard (EPW) <Richard_Russell@epw.senate.gov>; Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov>; Clifford, Brian (EPW) <Brian_Clifford@epw.senate.gov>
Subject: NOTICE: Senate Committee on Environment and Public Works hearing entitled, "Hearing on the Nomination of Andrew Wheeler to be Administrator of the Environmental Protection Agency," Wednesday, January 16, 2019 at 10:00 AM
Importance: High

SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

HEARING NOTICE

Senator:

The Senate Committee on Environment and Public Works will hold a hearing entitled, *"Hearing on the Nomination of Andrew Wheeler to be Administrator of the Environmental Protection Agency."*

WEDNESDAY, January 16, 2019
10:00 AM
Room 406 of the Dirksen Senate Office Building

By Order of the Chairman
John Barrasso, M. D.

Elizabeth Trenti | Director of Operations
Senate Committee on Environment & Public Works
(o) 202 . 224 . 6691

Message

From: Benjamin.Dunham@hklaw.com [Benjamin.Dunham@hklaw.com]
Sent: 1/8/2019 8:15:35 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: RE: Following up on Wheeler speaking invitation

Awesome. Thanks man! You're the best.

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Tuesday, January 08, 2019 2:49 PM
To: Dunham, Benjamin E (WAS - X75189) <Benjamin.Dunham@hklaw.com>
Subject: RE: Following up on Wheeler speaking invitation

No, it is definitely on our calendar. Maybe we were waiting since it was May. I will check , but Andrew has signed off on this.

Yeah, always a leaker in the room. :)

From: Benjamin.Dunham@hklaw.com [mailto:Benjamin.Dunham@hklaw.com]
Sent: Tuesday, January 8, 2019 1:58 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Following up on Wheeler speaking invitation

Ryan,
I hope married life is treating you well. I wish Politico covered my wedding!

When I brought in the Household and Commercial Products Association in October, the CEO invited Wheeler to speak at HCPA's mid-year meeting at the Mayflower in May. We followed up with a written invitation, which is attached.

I know yall book Wheeler's schedule months in advance, so I just wanted to follow up and make sure this didn't fall through the cracks.

Let me know if there's anything I can do to help.

See you soon,

Ben Dunham | Holland & Knight
Sr Policy Advisor
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone 202.329.2708 | Fax 202.955.5564
benjamin.dunham@hklaw.com | www.hklaw.com

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Message

From: ClearPath Action [info@clearpathaction.org]
Sent: 3/29/2019 2:08:49 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: The Rundown - Amplified Energy Innovation Debate

|MC:SUBJECT|

Welcome to your Friday Rundown, for the week ending March 29. I'm your driver,

ClearPath Communications Director Darren Goode.

Was this email forwarded to you? **Sign up here**.

As always, thanks for reading.

BIPARTISAN SENATE ADVANCED NUCLEAR BLUEPRINT INTRODUCED

Senate Energy and Natural Resources Chairman Lisa Murkowski and Sen. Cory Booker (D-N.J.) **introduced the Nuclear Energy Leadership Act,** a bipartisan and comprehensive blueprint for bolstering the next-generation of the nation's largest source of reliable

and carbon-free power. NELA is backed by 13 additional original cosponsors and a **broad range of advanced nuclear advocates**, including ClearPath Action.

NELA addresses the lack of aggressive milestones for government-led nuclear energy R&D and policy aimed at accelerating the commercialization of cutting-edge new American nuclear power technologies.

Original co-sponsors are Energy and Water Appropriations Subcommittee Chairman Lamar Alexander (R-Tenn.), Energy and Natural Resources ranking member Joe Manchin (D-W.Va.), Idaho Republicans James Risch and Mike Crapo, Sheldon Whitehouse (D-R.I.), Cory Gardner (R-Colo.), Chris Coons (D-Del.), Dan Sullivan (R-Alaska), Tammy Duckworth (D-Ill.), Lindsey Graham (R-S.C.), Michael Bennet (D-Colo.), Shelley Moore Capito (R-W.Va.) and Rob Portman (R-Ohio).

ClearPath **joined a coalition of eight other organizations** in applauding the introduction: Third Way, Nuclear Innovation Alliance, Center for Climate and Energy Solutions, BPC Action, American Council for Capital Formation, Clean Air Task Force, CRES Forum and the American Nuclear Society.

WHAT'S JAY TWEETING?

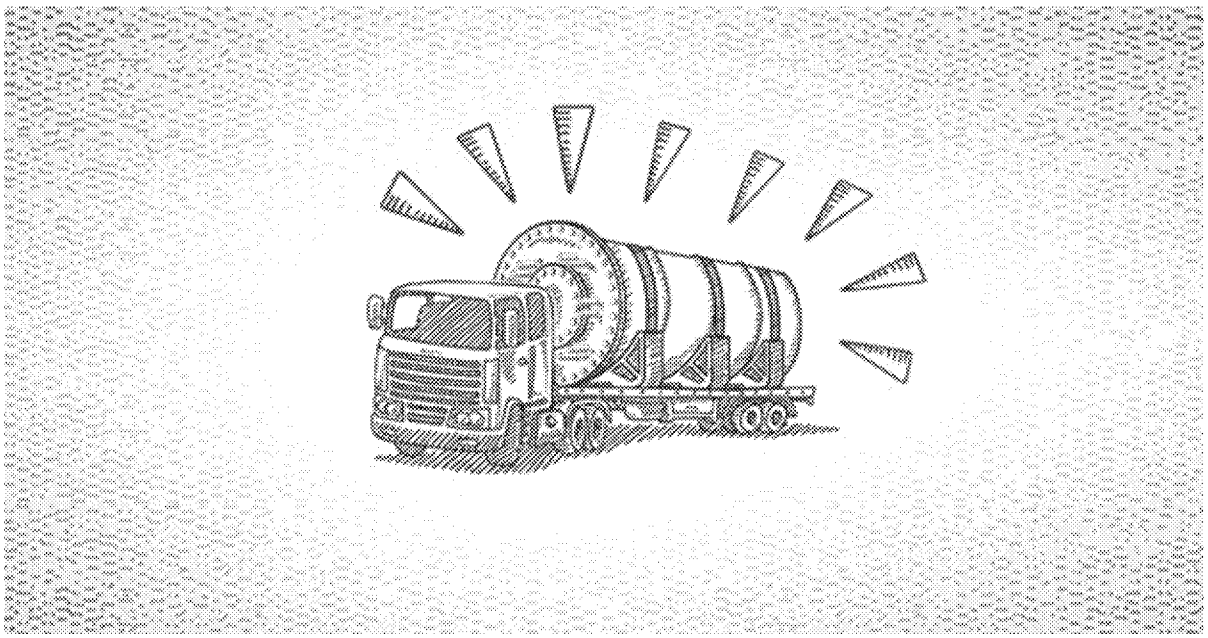
Jay Faison @JayFaison1 · Mar 27

As @lisamurkowski said on the Senate floor yesterday, it's important not to distract from working collaboratively on pragmatic, practical #climate solutions. Her #NELA is a great example of doing just that!

ClearPath Action @ClearPathAction

ClearPath joined 8 other advanced nuclear advocates in applauding today's #NELA intro, led by @lisamurkowski and @SenBooker! The coalition: @ThirdWayEnergy, @C2ES_org, @BPCAction, @ACCFmedia, …

Show this thread



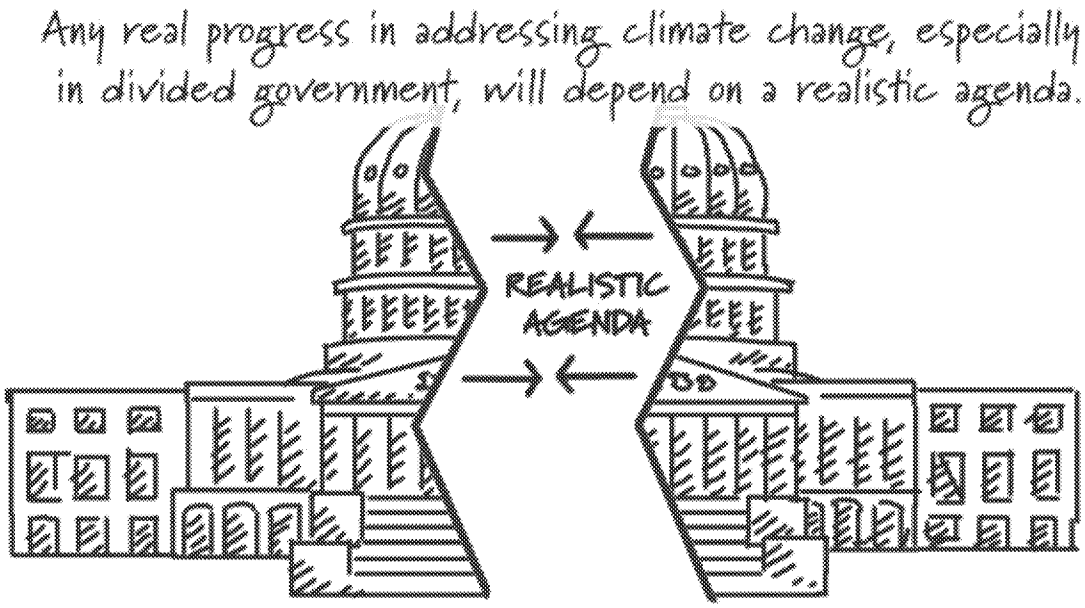
RICH'S TAKE: WHY NELA SHOULD BE CLOSELY TRACKED

In his **latest whiteboard video**, ClearPath Executive Director Rich Powell walks through the main details of NELA and why it is worth closely tracking.

That includes establishing specific goals to align federal, lab and private-sector efforts; developing a 10-year strategic plan that supports advanced nuclear R&D goals; providing initial domestic supplies of the fuel needed for many U.S. advanced reactor designs; a reliable testing ground for advanced fuels and materials; and nuclear engineering scholarships to maintain a robust pipeline of nuclear engineering talent.

RELATED NEWS

The Department of Energy **announced** recipients of $19 million in awards as part of a larger effort to help domestic advanced nuclear technology projects. This was the fourth round of funding – totaling $117 million – that has been awarded so far under this effort.



REPUBLICANS TOUT INNOVATION TO COMBAT CLIMATE CHANGE

Surrounding this week's failed Senate vote on the Green New Deal, Republicans took to the floor to highlight practical measure to address climate change and expand clean energy that could attract (and has already attracted) bipartisan backing.

"There are some policies that both parties can support that I think can make a real difference in real time," **Murkowski said Tuesday**, ahead of the official NELA introduction the following day. "We're not in a situation, in a place, where we're doing nothing."

Last Congress approved legislation expanding the 45Q carbon capture and 45J advanced nuclear incentives, increasing (and in some cases giving record) funding for DOE cleantech R&D, as well as spurring hydropower. "That was just last year in terms of those policies that we put in place that are moving us forward in the right direction," Murkowski said. "It is important for us around here to make sure that we don't distract

from those pragmatic, practical solutions, that we don't amp the rhetoric up so high that we can't get ourselves to the place where we can work cooperatively, collaboratively, to get to these solutions."

Senate Environment and Public Works Chairman John Barrasso (R-Wyo.) also promised to work with Democrats to "pass meaningful legislation," noting past and present bipartisan carbon capture and advanced nuclear work.

Sen. John Cornyn (R-Texas) singled out the **NET Power zero-emission natural gas demonstration project** near Houston as an example that "you can be pro-energy, pro-innovation, pro-growth and pro-environment."

Alexander **laid out his "New Manhattan Project for Clean Energy"**, a five-year project with 10 "grand challenges" that will "use American research and technology to put our country and our world firmly on the path for a cleaner cheaper energy." Among those 10 challenges include building one or more advanced nuclear reactors, more efficient and lower carbon natural gas combustion technologies, carbon capture ("the holy grail of clean energy"), better and grid-scale batteries and doubling energy research funding for DOE's Office of Science and the 17 national labs. "This is a bold agenda and hopefully a bipartisan agenda," Alexander said. His plan **earned bipartisan praise** from Coons and others at a DOE budget hearing in Alexander's subcommittee Wednesday.

RELATED READS

International Energy Agency: Global CO2 hits record in 2018 as energy demand grows

Xcel CEO: We've got to be open to anything in clean energy tech

Scientists: No evidence hydro project disrupts Gulf of Maine food chain

What's next for the Green New Deal? – Pacific Standard magazine

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THE PATH AHEAD

TUESDAY Energy Secretary Rick Perry **testifies** on DOE's budget request at the Senate Energy and Natural Resources Committee.

TUESDAY Senate Environment and Public Works **hearing** on Nuclear Regulatory Commission oversight.

WEDNESDAY Atomic Wings briefing on Capitol Hill co-sponsored by ClearPath and the Department of Energy on "Advanced Nuclear Public Policy Momentum in Congress." Featuring former NRC Commissioner Jeff Merrifield, Senate energy panel nuclear expert Ben Reinke and Clean Air Task Force's Brett Rapal. **RSVP**

THURSDAY ARPA-E Innovation Showcase on the Hill, hosted by the Bipartisan Policy Center's American Energy Innovation Council. ARPA-E Acting Director Chanette Armstrong will give remarks. **RSVP**

MISS A WEEK?

RUNDOWN ARCHIVES

Follow us on Twitter: **@JayFaison1**, **@powellrich**, **@ClearPathAction**

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Clearpath, Inc.
611 Maryland Ave NE
Washington, DC 20002

Message

From: Defense Tech Expos [lrinaldo@cox.net]
Sent: 12/27/2018 7:05:11 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Invitation Federal Small Business Procurement & Tech Plus Expo DC

Invitation Federal Small Business Procurement & Tech Plus Expo DC

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More than 25 exhibitors will demonstrate the latest in energy solutions, cloud technologies, cyber security, Big Data, solar power, disaster recovery, communication technologies, systems integration, wireless, 5G, manufacturers, Hyper Convergence, blockchain, AI. cell phones, greening, network solutions, construction, defense and Homeland Security equipment, engineering, architecture, construction, information technology products, COOP, training, Storage solutions, office automation products, data management, audio and visual equipment, hardware and software, healthcare, hospital applications, medical, software. furniture, office supplies, hospitality and So Much More.

Who will be there?

Most of the Vendors are Small Businesses: 8 (a)'s, Small and Disadvantaged Businesses,

Small and Woman Owned Businesses, Service Disabled Veteran Owned Businesses, Veteran Owned,

Native American Owned, and HUBZones). Some large manufacturers too.

Who should attend?

All Government personnel Everyone, especially: DoD. Civilians, Warfighters, OSDBUs, SADBUs, Small Business Program staff, Program Managers, Project Managers, Engineers, Techs, Scientists, Security,

Contracting Officers, CTOs, CIOs, CXOs, CISSPs, Buyers, purchase card holders, Economists, clerks,

Procurement, IT, Hospital, Medical, Labs, Public Affairs, Public works, SBLOs, PTAC/PTAP, everyone, etc. .

FREE of CHARGE for Government

. Demos!

. Giveaways!

Education and Information!

What: Federal Small Business Procurement and Technology Plus Expo

Where: Holiday Inn Capitol, Congressional Ballroom next to FEMA

550 C Street, SW, Washington, DC 20024

near L'Enfant Metro and Federal Center Metro station

www.wmata.com

When: 2.21.19

Mark your calendar

Time: 9:00 AM - 2:00 PM

Larry Rinaldo

Defense Tech Expos

More information is available from 703-344-8771

Questions/Please RSVP to: LRinaldo@cox.ne t

Bring associates!

Free table for Government OSDBUs and Small Business Program Managers!

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Defense Tech Expos
7630 Provincial Dr Apt 103
McLean, VA 22102-7631

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Want to change how you receive these emails?
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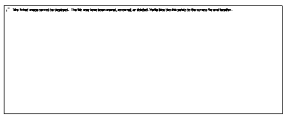
This Tabbed image cannot be displayed. The file may have been moved, renamed, or deleted. Verify that the link points to the correct file and location.

Message

From: Brent Fewell [brent.fewell@earthandwatergroup.com]
Sent: 1/2/2019 8:51:02 PM
To: Dickerson, Aaron [dickerson.aaron@epa.gov]
CC: Eby, Natasha [eby.natasha@epa.gov]; Molina, Michael [molina.michael@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]; Humphreys, Hayly [humphreys.hayly@epa.gov]
Subject: Request for Meeting with NAWC leadership
Attachments: ATT00001.txt

Hi Aaron,

Happy New Year. Wanted to circle back and see if any of the following dates would work for a meeting with Administrator Wheeler and Rob Powelson, CEO of the National Association of Water Companies, along with David Stanton, President of Suez North America's Utility Operations and Federal Services.

February: 8, 18,

March: 1, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 22, 25, 26, 27, 28, 29

Many thanks for your consideration.

Brent

Brent Fewell, Esq. | Earth & Water Law Group
1455 Pennsylvania Ave., NW, Suite 400, Washington, DC 20004
(202) 280-6362 (o) Ex. 6 www.earthandwatergroup.com

Linked

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Message

From: Paul Mercer Ex. 6
Sent: 1/4/2019 7:55:45 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: EPA Region 1 Mercer
Attachments: EPA Mercer.pdf

Mr. Jackson,
I'm sure your extremely busy right now and I understand priorities. Attached please find statement for your review. I received your voice message and will call you ASAP.

Regards,
Paul

EPA Statement 12/19/18

Paul Mercer Ex. 6

Ex. 6

As a graduate of Maine Maritime Academy, working career began traveling the globe as a Marine Engineer aboard US merchant vessels.

Personally witnessed thick foam and pollution in many of our rivers, worked on the Great Lakes at a time when thousands of dead fish floated in Lake Huron and polluted rivers caught on fire in Cleveland. Worked aboard oil tankers when it was legal and standard operations to discharge waste oil, garbage and sewage overboard, anywhere beyond twelve miles of our coast.
Thankfully those practices have all changed and are no longer legal.

Throughout career worked in a field bound by procedures, codes and regulatory requirements. Personnel and environmental safety have been the core of every job. Worked in many of the power plants, mills and manufacturing facilities within EPA Region 1 states and beyond.

Experience with energy and environmental projects include: waste to energy, hospital waste, land spreading of ash, landfill gas, biomass, biofuels, natural gas and LNG and with Best Available Current Technologies (BACT) applications with combustion and emissions. Served as construction manager, project manager, contract administrator and developer of projects all of which had to comply with strict environmental requirements. Testified as an expert witness and approved by the Maine PUC as an independent auditor for Renewable Energy Credit formulas and calculations.

Academically, as Associate Professor and Department Chair introduced courses and programs incorporating environmental engineering and ethics. Developed and conducted seminars such as the one presented to the Air Bureau of MeDEP designed to provide compliance inspectors a better understanding of combustion and its relationship to air emissions.
As a member of the senior leadership team at Maine Maritime Academy led a new and innovative Strategic Planning process presently being implemented. Along with position as Assistant to the President for Sustainability, also served interim positions: Director of Facilities, Vice President of Advancement, Vice President of Operations, and was a key driver in the development of Institutional Research. Promoted an environmental initiative designed to expose and educate students with environmental stewardship.

As commissioner at Maine DEP, worked collaboratively with constituents to promote the needs of the state and its economy with professional and personal ethics, communication and a common sense.

During tenure as Commissioner of Maine DEP and to quote Governor LePage, " Paul's leadership at DEP has had a positive effect on the Agency and the State. Paul has worked collaboratively with businesses and advocates, as well as state and federal agencies, to protect Maine's natural resources while growing our economy. His innovative and balanced approach has helped to move our state forward while ensuring our environment is protected."

As an ERIS Board member and interacting with ORD, promoted the need for ORD research to align with States needs, and for ORD scientists to visit individual states to better understand state needs and resources. These initiatives may have started but need to be prioritized.

Having earned the respect and support of other Region 1 Commissioners provides a unique opportunity to advance common and individual states interests. The natural environment, land, air and water within Region 1 is our most valuable resource. We must protect it, and do so in such a way that we can maintain and support existing business and industry. We must promote and encourage new and innovative businesses and create a sustainable economy.

Will support the mission and vision of EPA while continuing to promote Innovation. Drawing on the resources, expertise and wisdom of a talented and dedicated staff to make informed and transparent decisions. Our goal will continue to be: "the protection and preservation of our greatest resource", for present and future generations.

Honored to be considered for the position as Region 1 Administrator and will work diligently promoting the national agenda and the states issues.

Respectfully,

Paul Mercer

Ex. 6

Message

From: Jeff Hayes [support@stratalys.com]
Sent: 1/3/2019 3:10:15 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Online Discussion Sessions about Public Policy on January 16-17, 2019

Dear Ryan,

Stratalys Research, a non-partisan public opinion research firm based in Washington DC, invites you to voice your opinions about public policy issues in an anonymous, confidential forum. We aren't trying to sell anything, and this isn't a scam. This is an actual research event for which we'd appreciate your participation in return for a cash honorarium.

REWARD

If you complete the focus group, Stratalys Research will send you $75 via check or PayPal within one week of your participation.

(If you prefer or IF YOUR EMPLOYER HAS ETHICS GUIDELINES, we will make a donation to the charity of your choice in this amount.)

HOW

Please click on the link below to register.

http://sss.stratalys.com/inquirer/s19150/id/2003637739

Thank you very much for helping with this study. Your opinions are of great value to us.

Regards,

Jeff Hayes, PhD
President
Stratalys Research
1515 15th St. NW, Suite 222 | Washington, DC | 20005-1860
www.stratalys.com

MORE DETAILS

- This survey requires no special software or hardware and is estimated to take 5 minutes to complete.
- You were selected to participate through a publicly available email database. We have not shared your email address with any other organization.
- Your responses will be completely confidential and anonymous - as will your participation in the discussion group. Although you have been selected to participate due to your background in policy, we are interested in your opinions as an individual. The name of your employer organization will not be associated with this study in any way.
- Participating in this research complies with 18 U.S.C. § 209 regarding government employees receiving compensation from non-government sources.
- To be permanently removed from future Stratalys emails, please unsubscribe here, please UNSUBSCRIBE.

Message

From: Green Guy Media [talkwithgreenguy@gmail.com]
Sent: 1/3/2019 3:05:07 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: ♻ Green Guy Media Newsletter Steve Valk, Citizens Climate Lobby

♻ Green Guy Media Newsletter Steve Valk, Citizens Climate Lobby

Your 1# source for radio interviews and podcasts in the Sustainability Community
Volume 98 - January 3, 2019

View this email in your browser

Talk with Green Guy Show!
Sunday, January 6th, 9-10am EST.

Steve Valk, Citizens Climate Lobby kicks off the 2019 Talk with Green Guy Show Season.

We discuss their primary mission of addressing national policies on Climate Change and working with politicians on both sides of the aisle in Washington,D.C. to pass the Carbon Fee and Dividend Policy.

Green Guy broadcasts live every Sunday, **9 -10 am,EST:**

WGST AM 640

- iHeartRadio

Coming Events

Green Guy Media EcoEvent of the Week:
January 9th, Hot Cities 2050
bit.ly/2R3tBvT

January 12th, City of Atlanta
Freeking Freezing 5K
atlantaga.gov/newsroom/city-calendar

January 15th, Atlanta Regional Commission
Civic Dinner
bit.ly/2CO9XLP

Take the Pledge to save water at home
mydropcounts.org/pledge-to-conserve/take-the-pledge

Take the Pledge to save water at work
mydropcounts.org/pledge-to-conserve/pledge-at-work

- Download the Green Guy app @ Google Play and App Store

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Message

From: Carr, Dorothy [Carr.Dorothy@epa.gov]
Sent: 12/27/2018 6:50:48 PM
To: Ex. 6
CC: Jackson, Ryan [jackson.ryan@epa.gov]; Shimmin, Kaitlyn [shimmin.kaitlyn@epa.gov]; Terwilleger, Brock [terwilleger.brock@epa.gov]; Taylor, Jeremy [Taylor.Jeremy@epa.gov]; Barja, Kyle [Barja.Kyle@epa.gov]
Subject: Letter concerning EPA offer
Attachments: Appointment Ltr - JMcFaul.pdf

Hi Jessica,

Attached as discussed is a letter concerning your EPA offer. Please let me know if you have any questions.

Thank you,
Dorothy Carr
Lead Human Resources Specialist, Executive Resources
Human Resources Management Division, OARM-RTP
U.S. Environmental Protection Agency
Research Triangle Park, NC
(919) 541-4356 (office)
Ex. 6

OFFICE OF ADMINISTRATION AND RESOURCES MANAGEMENT
RESEARCH TRIANGLE PARK

CONFIDENTIALITY: This communication may contain privileged or other confidential information. If you are not the intended addressee, or believe you have received this communication in error, you may neither copy, disseminate, nor distribute it to anyone else or use it in any unauthorized manner; to do so is strictly prohibited and may be unlawful. If you receive this email by mistake, please advise the sender immediately by using the reply facility in your mail software and delete it from your computer. "Information in this message may be subject to the Privacy Act (5 USC 552a) and should be treated accordingly."

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF
ADMINISTRATION
AND RESOURCES
MANAGEMENT

December 27, 2018

Jessica McFaul
Ex. 6

Dear Ms. McFaul:

Congratulations! You have been selected for an appointment with the U.S. Environmental Protection Agency (EPA). This is to officially inform you of your position as a Senior Advisor to the Administrator (Public Affairs), located in the Office of the Administrator, Office of Public Affairs in Washington, DC.

This position is an Excepted Service Administratively Determined (AD) position. Pursuant to the authority vested in the Administrator under Public Law 95-190, your compensation for this position has been set at Ex. 6 per annum. Your acceptance of this position means that: (1) your position is not in the competitive service; (2) you will serve at the pleasure of the Administrator; and (3) termination of your appointment may occur at any time upon notice thereof. During a change in Administration, each position is generally reviewed on a case-by-case basis to determine if it meets the needs of the new Administration's goals and objectives for the Agency.

Information About Your Position

- Your position is an AD-1035-00, with an annual salary of Ex. 6
- You will work a full-time schedule.
- Your position has been designated by our Personnel Security Office as a high risk position.
- Pursuant to the Ethics in Government Act, you are required to complete the OGE-278 public financial disclosure report. If you are not yet a public filer, then you are required to file the new entrant report within 30 days of taking this position. Thereafter, you will be required to file the public financial disclosure report annually and also when you terminate from federal service or otherwise permanently vacate a public filing position. EPA uses INTEGRITY, an online electronic filing system operated by the Office of Government Ethics, as its only public financial disclosure reporting system. The EPA's Ethics Office will send you a separate email with further information soon. If you have questions or need assistance, please contact ethics@epa.gov. For more information about the OGE-278, please visit the Office of Government Ethics website (www.oge.gov).
- Reimbursement for relocation expenses is not authorized for this position.

Benefits

As a non-temporary appointee, you are entitled to the same Federal benefits package provided to other General Schedule employees, including:

- 10 paid Federal holidays per year;
- 13 days of sick leave per year;
- 13 days of annual leave (vacation) per year;
- Nationally recognized health insurance model that offers choice and flexibility along with substantial employer contributions to premiums (https://www.opm.gov/healthcare-insurance/);
- Group term life insurance program;
- Long-term care insurance program;
- Federal Employees Retirement System (FERS-FRAE) coverage, based on your years of service. If it is determined that you have creditable service to place you in another retirement system, we will do so after obtaining all your previous service records;
- Thrift Savings Plan (TSP), a self-directed retirement savings program with multiple investment options, similar to a 401(K) plan.

Next Steps

We will contact you to establish your start date once we have received clearance from the Personnel Security Office.

If you have questions, please contact me at (252) 301-4784 or carr.dorothy@epa.gov .

Sincerely,

Dorothy Carr

Lead Human Resources Specialist
Human Resources Management Division, OARM-RTP

Message

From: Lyons, Troy [lyons.troy@epa.gov]
Sent: 1/9/2019 3:31:24 PM
To: Leggett, Matt (EPW) [Matt_Leggett@epw.senate.gov]
CC: Palich, Christian [palich.christian@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: Wheeler nom

Ryan-do you know the status of the background check?

Sent from my iPhone

On Jan 9, 2019, at 10:27 AM, Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov> wrote:

> Fyi, the Senate just received the nomination. They will refer to our committee very soon. Then, I'll forward the nom to OGE. They'll need to turnaround today.
>
> Can you confirm that the FBI background check is complete? I assume it is since the nomination went out.
>
> **Matt Leggett**
> Chief Counsel
> (202) 224-9797
> --
> U.S. Senate Committee on Environment and Public Works
> Senator John Barrasso, Chairman

Message

From: Lyons, Troy [lyons.troy@epa.gov]
Sent: 12/19/2018 7:06:40 PM
To: Van Doren, Terry (McConnell) [Terry_VanDoren@mcconnell.senate.gov]
CC: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Peter Wright

Terry-thank you for chatting earlier about Peter Wright. Please correct me if I am wrong with the process, but are you all able/willing to reach out to the Dem cloakroom to signal that you can facilitate a voice vote for Peter? They believe this will help get the final Senator to agree to a voice vote.

Troy M. Lyons
Associate Administrator
Office of Congressional & Intergovernmental Relations
U.S. Environmental Protection Agency
Ex. 6

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 12/18/2018 9:57:25 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]
Subject: RE: Wright - few more

I think I can sell this slightly tweaked version

1. "I believe it is important that EPA be able to rely on studies whose underlying data may not be reproducible due to the fact that the data was drawn from a unique event or circumstance, and I believe it is important for the rule to preserve that authority."

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, December 18, 2018 4:23 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Wright - few more

I can accept the following addition to the Wright letter:

"I believe it is important that EPA be able to rely on studies whose underlying data may not be reproducible due to the fact that the data was drawn from a unique event or circumstance, and I believe it is important for the rule to preserve that discretion."

I cannot accept any further changes. I have to move on at this point. This letter is significant, and we cannot continue to talk about more changes.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Monday, December 17, 2018 7:00 PM
To: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: Wright - few more

Ryan

I pared back and simplified all of the suggested additions from earlier today. Hopefully this will do the trick.

Thanks
Michal

Message

From: EMBASSY OF JAPAN [publicaffairs@ws.mofa.go.jp]
Sent: 3/28/2019 9:58:13 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Invitation from the Ambassador of Japan

VV-0710

Dear Mr. Ryan Jackson

The Ambassador of Japan and Mrs. Shinsuke J. Sugiyama

request the pleasure of your company

at a reception

to celebrate the 2019 National Cherry Blossom Festival

on Tuesday, April 9th

from 6:30pm until 8:30pm

at the Residence of the Japanese Ambassador

4000 Nebraska Avenue N.W., Washington, D.C.

Please RSVP Here

by April 2nd

E-mail: publicaffairs@ws.mofa.go.jp | **Tel:** (202) 238-6766

*Gates open at 6:00pm.

*Business Attire (Military: Service Dress)

*This invitation is non-transferable.

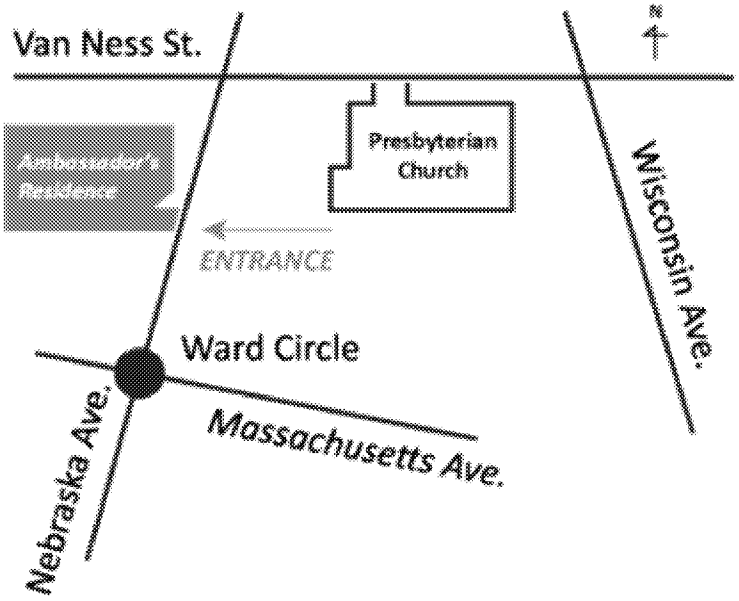
PARKING INFORMATION

Parking Location
Ambassador's Residence
Address: 4000 Nebraska Avenue, N.W.
*Entrance is on Nebraska Ave.

Chauffeured Vehicle

Guests arriving by chauffeured car should arrange for drop-off and pick-up at the Ambassador's residence.

Chauffeured cars are welcome to park at the **National Presbyterian Church** (Address: 4101 Nebraska Avenue, N.W.)



Please note that parking spaces are limited, so we strongly recommend carpooling or using public transportation.

For those who require special assistance, please call (202) 238 - 6766.

PLEASE NOTE:

- Please make sure to bring a printed copy of this invitation and photo ID to be presented upon arrival.
- Please R.S.V.P. by April 2nd, 2019.

EMBASSY OF JAPAN

@ JapanEmbDC

Message

From: CAS [discoveries@solutions.cas.org]
Sent: 12/18/2018 1:18:05 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Information overload? CAS can help

View online version

The CAS Blog – Where science and strategy converge

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Message

From: Kevin Bogardus [kbogardus@eenews.net]
Sent: 3/28/2019 7:58:21 PM
To: Schiermeyer, Corry [schiermeyer.corry@epa.gov]; Konkus, John [konkus.john@epa.gov]; Abboud, Michael [abboud.michael@epa.gov]; Hewitt, James [hewitt.james@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]; Press [Press@epa.gov]
Subject: EPA ethics memos on former EPA Administrator Scott Pruitt's condo
Attachments: 69-70.pdf; 217-218.pdf; Referral to EPA records_Redacted.pdf; 80.pdf; 200-201.pdf; 72.pdf; 343.pdf; 21-22.pdf; 15.pdf

Hey everyone,

It's Kevin Bogardus with E&E News.

I'm working on a story about last year's process behind the two EPA ethics memos related to former EPA Administrator Scott Pruitt's rent of a Capitol Hill condo. I have obtained under the Freedom of Information Act emails dealing with that episode, which I will link to and quote from in my story. I have also cc'ed Ryan on this email because he was involved and has responded to my questions in the past about this episode.

First, I had a few questions about this, which are:

- Kevin Minoli, then EPA's designated agency ethics official, and Justina Fugh, EPA's senior counsel for ethics, shared a draft of the April 4, 2018 memo (https://www.eenews.net/assets/2018/04/05/document_gw_04.pdf) with Walter Shaub, the former Office of Government Ethics director who has been critical of the Trump administration, and asked for his input (please see 69-70). Were EPA political appointees aware at the time that EPA ethics officials had sought Shaub's advice? Why did EPA ethics officials seek Shaub's advice? How would EPA characterize Shaub's role in the drafting of the April 4, 2018 memo?

- Jeffry Fowley, a former EPA attorney, filed an complaint with OGE about EPA's ethics process related to Pruitt's rent of the condo, which was also sent to the EPA Office of General Counsel and the EPA Inspector General (please see 217-218). How was Fowley's complaint resolved? Did someone investigate in response to his complaint? If so, who? And what were their findings?

- Minoli invited then-Acting OGE Director and General Counsel David Apol to speak to EPA officials on April 13, 2018 "to address the current ethics crisis facing the agency" (please see Referral to EPA records_Redacted). It seems only career EPA officials attended Apol's speech. That said, did any EPA political appointees attend Apol's speech? If so, who attended? Did Pruitt attend Apol's speech?

Second, I wanted to give you a heads up about some other emails I plan to quote from and link to my story, which I summarize below in bullet points. I don't have any questions for you about these emails but if you want to share any thoughts on any of them, please let me know.

- Minoli notes concerns about how the March, 30, 2018 memo was being described by EPA press officials (please see 343).

- Fugh had "a long chat" with Apol (please see 80).

- Fugh recounts the events leading to her verbal opinion on Pruitt's condo on March 29, 2018 (please see 200-201), which she also confirmed in writing that night (please see 72).

- Fugh received several messages of support during this episode (please see 21-22) and also expressed frustration to her staff (please see 15).

Please get back to me as soon as possible. My deadline is noon EST Friday, March 29, but the sooner you get back to me, the more it helps my reporting. Thank you for your help.

Kevin Bogardus
E&E News Reporter
kbogardus@eenews.net
202-446-0401 (p)
Ex. 6
202-737-5299 (f)

Follow me @KevinBogardus

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To: OGC Ethics[OGC_Ethics@epa.gov]
From: Fugh, Justina
Sent: Fri 3/30/2018 11:15:27 PM
Subject: an update
Evaluation of Lease Agreement2018-03-30-152600.pdf

Hi there,

I certainly had an eventful day today, ranging from people calling me horrible names to other people just wanting me to know that they are thinking of me.

Good golly! What a weird 24 hours! In the dozen years I've been doing this job, I've never been asked about someone's rental agreement. For example, I have no idea about Gina McCarthy's living arrangements while she was the Administrator. And over the course of today, there are new details about Pruitt being dropped, like the fact that his daughter stayed there too. This is insane! Anyway, attached is the memo that Kevin Minoli wrote and signed today that concludes there isn't a gift issue here since Pruitt paid rent.

Happy weekend, everyone.

Justina

Justina Fugh | Senior Counsel for Ethics | Office of General Counsel | US EPA | Mail Code 2311A | Room 4308 North, William Jefferson Clinton Federal Building | Washington, DC 20460 (for ground deliveries, use 20004 for the zip code) | phone 202-564-1786 | fax 202-564-1772

Ex. 5 - Deliberative Process

To: Fugh, Justina[Fugh.Justina@epa.gov]
From: Messier, Dawn
Sent: Fri 4/6/2018 2:12:14 PM
Subject: RE: sending you ....

That is crazy!!! You should know that all of us career OGCers support you – we know firsthand the quality of your lawyering! I hope you get some well-deserved rest this weekend and, yes, leave the phone behind!

Dawn Messier

U.S.E.P.A.

Office of General Counsel

Water Law Office

202-564-5517

From: Fugh, Justina
Sent: Friday, April 06, 2018 10:05 AM
To: Messier, Dawn <Messier.Dawn@epa.gov>
Subject: RE: sending you ....

Dawn,

I've been living the ethics lawyer's nightmare, which is to be named in the news. But what a nice note from you and thanks for thinking of me! EPA political officials told me about this lease for the first time on Thursday, March 29. I was sitting in the Ballston movie theater, about to silence my phone, when I got a call from the General Counsel and Chief of Staff, saying that they needed to talk to me ASAP. It was 8:45 at night! Based on the facts they provided me, I made a quick determination about whether the lease as explained to me was an impermissible gift. The problem, as we know now, is that I wasn't given all of the facts. That's where the trouble began. Or maybe I should leave my phone in my car the next time I go to the movies.

Justina

Justina Fugh | Senior Counsel for Ethics | Office of General Counsel | US EPA | Mail Code 2311A | Room 4308 North, William Jefferson Clinton Federal Building | Washington, DC 20460 (for ground deliveries, use 20004 for the zip code) | phone 202-564-1786 | fax 202-564-1772

From: Messier, Dawn
Sent: Friday, April 06, 2018 9:44 AM
To: Fugh, Justina <Fugh.Justina@epa.gov>
Subject: sending you ....

An electronic hug.... That is all. Dawn

Dawn Messier

U.S.E.P.A.

Office of General Counsel

Water Law Office

202-564-5517

To: Ross, Margaret[Ross.Margaret@epa.gov]; Duross, Jeanne[Duross.Jeanne@epa.gov]
From: Fugh, Justina
Sent: Thur 4/5/2018 5:07:52 PM
Subject: RE: fyi

Ex. 5 - Deliberative Process

From: Ross, Margaret
Sent: Wednesday, April 04, 2018 3:27 PM
To: Fugh, Justina <Fugh.Justina@epa.gov>; Duross, Jeanne <Duross.Jeanne@epa.gov>
Subject: RE: fyi

Ex. 5 - Deliberative Process

Margaret Ross | Ethics Officer | Office of General Counsel | US EPA | William Jefferson Clinton Federal Building Room 4310A North | Washington, DC 20460 (for ground deliveries: 20004) | phone 202-564-3221

From: Fugh, Justina
Sent: Wednesday, April 4, 2018 2:32 PM
To: Ross, Margaret <Ross.Margaret@epa.gov>; Duross, Jeanne <Duross.Jeanne@epa.gov>
Subject: fyi

From: Minoli, Kevin
Sent: Wednesday, April 04, 2018 1:59 PM
To: Walter Shaub <WShaub@campaignlegalcenter.org>; Fugh, Justina <Fugh.Justina@epa.gov>
Subject: RE: Clarification of and Record For Review of Lease.docx

I am sorry, confusion on our end. In light of your incoming question regarding the language in the March 30 memo, I wanted to ensure we effectively resolved that confusion as to scope. We were not sending the entire document as it is in development and so that's why you do not see

everything you might have expected. If you could give me a quick call that would be great.
Thanks, Kevin

Kevin S. Minoli

Principal Deputy General Counsel

Office of General Counsel

US Environmental Protection Agency

Main Office Line: 202-564-8064

From: Walter Shaub [mailto:WShaub@campaignlegalcenter.org]
Sent: Wednesday, April 04, 2018 1:40 PM
To: Fugh, Justina <Fugh.Justina@epa.gov>
Cc: Minoli, Kevin <Minoli.Kevin@epa.gov>
Subject: Re: Clarification of and Record For Review of Lease.docx

This confuses me. My understanding was that Kevin believed the lease entitled the Administrator to occupy only one room in the residence, and he mentioned to me in our conversation that he assessed comparables by looking up Air B&B rates for renting one room in a residence. In fact, he showed me a printout that he had converted to PDF. So I'm confused by the discussion at the end of this draft memo that discusses average rates for renting whole residences. Did I misunderstand Kevin? In other words, was the ethics analysis based on occupying one room or was it based on renting the whole residence? If so, why does this draft say otherwise? Will the memo include the PDF he showed me as an attachment?

Sent from my iPhone

On Apr 4, 2018, at 1:24 PM, Fugh, Justina <Fugh.Justina@epa.gov> wrote:

> Hi Walt,
>
> Kevin Minoli asked me to forward this draft along to you.
>
> Justina

Cc: Leopard, Matthew[Leopard.Matthew@epa.gov]
To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Fugh, Justina
Sent: Fri 3/30/2018 1:11:02 AM
Subject: Confirmation of my determination

Hi there,
You have asked whether the fact that the administrator leased one room efficiency in a house owned by a friend who happens to be a federally registered lobbyist present an ethics concern. It does not. He signed a lease and paid rent on that one room. The fact that the landlord may be a lobbyist is not a concern because I don't conclude that this is a prohibited gift at all. It was a routine business transaction and permissible even if from a personal friend.
Justina

Justina Fugh, senior Counsel for Ethics

Sent from my iPhone

To: Duross, Jeanne[Duross.Jeanne@epa.gov]; Ross, Margaret[Ross.Margaret@epa.gov]; Keith, Jennie[Keith.Jennie@epa.gov]; Griffo, Shannon[Griffo.Shannon@epa.gov]
From: Fugh, Justina
Sent: Wed 4/4/2018 12:06:15 AM
Subject: I had a long chat with Dave Apol today

Hi there,

Ex. 5 - Deliberative Process

Justina

Emily Holden

Reporter, energy/climate

POLITICO

eholden@politico.com

Cell: Ex. 6 - Personal Privacy

@emilyhholden

On Apr 5, 2018, at 12:23 AM, Minoli, Kevin <Minoli.Kevin@epa.gov> wrote:

> I am working on an official statement and could potentially talk officially then, but I do not believe the CNN article fairly describes my memo.
>
> Kevin S. Minoli
> Principal Deputy General Counsel
> Office of General Counsel
> US Environmental Protection Agency
> Main Office Line: 202-564-8040
>
> On Apr 4, 2018, at 10:38 PM, Emily Holden <eholden@politico.com> wrote:
>
>> Wanted to reach out to you directly, thanks.
>>
>> Emily Holden
>>
>> Reporter, energy/climate
>>
>> **POLITICO**
>>
>> eholden@politico.com
>>
>> Cell: Ex. 6 - Personal Privacy
>>
>> @emilyhholden

To: Minoli, Kevin[Minoli.Kevin@epa.gov]
From: Zillow
Sent: Mon 4/9/2018 9:31:12 PM
Subject: New Listing: 610 E Capitol St NE APT A4, Washington, DC 20003. Your 'For Rent near Washington 20002' Search.

Instant Update

mo.

For Rent

$1,641/mo

1 bd, 1 ba, 700 sqft
610 E Capitol St NE APT A4,
Washington, DC

o daily summary

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To: Minoli, Kevin[Minoli.Kevin@epa.gov]; Fugh, Justina[Fugh.Justina@epa.gov]
From: Leopold, Matt
Sent: Mon 4/9/2018 5:00:31 PM
Subject: FW: Complaint to Office of Government Ethics

Ex. 5 - Deliberative Process

Matthew Z. Leopold

General Counsel

U.S. Environmental Protection Agency

(202) 564-8040

From: Jeffry Fowley [mailto Ex. 6 - Personal Privacy
Sent: Monday, April 9, 2018 11:09 AM
To: Leopold, Matt <Leopold.Matt@epa.gov>
Subject: Fwd: Complaint to Office of Government Ethics

fyi

-----Original Message-----
From: Jeffry Fowley < Ex. 6 - Personal Privacy
To: contactoge <contactoge@oge.gov>
Sent: Mon, Apr 9, 2018 11:08 am
Subject: Complaint to Office of Government Ethics

I am asking that your office take over looking into the alleged violations of federal ethics rules by EPA Administrator Scott Pruitt. In particular, you should examine whether the gift regulations, or any other ethics regulations, were violated by Mr. Pruitt in connection with the rental of a condo unit from Vicki Hart.

As you may know, the EPA Office of General Counsel ethics officer Kevin Minoli initially issued a legal opinion on March 30 advising that no violation of the gift regulations had occurred. However, he subsequently has had to back-track and has issued a second legal opinion dated April 4 admitting that when the March 30 memorandum was written, he did not have all of the relevant facts. Notwithstanding

this, the EPA Office of General Counsel has failed to take the next logical step and to conduct a new ethics evaluation - using the true facts - in order to determine whether any ethics violations have occurred. On Friday (April 6), I asked EPA General Counsel Matthew Leopold to order that such a new evaluation be conducted. I also asked that Mr. Minoli be recused from any further involvement in this matter, given the deficient nature of his initial work and the likelihood that he would not be objective in evaluating this matter and his own deficient work. I have been told by EPA attorney Justina Fugh that no further ethics evaluation will be conducted, and have not heard back from Mr. Leopold.

It is apparent that the EPA Office of General Counsel is unwilling or unable to do its ethics job. You are no doubt aware of the reports that when more courageous EPA personnel have attempted to advise honestly about ethics matters, negative consequences from Mr. Pruitt have followed. It seems apparent that an independent agency - i.e. your agency - needs to conduct any ethics evaluation if it is to be fair and proper.

Please conduct an evaluation of this matter. I would be happy to cooperate with you in any way I can, including forwarding to you the emails I have sent to the Office of General Counsel and EPA Inspector General's Office. You may contact me here by email or may call me at Ex. 6 - Personal Privacy You may use my name as appropriate when conducting your investigation - keeping this confidential is not required. Jeffry Fowley

Cc: Leopold, Matt[Leopold.Matt@epa.gov]; Fugh, Justina[Fugh.Justina@epa.gov]
To: Bowman, Liz[Bowman.Liz@epa.gov]; Wilcox, Jahan[wilcox.jahan@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]
From: Minoli, Kevin
Sent: Tue 4/3/2018 2:49:21 AM
Subject: Press Statements Regarding the Friday Memo

Hi Folks- I want to make sure that whenever the agency is referring to the memo that I wrote on Friday we are referring to it in a way that is consistent with what it does and does not indicate that the memo does more than it did.

Today was the first day where I saw articles asking about specific actions the agency or the Administrator may have taken that have some alleged or real connection to the people were connected to the apartment. The memo from Friday in no way speaks to those actions, either by in endorsing them or calling them in the question. The memo addressed only the questions of whether the act of signing the lease or living in the space as described in the lease amounted to a prohibited gift. I stand behind my conclusion they were not.

The ethics rules and obligations continue to apply to any action the agency and the Administrator has taken or will take, however, and the fact that he has entered into a lease with Vicki Hart on behalf of 233C LLC may or may not be relevant to understanding how the ethics rules apply to any particular action. We have not been asked to advise on any particular action that has been taken or provide guidance on future actions, and so the memo cannot be cited in response to questions raised about actions other than signing the lease and living in the space consistent with the lease.

Again, I am happy to work with folks on specific statements as they arise or on a generic one that can be used whenever questions like these come in. Let me know how to help with those if you are interested.

Thanks, Kevin

Pruitt Had a $50-a-Day Condo Linked to Lobbyists. Their Client's Project Got Approved.
The New York Times

The E.P.A. chief was using an apartment partly owned by the wife of the chairman of the lobbying firm as its client sought the agency's sign off on a pipeline project. Read the full story

Shared from Apple News

Kevin S. Minoli
Principal Deputy General Counsel
Office of General Counsel

From: David J. Apol
To: "Fugh, Justina"
Subject: RE: here you go
Date: Wednesday, April 11, 2018 2:32:44 PM

Justina and Kevin,

Sorry for not responding sooner. For some reason your email, Kevin, did not make it to my email. I'd be happy to come by an talk to folks if you think that would be helpful. I'm tied up from 10 to 3:30 tomorrow, and on Friday from 11 – 1.

Before coming over, I would like to discuss what points and topics you intend to cover. I'm available to talk after 3:30 today.

Dave

From: Fugh, Justina [mailto:Fugh.Justina@epa.gov]
Sent: Wednesday, April 11, 2018 11:19 AM
To: David J. Apol
Subject: here you go

From: Minoli, Kevin
Sent: Tuesday, April 10, 2018 12:45 PM
To: 'Director of OGE' <[redacted]@oge.gov>
Subject: Request For Your Participation in a Meeting with EPA Senior Leaders This Thursday or Friday

Dear Director Apol- EPA's Executive Management Council (EMC) is meeting here in DC on Thursday and Friday morning of this week. The EMC is a 24-member body comprised of the top career official from each headquarters and regional office, plus, historically, the Deputy Administrator (because that position is currently vacant, I expect Henry Darwin, our Chief of Operations, will attend instead). I have made an emergency request for time on the agenda in order to address the current ethics crisis facing the agency, including those included in your letter. [redacted] If you are available, I request your attendance at least for the opening of the session so that you can underscore the importance of an agency's senior leaders demonstrating their commitment to the Standards of Ethical Conduct – and particularly the importance of the role of career senior leaders [redacted] Please let me know if you and others at OGE are available to assist as we prepare over the next two days. We have not been given a specific time for the session as I asked for the chance to consult with you and schedule around your availability, if possible.

Thank you for your interest in ethics at EPA and your assistance as we address the current situation.

Kevin

Kevin S. Minoli

Principal Deputy General Counsel &
Designated Agency Ethics Official
Office of General Counsel
US Environmental Protection Agency
Main Office Line: 202-564-8064

From: Fugh, Justina
To: David J. Apol
Subject: Visit with EPA"s Executive Management Council
Date: Friday, April 13, 2018 9:03:08 AM

Hi Dave,
Thanks for agreeing to come talk to EPA's career leaders today. You're on their agenda for 10 minutes starting at 10:30 am. You'll be coming to the EPA East building, and the entrance is off of Constitution Avenue at about 12th Street. I'll be waiting for you outside the building to escort you. Should you need to reach me, my cell number is [redacted].

I expect that there will be 50 people there (not sure as I've never been to one of these), all career SES. Many of them are also Deputy Ethics Officials. There should be one representative from each of EPA's offices, regions and labs. Kevin has suggested that your talk to these people be forward-looking, encouraging them to continue to be leaders in ethical compliance. I recently went back and reviewed your address to the new SES corps, which I continue to find inspirational, particularly in these trying times for EPA.

Looking forward to seeing you soon,
Justina

Justina Fugh | Senior Counsel for Ethics | Office of General Counsel | US EPA | Mail Code 2311A | Room 4308 North, William Jefferson Clinton Federal Building | Washington, DC 20460 (for ground deliveries, use 20004 for the zip code) | phone 202-564-1786 | fax 202-564-1772

Message

From: Ex. 6
Sent: 12/12/2018 8:19:37 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: NEED YOUR HELP
Attachments: SR Letter of Recommendation.pdf; Ex. 6

Ryan,

I hope this note finds you well.

As you know converse and Russell lost his election in November, and, consequently I am looking for a job.

With more than 15 years of government service I would like to continue to serve, but I also know that may not be possible in this climate.

I would love to visit with you at your convenience about my job search and what opportunities may or may not be available at the EPA.

Please let me know when we can get together to visit about your potential help in finding me a new job.

I have attached electron it copies of my resume, a professional bio, and a letter of recommendation from Congressman Russell.

Many thanks in advance.

Ex. 6

Ex. 6

Ex. 6

Ex. 6

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 12/12/2018 3:27:17 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]
Subject: RE: re - Dunn

Thanks --

I am going to aim to get you edits back by COB. MF has asked the cloakroom for intel on Wright -- I am now aware of 3 with concerns. One may need minor tweaks to the letter. The other two may need a recorded vote (but no debate or a cloture vote). we are trying to see whether that's the entire universe and what the realm of the possible is.

michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, December 11, 2018 7:18 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: re - Dunn

I was hoping to get you something by Dec 7, but that slipped. We have discussed this thoroughly here. I would be glad to go through this point by point.

I would imagine that the Peter Wright nomination hit some questions. I wanted to check on its status too.

Thanks.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Tuesday, December 4, 2018 7:42 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: re - Dunn

All

I'm attaching our edits to this draft and appreciate your continued willingness to discuss further. I also need to flag for you the disappointment and concern that a number of our Members have expressed to us in the responses to the qfrs, disappointment which we also share. We agreed to a tight turn-around time on the questions in order to help EPA process the nomination before sine die. The responses we received as a result of that agreement were not just rushed and superficial -- frankly, many of us felt like they were disrespectful and dismissive. As a result, our Members are feeling less optimistic about this nominee than they did before. That said, we do want to try --

So what's attached fall into a few basic categories (and again, I tried to comment box some rationales, which you won't see on your phones)

- We have added tweaks or additional specificity to things we think you have in principle agreed to do
- We have added a couple of items we have had on our list that your draft did not address that are important to our Members (some of whom have conveyed them – again – as part of their expressions of concern about qfrs and live hearing questions they asked on the topics)
- We added one new item we have not previously discussed (safer choice) that is there just because it seemed like a very easy qfr to respond to appropriately, it was not responded to well, and two Member offices then asked for it to be included. I don't think it's a heavy lift for you, and really it should have been handled in qfrs but wasn't.

Let us know what your thoughts are – we will be here tomorrow, even though the federal govt is closed.

Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, December 3, 2018 5:09 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: re - Dunn

I don't want too much more time to lapse on getting this draft to you. I have reviewed this with leadership here who are comfortable with more transparency reflected in the draft and willing to talk further. I think the language highlighted in green in the letter is pretty strong to the point of making some stakeholders angry. However, it's what we need to do. Please review and let me know your thoughts.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Wednesday, November 28, 2018 4:52 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: re - Dunn

Thanks for starting to work through these earlier. Here is a new list, recognizing that we haven't resolved or in some cases even discussed some of them. I've taken 5 things off the earlier 15-item list that appeared from our discussion to be not quickly resolvable, and note that among those things, the worker/SNUR/consent order and MC are likely to be raised by Members tomorrow and are important items that we nevertheless recognize are not likely to be doable in this context and in this timeframe. I've left ethylene oxide in just as a continued flag to you.

I'm also including our response, in caps, to a couple of the items we did discuss earlier. See esp 5 and 8 but a few other places as well.

Green highlight means I think we are resolved and just need to figure out words for a letter – thank you.

Let me know when we should resume this conversation – obv after the hearing is better for me. We've also started describing the Wright state of play to people in advance of having final agreed-upon letter text.

Michal

1. **PMN transparency measures** — EPA has reduced the information that is available to the public as it evaluates PMNs. We would like this remedied by 1/15/19, and would like the following materials be made available:
   - Each PMN and its attachments, all amendments, correspondence with EPA, and other supporting documentation in an electronic docket within 15 days of receipt of the PMN; and publication of the FR notice of receipt required under 5(d) within 30 days of PMN receipt.
   - EPA's underlying risk assessment documents that support each "not likely to present an unreasonable risk" determination EPA makes on PMNs, at the same time that the determination is communicated to the PMN submitter and posted on EPA's website.
   - EPA career staff's "interim recommendation" on each PMN substance undergoing review.

We can place PMNs and associated documents ~~on EPA's website~~ IN ELECTRONIC DOCKETS ON REGULATIONS.GOV [YOUR REGULATIONS REQUIRE THIS] ~~but can't commit to~~ within 15 days ~~because the CBI comb through takes longer than that~~ [WHY IS EPA DOING THE CBI COMB WHEN THE APPLICANTS ARE SUPPOSED TO PROVIDE YOU WITH PUBLICLY RELEASABLE VERSIONS OF THE DOCUMENTS THEY SEND YOU? WHY NOT JUST ENFORCE YOUR OWN REQUIREMENTS?]. We can commit to briefing the committee on what our plan is to place more PMN information on the website. We can commit to posting PMNs in the Federal Register every month. We can in fact commit to placing PMNs, the exemptions (TMEs), and notices of commencement in the Federal Register each month. We should be doing this anyway, but this is specifically what we can provide monthly [NOTE THAT YOU ARE CURRENTLY 3-6 MONTHS BEHND IN POSTING ANYTHING. GIVEN THE 90 DAY DEADLINE FOR PMN REVIEW, THE DEADLINES HIGHLIGHTED ABOVE FOR PUBLIC POSTING REALLY NEED TO BE THE DEADLINES]:

- PMNs/SNUNs/MCANs: Case number, amendment number and version, date received, manufacturer (if not CBI), use (specific or generic if CBI), chemical substance (specific AND CAS NUMBER IF NOT CBI, or generic name if CBI).
- TME information: Case, Submission type, Version, Received date, Manufacturer, Use, Chemical substance.
- NOC information: Case, Received date, Commencement date, If amendment and type of amendment (amendment to generic name, specific name, technical contact information, etc.), chemical substance.
- EPA'S UNDERLYING RISK ASSESSMENT DOCUMENTS THAT SUPPORT EACH "NOT LIKELY TO PRESENT AN UNREASONABLE RISK" DETERMINATION EPA MAKES ON PMNS, AT THE SAME TIME THAT THE DETERMINATION IS COMMUNICATED TO THE PMN SUBMITTER AND POSTED ON EPA'S WEBSITE.
- EPA CAREER STAFF'S "INTERIM RECOMMENDATION" ON EACH PMN SUBSTANCE UNDERGOING REVIEW.

2. **Section 5 framework:** EPA released a framework on how it would implement section 5 about a year ago, and held a public meeting and received written comments on it. While EPA appears to have subsequently made changes to the manner in which it is evaluating new chemicals, it has never modified or re-published this framework document to reflect those changes. We would like EPA to commit to publicly release a revised section 5 framework document by ~~1/15/19~~ 1/31/19 [THIS GIVES YOU 60 DAYS PER BELOW] that includes EPA's legal justifications for it, and take additional public comments on it.

From RJ:
We can also discuss a standard operating procedure we are probably 60 days out from finalizing on making public more material substantiating the not likely determinations. We can write to commit to brief the committee on that procedure when it's ready to be released. On the framework, we can provide a letter as well or briefing on how we are evaluating new chemicals and could commit to holding another public meeting on that. The framework was described in the document as a work in progress when issued [UNDERSTOOD, BUT IN THE SAME WAY A PROPOSED RULE THEN INCORPORATES COMMENTS AND IS RELEASED IN FINAL FORM, THAT NEEDS TO HAPPEN ON THEFRAMEWORK ALSO. IT ISN'T ENOUGH TO BRIEF THE COMMITTEE, THOUGH THAT IS ALWAYS APPRECIATED. CAN YOU COMMIT TO PUBLISH THE NEXT VERSION OF THE FRAMEWORK BY 1/31/19, INCLUDE LEGAL JUSTIFICATION FOR WHATEVER IT SAYS, HOLD A PUBLIC MEETING AND TAKE ADDITIONAL PUBLIC COMMENTS, AND BRIEF THE COMMITTEE. I ALSO ASSUME THAT THE NEW DOCUMENT WILL INCLUDE THE 'NOT LIKELY' INFORMATION YOU REFERENCED BUT THAT WON'T BE ALL IT INCLUDES. I DIDN'T EDIT THE WORDS ABOVE OTHER THAN THE DATE BECAUSE IT WASN'T 100% CLEAR TO ME THAT WE WERE TALKING ABOUT THE SAME DOCUMENT.

3. **CBI substantiation**– Section 14(c)(3) of new TSCA requires submitters of information to substantiate CBI claims. In addition, recognizing EPA's responsibility to weed out unwarranted CBI claims, section 14(g)(1)(A) requires EPA to review and either approve or deny CBI claims within 90 days of receipt. Under section 14(g)(1)(C), this review process must address all CBI claims for chemical identity and a representative subset of other claims comprising at least 25 percent of the total submitted. It is hard to see whether all of those things are happening, because so much of the PMN submittals and EPA's review thereof are redacted. Could EPA commit to issuing a report by July 1, 2019 that describes its efforts to comply with the CBI requirements in sections 14(c)(3) and 14(g)(1), and seek public comment and recommendations for improved management and review of CBI claims?

From RJ: We can commit to provide a report or letter or whatever the form on how we are handling CBI requirements WE DO WANT A REPORT ON THIS AS DESCRIBED ABOVE, BUT I NOTE THAT SECTION 26(j)(1) REQUIRES THAT EACH CBI CLAIM DETERMINATION HAS TO BE MADE PUBLIC, AND EPA HAS YET TO MAKE A SINGLE ONE PUBLIC. SAME WITH UNIQUE IDENTIFIERS. A REPORT ON WHAT YOU ARE DOING AND WHEN YOU WILL IMPLEMENT THE LAW IS THE MOST MINIMAL THING WE COULD ASK FOR IN THIS SPACE. AT THE VERY LEAST, THE REPORT SHOULD BE DETAILING THE NUMBER OF CLAIMS MADE, NUMBER OF DECISIONS MADE, INCLUDE COMMITMENTS FOR HOW AND WHEN THESE DECISIONS WILL BE PUBLICLY DOCUMENTED ON SOME TRACKING DATABASE, AND SO FORTH.

4. **CBI re-substantiation -** new TSCA says that "[t]he Administrator may require any person that has claimed protection for information from disclosure under this section, whether before, on, or after the date of enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act, to reassert and substantiate or re-substantiate the claim in accordance with this section— (A) after the chemical substance is designated as a high-priority substance under section 6(b) …" 15 USC 2613(f)(1). We would like EPA to commit to undertake re-substantiation of CBI claims for chemical substances undergoing REs, and make public any information for which the CBI claim(s) are no longer valid before the draft RE is published for comment.

From RJ: and we can in the same response commit to reviewing CBI claims for chemicals in RE's. Are you simply talking about the first ten though? We will review the claims but we also will issue the RE's for the first ten in February too in a very similar fashion to PV29.
THIS SHOULD INCLUDE ALL CHEMICALS THAT ARE UNDERGOING RES, INCLUDING THE FIRST TEN. PERHAPS FOR THE FIRST TEN, IT COULD BE SOONER THAN 45 DAYS BEFORE THE END OF THE COMMENT PERIOD ON THE RE, AND FOR FUTURE CHEMICALS UNDERGOING RES, IT COULD BE BEFORE THE SCOPE OF THE RE IS PUBLISHED (SO WOULD GIVE 6 MONTHS BTW PRIORTIZING AND PUBLISHING THE SCOPE)? AS PART OF RESUBSTANTIATION, EPA SHOULD BE MAKING THE DETERMINATIONS PUBLIC AS WELL AS ANY INFORMATION THAT NO LONGER QUALIFIES FOR CBI PROTECTION.

5. **Systematic review** – OCSPP has developed its own systematic review document even though ORD's has been largely blessed by the NAS. We'd like the OCSPP version to be withdrawn and/or not used until it is reviewed by NAS, and NAS feedback incorporated.

WE TALKED ABOUT SAB REVIEW AND I DON'T THINK THIS WORKS. NAS HAS DONE REVIEWS OF SIMILAR PROTOCOLS NOT JUST FOR ORD BUT FOR NIEHS, UCSF AND OTHERS. THIS ONE IS A HIGH PRIORITY.

6. **PFAS SNUR** – EPA proposed its PFAS SNUR in 2015, and EPA has repeatedly said it is revising it to reflect new TSCA but planned to finalize it. We'd like a commitment that it be finalized by a date certain and assurance that its scope has not changed from what was proposed. My guess is this is in the mix on your PFAS management plan and that we could begin conversation on this item by reviewing the language you're currently using In that document and seeing if that language can be sent to TC in a letter.

From RJ: The PFAS SNUR is referenced in the upcoming report as well so that is very doable to commit to.
DISCUSSED SOLUTION THAT IS ANALOGOUS TO THE ONE FOR THE PFAS CERCLA DESIGNATION

7. **PFAS information -** EPA has acknowledged that it lacks information about many PFAS chemicals. We would like EPA to commit to use EPA's authority under TSCA Section 8(a)(2) to require PFAS manufacturers and processors to submit information concerning the production, use, and impacts of PFAS chemicals. My guess is this is in the

mix on your PFAS management plan and that we could begin conversation on this item by reviewing the language you're currently using In that document and seeing if that language can be sent to TC in a letter. If there are other ways to get this information (section 4 orders, for example), we are definitely open.

8. **Comment period and peer review of risk evaluations:** We would like a 120 day comment period for the rest of the first 10 REs. They're the first REs to be conducted under the new law and many of them will be released for public comment simultaneously, which will be difficult for commenters to handle. We would also like to ensure that CSAC is properly set up for a separate peer review of each of the REs, and can suggest some measures that could help with that. These include augmenting the CSAC with chemical-specific expertise if necessary (and allow the public to suggest new chemical-specific reviewers as it has in other similar situations), ensuring that CSAC members reviewing particular REs do not have conflicts of interest associated with the particular chemical, providing separate CSAC peer review documents for each RE so that the public can understand the nature of the CSAC input, and respond in each final RE to public comments and peer reviewer input. If needed, EPA has the additional 6 month extension TSCA provided in which to take these measures, which I know is non-ideal, but these are the first ten and probably need more attention.

YOU NOTED THE CONCERN ASSOCIATED WITH DOUBLING THE PLANNED 60 DAY REVIEW TIMEFRAME, AND I AGREED TO THINK ABOUT SOME MIDDLE GROUND. HOW ABOUT SOMETHING LIKE THIS

- NO LESS THAN 90 DAYS
- STAGGER THE RELEASES SUCH THAT EPA WOULD RELEASE NO MORE THAN 3 RES AT A TIME AND WITH AT LEAST 30 DAYS BETWEEN RELEASES;
- EPA WILL CONSIDER REQUESTS FROM STAKEHOLDERS ASKING FOR AN EXTENSION AND MAY PROVIDE MORE TIME WHEN JUSTIFIED (E.G., TIME FOR ADDITIONAL ANALYSIS OR ACCESS TO MORE INFORMATION TO COMMENT EFFECTIVELY)

9. **Agricultural Worker Protection Standard (WPS) rule and the Certification of Pesticide Applicators (CPA) rule** – withdraw the proposed modifications to these rules (we believe you already offered to do this and that's basically what the Senate did in PRIA)

From RJ: The WPS and certified use and designated representative provision at OMB can be withdrawn and we can write back on that as well.

10. **Ethylene oxide** – no specific request here, but I'm aware of your ongoing dialogue with the Duckworth (and other) offices on this so I'm flagging it as a potential issue of interest.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 27, 2018 1:29 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

Attached is a new letter concerning the science rule and SAB.

We have a suggestion on PFAS which you may be more interested in, maybe not.

On the other list, here are items which we can write back to do:

We can place PMNs and associated documents on EPA's website but can't commit to within 15 days because the CBI comb through takes longer than that. We can commit to briefing the committee on what our plan is to place more PMN information on the website. We can commit to posting PMNs in the Federal Register every month. We can in fact commit to placing PMNs, the exemptions (TMEs), and notices of commencement in the Federal Register each month. We should be doing this anyway, but this is specifically what we can provide monthly:

- PMNs/SNUNs/MCANs: Case number, amendment number and version, date received, manufacturer (if not CBI), use (specific or generic if CBI), chemical substance (specific or generic name if CBI).
- TME information: Case, Submission type, Version, Received date, Manufacturer, Use, Chemical substance.
- NOC information: Case, Received date, Commencement date, If amendment and type of amendment (amendment to generic name, specific name, technical contact information, etc.), chemical substance.

We can also discuss a standard operating procedure we are probably 60 days out from finalizing on making public more material substantiating the not likely determinations. We can write to commit to brief the committee on that procedure when it's ready to be released. On the framework, we can provide a letter as well or briefing on how we are evaluating new chemicals and could commit to holding another public meeting on that. The framework was described in the document as a work in progress when issued.

I can understand the CBI claims and who that's important to in particular. We can commit to provide a report or letter or whatever the form on how we are handling CBI requirements and we can in the same response commit to reviewing CBI claims for chemicals in RE's. Are you simply talking about the first ten though? We will review the claims but we also will issue the RE's for the first ten in February too in a very similar fashion to PV29. The PFAS SNUR is referenced in the upcoming report as well so that is very doable to commit to.

The WPS and certified use and designated representative provision at OMB can be withdrawn and we can write back on that as well.

There may be some more substance to provide on these, but this is about as far as we are able to go on that list. I'm glad to talk about other things on that list, but I'm a best offer kind of a guy without too much effort to low ball and offer. I want to offer what I really think we can do, so that's what this represents.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Tuesday, November 27, 2018 11:45 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

Thanks! – want to send us what you are proposing back on PFAS and CH2O and SAB as edits to the same letter? On SAB, I think we are fine with the 8 reappointments, the text we sent you about career staff advice, and depending on the call tomorrow we may want to add some document production (forward-looking, a commitment to provide some materials in the future, not before confirmation or a hotline etc), but do not expect to have new requests on policy on the advisory committee front. Happy to work to resolve a final letter text today and then start socializing this to folks.

We are headed in to talk to TC right now but can make time this afternoon if you want to talk through logistics, Dunn, or anything else.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 27, 2018 11:37 AM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

We can accept that edit.

I am strengthening the PFAS answer presently. I need to get some answer concerning formaldehyde so that everyone understands the procedure moving forward, but we can agree to IRIS processing of the chemical.

Finally, I have responses to the list of items concerning Alex, however, we need to have a conversation about it and what happens to all this if Peter and Chad can't get confirmed.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Tuesday, November 27, 2018 9:59 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

The Wehrum letter committed to the future denial of a rulemaking petition before it actually did so, among other commitments made. But in lieu of the first suggested edit, how about this one, which is intended to mirror a commitment to a policy but not specify a rulemaking outcome in a different part of the letter?

Let us know when you want to talk to figure the rest (formaldehyde and PFAS in particular) out. Happy to also share what I'm thinking in terms of process and what we will do to pave the way assuming we get to a good place on the substance.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, November 26, 2018 9:04 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re: Peter Wright

We didn't propose doing credit for exporting ethanol.

Ryan Jackson
Chief of Staff

U.S. EPA
202-564-6999

On Nov 26, 2018, at 7:52 PM, Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov> wrote:

Why not? You did exactly that for Wehrum/Ernst didn't you?

Sent from my iPhone

On Nov 26, 2018, at 7:42 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

We cannot put in a letter that the final rule will say something in particular. We cannot accept that last edit.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Wednesday, November 21, 2018 3:21 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Ryan – thanks for the response. We are definitely making progress.

First of all, just to respond to the Goo/SAB/ERRDA issue, the Goo memo explicitly refers to the **pre**-proposal stage, so we continue to think you are out of compliance with ERRDA. There is case law on this point that I imagine your lawyers are well aware of. I think the additions you made to the letter regarding SAB input and the need to re-propose may render this a moot point. Here is the rest (minus FARM)-

1. **Secret science** – added a very minor suggested tweak, and continue to wonder about the RIA. This rule will have impacts on other rules EPA promulgates, so it isn't entirely fair to say that the RIA isn't needed because this rule is only about EPA administration costs. I'd just ask that you think about that one again. But this letter is coming along and we appreciate it.

2. **Formaldehyde** – nothing new here, just waiting for you to get back to us on the pending request.

3. **SAB** – Re-appointing the 8 is very helpful - thanks. Happy to talk to the person you recommend we talk to as well, especially after you and he reviews what I'm including below.

   We want to talk further about process, but are willing to drop the proposal that you abandon the EPA grants conflict of interests thing (which we hate, so abandoning it is an accommodation on our part). When we talk about process, it isn't just about the EPA grants conflict of interest. It's about how recommendations are made for who to appoint. You have 7 SAB members that you're in the process of re-appointing, and a bunch of pending nominees for these slots. Historically, as nominees were being considered, EPA career staff would look at who was leaving and what needs SAB had in the coming year. So, for example, if all 7 departing people were industry people, one would expect

the career staff to recognize that the SAB balance would argue for the appointment of new industry people and they would prepare options for new nominees that would be mostly or all industry people. If two of the 7 departing people were the SAB's only epidemiologists, and career staff knew that in the next year the SAB had a ton of epidemiology to do, they would prepare options for new nominees that would ensure the SAB retained its epidemiology capacity. Career staff would send decision-makers some document(s) that described who was leaving, what capacity was being lost, and recommend options for new appointees that addressed concerns that SAB retain diverse and qualified members and maintain core capacity. This Administration seems to have abandoned that process at least for some advisory committees. We'd like you to return to it. Note that decision-makers can choose not to accept the career staff recommendations, but those decision-makers should at least have the benefit of career staff input.

Perhaps you could also include in a commitment letter on this that "EPA will follow its past practice of obtaining information and recommendations from EPA's career staff to ensure that new appointees to EPA's scientific advisory committees are independent, well-qualified, free of conflicts of interest, come from diverse technical and professional backgrounds and possess expertise in areas that the agency anticipates to be relevant in planned or anticipated reviews."

4. **PFAS** – nothing new here, just let us know what that language looks like

5. **TA** – thanks – had a brief call with the staff and sent some follow-up questions in writing. I'd really appreciate fast turnaround, and I tried hard to make them easy questions.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 20, 2018 7:25 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

I think this email is the latest among us. Now, the draft science policy letter is attached. It received the highest level of review. To follow up on the SAB issues, Tom Brennan is the director of the SAB and has been involved in the last two rounds of selections as director. Prior to that, Tom was the deputy for Zarba. He can answer any questions regarding conflict policy, and I can place him on the phone next week.

From: Jackson, Ryan
Sent: Monday, November 19, 2018 7:20 PM
To: 'Freedhoff, Michal (EPW)' <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

So just a couple of points of initial feedback. The draft science policy letter is being reviewed presently. However, for ERDDA compliance we follow the attached.

On the SAB, eight members 3 year terms expired October 1, 2018 and are eligible for reappointment. Those members are Dr. Ken Ramos (Medicine Toxicology) who chairs the Chemical Assessment Advisory Committee, Dr. Jay Turner (Air Quality Engineer) who chairs the Scientific and Technical Achievement Awards Panel, Dr. Sue Marty (Toxicology), Dr. Susan Felter (Toxicology), Dr. Tara Sabo Atwood (Ecotoxicology), Dr. Kenneth Portier (Statistics), Dr. Thomas Parkerton (Ecotoxicology), Dr. Robert Mace (Hydrology). We plan to reappoint them all. Also, on not following our rules, I really have no idea what you are talking about. Other than receiving grants, the conflicts of interest rules are the same. We have given board members notice now in two application processes.

Finally, page 11 of the opinion says that regardless of a proposed or final rule addressing EPCRA that reporting from animal waste is not required under EPCRA due to the FARM Act. That's why I say it caught our attention. In this case, the FARM Act was not enacted at the time. Administrator Pruitt issued guidance relying on the agricultural exemption from reporting. That is and would be a very broad exemption (which is also discussed in the case). The recent proposal we issued doesn't rely on the agricultural exemption. We believe a rulemaking based on that is too broad. We wanted to simply address animal waste emissions. Any kind of tank spill, other emissions, discharge to water, etc are all reportable under EPCRA. An agricultural exemption for that would be inappropriate and probably not supportable. Additionally, as I mentioned we are taking down the agricultural exemption guidance anyway as too broad. That is a policy win for you too.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Monday, November 19, 2018 2:32 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Thanks Ryan

We appreciate the constructive engagement, and have a few thoughts to share in response.

First of all, on McIntosh – we are working to resolve the hold and will let you know if we run into problems. We ran that hotline without doing proactive member outreach because we had socialized it in advance with our LAs, and McIntosh is not a high-profile nominee. The hold is from an off-EPW Member we could not have anticipated. Hopefully it will be fine.

On Wright, we know there is a lot of on and off Committee interest in him, as well as widespread environmental NGO opposition to him. Assuming we get to a good resolution with you, we'll need to treat a potential hotline on him differently than we

did for McIntosh, and spend more time proactively describing and selling the package. We would be working in good faith towards a voice vote and would actively help resolve problems if they arise.

Now to your points below:

1. **Secret science** – will look forward to reviewing the next draft. Just as a matter of interest and by way of example, unfortunately, lots of workers were exposed to PCBs and asbestos in the 1950s. It isn't exactly an experiment anyone wants to repeat, but is a way to explain the concern we have about older studies.
2. **Formaldehyde** – The problem with a TSCA-RE-only approach is that OW, OAR and/or OLEM can use an IRIS RA to inform future efforts in their programs because IRIS gets you a toxicity evaluation, including a reference dose/concentration. A TSCA RE doesn't get you that (which doesn't mean a TSCA RE is not useful – just saying they are different products that are used for different purposes). Appreciate your receptivity here. As I understand the normal 7-step IRIS process, it would be a 30-day EPA review, then a 60-day intra-agency review, then a 60-90 day public review, then back to NAS, and could thus in theory be completed in just over a year. What we want is for the formaldehyde IRIS assessment to be immediately freed up to follow the IRIS process/timelines that are normal. So a letter saying that, and committing to inform TC if any step takes longer than normal, could be one way to go? We can review text in advance as with other efforts.
3. **SAB** – Happy to look at your list. It isn't just the conflict of interest part of the process that we have issue with, but also the manner in which nominees are selected for qualifications and balance that is not being followed
4. **PFAS** – let us know what that language looks like
5. **TA** – thanks
6. **FARM court case** – I am not the subject matter expert on this, but I think you may be making our point for us. That court decision relied on EPA guidance that was not an accurate description of the FARM Act , which is why we were so unhappy with the way EPA was describing the FARM Act.

Thanks again
Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Sunday, November 18, 2018 10:16 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

I can understand initial holds because we are EPA. However, the general perspective is that we plan to answer Republican and Democratic letters. We have, and we will and more. If there's something a member would like, it may take time but we will try to comply. In other words, we want to cooperate with them, but I need to have program directors here to do that.

There's a lot of people who work for Ford. Saying that Chad is responsible for all things Ford is the same as the NYT trying to say that Peter is responsible for all things Dow which also was successfully shot down in that article by Region 5 attorneys and staff who worked with Peter while at Dow. Chad was the director of global environmental policy for Ford when this situation was uncovered meaning he was working on Ford issues in Europe and South America. He never worked on this issue. If he had though, it would have been a good thing for Ford and the community because he would have solved it.

On the letter, we can accept most the suggestions.

- We agree to incorporate sending the proposal to the SAB to review. It would be helpful. We don't believe we have an ERDDA problem. EPA complies with ERDDA outlined in the Goo Memo. Unfortunately, I'm at home so I will send in the morning.
- We can incorporate your changes on retroactivity. The text we provided we believed not only said that but provided the exact language in the proposed rule to illustrate that.
- We can incorporate your changes on PII. However, I don't think it's good for us to rely on a study from the 1950s.
- We can incorporate your changes on the top of the second page on providing legal authority, however, I'm not sure how we will conduct an RIA on internal agency procedures. We don't have an obligation to do that, and I'm not sure how to assess costs within EPA. Additionally, we don't imply. We either say it or not.
- We can incorporate your changes concerning compliance with other laws, although I don't know if we will use those cites and I would have to check the cites. There's one reference that the Clean Air Act requires agencies to do something instead of simply referencing EPA, but I would imagine that's subject to come clean up.

I can send a final draft tomorrow.

On formaldehyde, if you want an IRIS inter-agency process to happen on this which we have no control over, I can agree to that but I need to check with others here. Although Lautenberg allows 3.5 years it doesn't have to take that long. We can conduct a very public risk evaluation for the conditions of use which includes all foreseeable uses in the judgment of the Administrator so yes we can evaluate for all uses. The result of that risk evaluation is regulation. The result of an IRIS review is a nice binder for the shelf which is part of the problem with that program. Additionally, this IRIS study on formaldehyde is something which has been ongoing for about 10 years and has until recently been criticized by the NAS and Congressional appropriations report language for its prior iterations. So yes, let me get back with you as soon as I'm able with probably an acceptance of this one too. We don't believe this is the way to approach a review of formaldehyde.

On the SAB, we are applying the same conflicts of interest rules we have always applied with the exception that if you are receiving a grant from EPA you unable to serve on the SAB. However, the specific offer was that there are 8 SAB members which have completed their first term. We propose reappointing all 8. I can provide their names tomorrow.

On PFAS, I need to check if we can lift the current draft language to send, but if we can we will accept this.

Finally, we can make a couple staff available to talk about off cycle and air conditioning credits for an hour? Let me know when works to do that. Also, I'm slow on getting a very recent federal district court case to you. It's in the 9th Circuit so maybe it doesn't matter on appeal, but the 9th Circuit is a big place. Regardless, we noticed it.

However, THE question I'm going to get when I take all this back is what do we get for doing this especially with word of a hold on Chad especially because we do have a problem with some of these requests. We need to have a telephone discussion of what this does.

Thanks.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Friday, November 16, 2018 11:28 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Ryan

Thanks for this response and for talking through some of the related issues with MF yesterday. Before sharing our response to the Wright-related matters, I wanted to let you know that we are trying to address the hold on Chad McIntosh, which as I mentioned last night, relates to this, and the hold was not lodged by a MI Senator. The fact that we have a hold on McIntosh is illustrative of the challenges EPA faces when asking to confirm any nominees through UC. We will keep you posted. We understand that there is also a blanket hold on ALL nominees for all agencies, but there is nothing we can do on that and assume it will work itself out before sine die. In the meantime, here is our response to the Wright-related matters. As always, we are happy to discuss.

1. **Secret science** Thank you for your effort to memorialize in part the conversations we have had with you, and that TC and AW have had, on this matter. We know your draft letter was a good-faith effort. However, there were some inaccuracies and misunderstandings associated with your draft. Attached is our redline, which you should read on a PC because we tried to explain in comment boxes the reasons for our suggested edits.

2. **Formaldehyde** It does not work for us to move this request into a TSCA RE. That would add 3.5 additional years to an already years-long expensive effort, would not result in a useful product for the non-OCSPP program offices. Moreover, even if you DID consider all conditions of use, you would violate your own (illegal) TSCA rules, and more years-worth of litigation would ensue. What we want is for the IRIS risk assessment for formaldehyde to continue to be processed using the normal IRIS procedures (which I believe were actually written by Nancy Beck when she was at OMB), without additional delay. I do not believe there is middle ground on this request, but if you feel creative, let us know.

3. **Science panels** What we are looking for is a return to your normal procedures (including for how conflicts of interest are assessed) for appointments and reappointments. These procedures are documented in writing at EPA, but EPA is not following them. I understand you mentioned the potential for a compromise involving some specific re-appointments. I would be interested in additional specificity (names, what panel, etc) on that so we can better respond to that offer.

4. **PFAS/CERCLA** We are glad that this is within the scope of your PFAS action plan, and know that it would need to be undertaken by rulemaking and thus could not be completed before the end of the Congress. Could AW make a written commitment to Senator Carper that this will occur and provide a rough timeframe for the NPRM and final agency action? We can edit draft letter language quickly.

5. **FARM** We understand that our staff and yours will engage substantively in coming days/weeks. As part of the conversation RJ and MF had yesterday, she also flagged more systemic concerns about the manner in which the agency engages with us. To that end, I've flagged for both of you, repeatedly, a TA request on cars I submitted about 3 weeks ago that Mandy has told EPA career staff they do not have permission to undertake. I'd like that call to occur early next week. Note that I do not consider this a 'give' on your part – I consider the provision of TA to be the normal manner in which EPA has historically done its job.

Thanks very much

Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, October 22, 2018 11:29 AM
To: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: Peter Wright

To provide a specific update on this and overall update, we are updating and clarifying text for this answer. I'm anticipating getting some final language or simply thumbs up from our program office shortly. I also will provide an update to the EPCRA 304 site on the cites used.

On the accidental releases terminology, our program offices chose that term to distinguish a one-time, inadvertent release from a "continuous release" that "occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes." 40 CFR 302.8(b). There's different reporting requirements under CERCLA 103(f)(2) and EPCRA 304 for continuous releases versus a temporary or accidental or one time one. That's the distinction they report to me they are attempting to make.

On science transparency rules, you may have noticed that the unified regulatory agenda places it further out because of the anticipated time involved on this. The attached draft is an example of what we could provide to answer some specific and overall questions from the Senate about our timing, thoughts, and any path forward.

The formaldehyde study might have a pathway ahead which would be better than sending the study through intra-agency review, but I hope to have an answer on that soon.

On the science boards, there's a track record of board members leaving or not getting reappointed. However, it's not easy to determine why. Maybe they didn't apply or maybe they did. We have reappointed some and accepted new applicants in other cases and can provide that information. We can also provide the nominating individuals too. Some self nominate, but others come from other sources if that's of interest.

Finally, on CERCLA eligibility, we are in the process of putting together our PFAS strategy based on the 6 townhalls and record which closed 3 weeks ago. This is within that process. But also, this will require rulemaking which is not entirely within our control and for this will take a while. Something to get this request narrowed would be worth talking about, I think.

From: Repko, Mary Frances (EPW) [mailto:mary_frances_repko@epw.senate.gov]
Sent: Friday, October 5, 2018 5:47 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE:

Ryan,

We are glad you took down the guidance link from the website, and that is helpful. But there are a few more issues with what the agency's website says now that the guidance is down.

The site says:

EPCRA Reporting Requirements

Do I need to submit an EPCRA report?
No. Based on the criteria for EPCRA section 304 release reporting, air emissions from animal waste (including decomposing animal waste) at a farm do not need to be reported under EPCRA.
Furthermore, the statute excludes farms that only use substances in "routine agricultural operations" from reporting releases of hazardous substances under EPCRA section 304. For more information, please see: EPCRA Q&A.

- While you don't have a link to the guidance doc, the website refers to it by citing the specific criteria under 304. It would be better if the website language were more simple:

  No. The EPA has interpreted the "routine agricultural operations" exemption under EPCRA section 304 to not require reporting from farms. For more information, please see: EPCRA Q&A.

- Also, the website's link to EPCRA 304 talks about accidental releases. That's not a word used in the statute, and certainly EPCRA reporting isn't limited to just accidental releases, but rather to any release that isn't federally permitted and that doesn't fall into one of the exemption categories in the statute.

- Finally, you need to update the links to the CFR on the EPCRA 304 page, since what is linked to is now out of date, having been modified by the CFR changes made to reflect the recent vacature order by the DC Circuit of the 2008 rule.

Hope that's clear,
MF

-----Original Message-----
From: Freedhoff, Michal (EPW)
Sent: Wednesday, October 3, 2018 8:03 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re:

Thanks!

Sent from my iPhone

> On Oct 3, 2018, at 6:40 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> We'll have the changes to the FARM Act website posted within the next 30 minutes.
>
>
>
>
>
>
>
> Ryan Jackson
> Chief of Staff
> U.S. EPA
> 202-564-6999
>

Message

From: Cindy Wynne Ex. 6
Sent: 12/13/2018 12:58:43 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Wheeler, Andrew [wheeler.andrew@epa.gov]; Beck, Nancy [Beck.Nancy@epa.gov]
Subject: Methylene Chloride in paint strippers

Good Morning,
Your mailbox is full so an email is sufficient. You have been busy removing protections on environmental issues affecting Americans. Most recently, the
Protections of waterways and wetlands. That is disturbing and so is your refusal to proceed with the ban on Methylene Chloride in paint strippers.
Today my family begins two days of filming on this issue. I regret that we do not have a positive outcome to report. We have been successful with 11 retailers, why not the EPA? Is it still due to shoring up the pockets of the chemical industry?

Cindy Wynne
Ex. 6
Sent from my iPad

Message

From: Russell, Richard (EPW) [Richard_Russell@epw.senate.gov]
Sent: 12/19/2018 2:31:36 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Leggett, Matt (EPW) [Matt_Leggett@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]
Subject: RE: Dunn - one more try

We are planning on the 16th for Wheeler. Just need him sent up on the 3rd.

Richard M. Russell
Staff Director
Senate Committee on Environment and Public Works
202 224-6176

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Wednesday, December 19, 2018 9:27 AM
To: Russell, Richard (EPW) <Richard_Russell@epw.senate.gov>; Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: FW: Dunn - one more try

Just to keep you aware, we have sent these draft letters to the EPW Democratic staff.

I understand that Alex was hotlined through the Democratic cloakroom last night.

Peter continues to have a couple D offices which want a vote. Maybe a voice vote for him, but that's challenging. Still, they tell us they are working the consent confirmation alternative too.

Just wanted to keep you updated.

Chad McIntosh by the way has cleared the R and D cloakrooms so should definitely be in a package.

Thanks.

From: Jackson, Ryan
Sent: Tuesday, December 18, 2018 6:33 PM
To: 'Repko, Mary Frances (EPW)' <mary_frances_repko@epw.senate.gov>; 'Freedhoff, Michal (EPW)' <Michal_Freedhoff@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Dunn - one more try

Please let us know when the hotlines have been requested and if we can answer any Senator's outstanding questions. Thanks.

From: Jackson, Ryan
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To: 'Repko, Mary Frances (EPW)' <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Dunn - one more try

I absolutely appreciate that Safer Choice may be raised by a bipartisan group of lawmakers. We know that questions may be coming about it, and will be happy to answer them.

The Peter Wright and Alex Dunn letters can be send in draft to you for circulation to your members on what we can agree to here in order to get these nominees confirmed. I will attached those momentarily.

Thank you again. I appreciate the back and forth. I hope this works.

Ryan.

From: Repko, Mary Frances (EPW) [mailto:mary_frances_repko@epw.senate.gov]
Sent: Tuesday, December 18, 2018 5:10 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Dunn - one more try

Ryan,

Thanks for these edits. If you will sign and send a copy, we will request a hotline and do our best to use the information and see where we get in clearing the Senator concerns we know that we have at this time.

Also, just flagging for you that an EPA commitment to the continuation of Safer Choice is not a question that is going away. Nominees in the next Congress should expect to be questioned about it from the Democratic side of the dais. I know that this has been a long and difficult letter process. I'd welcome, at a later time, a better understand of the agency's sensitivities to commit to continuing a voluntary program subject to Congressional authorization and direction. That seems like an easy one to commit to.

If you could send as soon as you can, I'll make the hotline request.

-MF

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, December 18, 2018 4:23 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Subject: RE: Dunn - one more try

We can accept:

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- And the "and, at the same time" language in the NAS paragraph

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From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
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Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW)

<Michal_Freedhoff@epw.senate.gov>
Subject: Dunn - one more try

Ryan

Thanks for chatting about the difficulty of getting accurate read-outs of timeline possibilities from EPA staff given resource and other constraints. This is the cleaned up version of the document we have been editing, with many of the issues you had concerns about removed, some of the solutions we talked about incorporated as best I could, and a couple of things we did not resolve per se but which I continue to believe are important to our Members that do not, in our view, represent unreasonable expectations.

Take a look at let me know what you think – we do want to get this done.

Thanks
Michal

Message

From: Amy Harder [amy@axios.com]
Sent: 12/10/2018 10:37:50 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Trump's missed opportunity on coal and climate change

Trump's missed opportunity on coal and climate change

View this email in your browser

Good morning from the big UN climate conference in Katowice, Poland. My latest column, copied below, looks at the Trump administration's event today on fossil fuels and nuclear power: http://axios.link/yVVc

Cheers,

Amy

Trump's missed opportunity on coal and climate change

KATOWICE, Poland — In theory, President Trump could lead hard but necessary negotiations at a climate conference here about the realities of the world's significant dependence on fossil fuels and their role warming the planet. But that's probably not going to happen.

Driving the news: With Trump and his top advisers not acknowledging that humans are driving global temperatures up, and instead promoting coal and other fossil fuels full stop, a side event they're hosting today will ring hollow and deepen the divide over energy and climate change.

"I have long believed that the GOP position on the science undermines its ability to put forward a real climate policy," said George David Banks, a former top adviser to Trump on these issues.

- While at the White House, Banks hosted a similar event last year at the same conference, which drew hundreds of protesters who said fossil fuels have no role at a climate summit. Expect the same this year.

The intrigue: Katowice, a small city in the heart of Poland's coal-mining region, is hosting the big annual United Nations confab that's seeking to make progress on the 2015 Paris Agreement. Trump has vowed to withdraw the United States from that agreement.

Coal's presence is both palpable and shunned here:

- Corporate sponsors include coal producers.
- Poland's public-relations pavilion is literally made out of coal, with coal soap, coal earrings and coal shower gel.
- An environmental group gave the Polish government a derisive "Fossil of the Day" award, accusing it of not urging more aggressive commitments to the 2015 deal and promoting coal.

Reality check: Deriding fossil fuels, at a climate conference or anywhere, is unlikely to change the status quo. The reality is that oil, natural gas and coal provide all of us huge benefits by fueling our global economy. And yes, they also have a big negative impact on the environment. Those two things aren't mutually exclusive.

- The derision of fossil fuels could even be stymieing progress by deepening the disconnect between climate change rhetoric and energy reality.

"One of the problems with the coal conversation, is you can't wag your finger to a country that's still developing and say 'no coal,' " said Rachel Kyte, CEO of Sustainable Energy for All, a UN group, and special representative of the UN Secretary-General. "You have to help them make the choice to not go with coal sooner rather than later."

The big picture: The ambition around the world for the Paris deal is lessening, fueled by nationalistic leaders like Trump and Brazil's President-elect Jair Bolsonaro, who has criticized the deal and withdrew from hosting this same conference next year. As the political support for the agreement is waning, carbon dioxide emissions are rising.

"When I look at my hopes, compared to previous years, they are getting less and less because the numbers are stubborn," said Fatih Birol, executive director of the International Energy Agency, an intergovernmental research group. "The political determination of the different governments is not as strong

as it was three years ago."

By the numbers:

- Fossil fuels provide 81% of the energy consumed in the world. That figure that has not changed in 30 years.
- Current energy infrastructure already accounts for 95% of emissions allowed under the Paris Agreement, according to the IEA.
- That's due mostly to coal-fired plants in Asia that are less than 15 years old, IEA says.
- If technology that captures and stores carbon dioxide emissions from coal plants is widely adopted, the percentage drops to 80%.

This is where the Trump administration could, in theory, make a difference. In separate but similar statements ahead of today's event, spokespeople for the White House and State Department said the world will be using fossil fuels for decades and that officials plan to discuss technologies and fuels that are otherwise ignored at a conference like this.

- The administration is right that fossil fuels will be used for decades and that how to use those fuels more cleanly, such as with carbon-capture technology, is a subject that won't get much attention at the conference.

But with Trump mocking climate change on Twitter, administration officials disavowing their own government's reports on the matter and agencies rolling back environmental regulations, these legitimate messages are drowned out.

What's next: One expert speaking at today's event, Rich Powell, hopes progress can still be made reducing emissions even though the administration doesn't acknowledge climate change is a problem. As executive director of the nonprofit ClearPath Foundation, Powell works on cleaner energy technologies from a conservative perspective.

"Our thesis is that we need a more realistic narrative about the solutions, which

will bring a wider political acceptance on doing something about it."
Rich Powell, ClearPath Foundation executive director and panelist at Trump administration event

Go deeper: Tackling climate change when Trump won't talk about it

Amy

energy reporter, Axios
202.906.9629
@AmyAHarder

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This email was sent to jackson.ryan@epa.gov
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mailchimp

Message

From: Russell, Richard (EPW) [Richard_Russell@epw.senate.gov]
Sent: 12/19/2018 2:30:52 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Leggett, Matt (EPW) [Matt_Leggett@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]
Subject: RE: Dunn - one more try

That squares with what I know.

Richard M. Russell
Staff Director
Senate Committee on Environment and Public Works
202 224-6176

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Subject: Dunn - one more try

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Take a look at let me know what you think – we do want to get this done.

Thanks
Michal

Message

From: Russell, Richard (EPW) [Richard_Russell@epw.senate.gov]
Sent: 12/18/2018 4:29:00 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: fyi

https://www.nytimes.com/2018/12/18/opinion/climate-carbon-tax-innovation.html

Richard M. Russell
Staff Director
Senate Committee on Environment and Public Works
202 224-6176

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, December 18, 2018 11:25 AM
To: Russell, Richard (EPW) <Richard_Russell@epw.senate.gov>
Subject: RE:

Thank you sir.

From: Russell, Richard (EPW) [mailto:Richard_Russell@epw.senate.gov]
Sent: Tuesday, December 18, 2018 10:42 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: RE:

Will run today.

Richard M. Russell
Staff Director
Senate Committee on Environment and Public Works
202 224-6176

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, December 18, 2018 9:00 AM
To: Russell, Richard (EPW) <Richard_Russell@epw.senate.gov>
Subject: RE:

Can we run it before the D's are clear? The D's will use it as an excuse to not run Alex until we do.

From: Russell, Richard (EPW) [mailto:Richard_Russell@epw.senate.gov]
Sent: Tuesday, December 18, 2018 8:23 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Re:

The hotline will include discharge. We have requested it. Not run yet — think Laura is waiting for me to tell her our Ds are clear. Shouldn't be an issue.

Richard Russell
Staff Director

Committee on Environment & Public Works

On Dec 18, 2018, at 8:17 AM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

> Richard, we might be making some progress on Alex Dunn.
>
> However, it occurred to me that I wasn't sure if she had been discharged from EPW and hotlined on the R side. Do you know the status of that?
>
> Ryan Jackson
> Chief of Staff
> U.S. Environmental Protection Agency
> (202) 564-6999

Message

From: Mike Palicz [mpalicz@atr.org]
Sent: 12/10/2018 4:18:28 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: follow up from ATR Dinner

Hi Ryan,

Just following up to see if we can set up a brief meeting with you and Grover in the next few weeks. I also plan to be at EPA for WOTUS tomorrow, hope to see you there.

Best,

Mike Palicz
Federal Affairs Manager
Americans for Tax Reform

722 12th Street NW | Washington, DC 20005
Ex. 6 www.atr.org | mpalicz@atr.org

From: Mike Palicz
Sent: Tuesday, December 4, 2018 3:38:03 PM
To: jackson.ryan@epa.gov
Subject: follow up from ATR Dinner

Hi Ryan,

Great meeting you at our dinner event last night. We certainly appreciate both you and Administrator Wheeler joining us.

When you have the availability, Grover would love to do a follow up meeting with you and discuss some of the issues ATR is working on and areas where we hope we can be helpful.

Please let me know if something works in the next few weeks.

Best,

Mike Palicz
Federal Affairs Manager
Americans for Tax Reform

722 12th Street NW | Washington, DC 20005
Ex. 6 www.atr.org | mpalicz@atr.org

Message

From: Environmental Law360 [news-q2@law360.com]
Sent: 12/10/2018 8:58:13 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] Nexus Can Access Land For Pipeline Work, 6th Circ. Says

ENVIRONMENTAL

Monday, December 10, 2018

TOP NEWS

Nexus Can Access Land For Pipeline Work, 6th Circ. Says

A Sixth Circuit panel on Friday agreed with a lower court that gave Nexus Gas Transmission LLC quick access to landowners' properties in Ohio so that it could proceed with pipeline construction in a timely way. Read full article »

Ohio Mineral Owners Say Oil & Gas Drillers Dug Too Deep

A group of mineral owners has filed a proposed class action in Ohio federal court that alleges an ExxonMobil unit and other companies drilled in an area they had no permission to access. Read full article »

German Power Giant To Allow More Danish Energy After Probe

The largest high-voltage electricity transmitter in Germany will let in more energy from Denmark suppliers to end a European Commission investigation that it choked the supply of cheap Nordic electricity in favor of German-produced power, regulators said Friday. Read full article »

SERIES SPOTLIGHT

Data-Driven Lawyer: Morgan Lewis' J. Kyle Poe

Morgan Lewis' J. Kyle Poe, a self-proclaimed "elder millennial," created a client management platform to streamline the firm's work in asbestos litigation that is now used across practice areas, making the firm's business more efficient and upping its ability to attract clients through innovative fee arrangements, earning him a spot on our 2018 list of Data-Driven Lawyers. Read full article »

POLICY & REGULATION

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Baker McKenzie
Beasley Allen
Bricker & Eckler
Cleary Gottlieb
Covington & Burling
DLA Piper
Dechert
Dewsnup King
Dingess Foster
Earthjustice

Vt. Lets Entergy Transfer Nuke Plant To Demolition Firm

Vermont utility regulators on Thursday approved a plan for Entergy Corp. to transfer a shuttered nuclear plant to a large-scale demolition firm with the goal of speeding up the decommissioning process, despite environmentalists' concerns that the company may not be up to the job. Read full article »

LITIGATION

VW Tells 9th Circ. Counties' Emissions Claims Preempted

Volkswagen AG has told the Ninth Circuit that counties in Florida and Utah cannot revive their claims the German automaker violated local rules by tampering with emissions software in certain diesel vehicles, insisting they're preempted by the Clean Air Act. Read full article »

Pipeline Contractor Says EQT Skipped Bill On Spill Cleanup

A pipeline construction contractor filed a lawsuit in Pennsylvania state court Thursday claiming that EQT Gathering LLC is refusing to pay a nearly $2 million bill for cleaning up another company's spill on its construction site. Read full article »

Tribes Can't Stop FCC's Next-Gen Towers, DC Circ. Told

The Federal Communications Commission has urged the D.C. Circuit to toss out a petition for review by tribes and environmentalists regarding the commission's plan to accelerate the building of 5G infrastructure, saying the deployment of small-cell fixtures is not a major federal action. Read full article »

Corps, Dakota Access Say Tribes Didn't Obey Order

The U.S. Army Corps of Engineers and Dakota Access LLC said that several Native American tribes had failed to follow a D.C. federal judge's order to spell out what claims they plan to continue with in their challenge to the Dakota Access pipeline, as the tribes contended that the record in the case should be fleshed out first. Read full article »

LEGAL INDUSTRY

Kirkland & Ellis Chairman To Retire, Successor Named

Kirkland & Ellis LLP's longtime chairman Jeffrey Hammes will retire in early 2020 and will be replaced by Jon Ballis, a Chicago-based private equity partner and member of the firm's global management executive committee, according to a Friday internal memo obtained by Law360. Read full article »

Feature

Bar Orgs In The Crosshairs After Justices Revive Dues Case

The U.S. Supreme Court created an existential threat for mandatory state bar associations when it recently ordered a fresh look at whether their required dues are constitutional, a move that could lead to a decline in bar membership depending on the outcome of the case. Read full article »

Legal Industry Sheds 2,400 Jobs, Wiping Out Year's Gains

The legal services sector lost 2,400 jobs in November, the steepest single-month drop in 2018, erasing virtually all of the gains made throughout the year, according to data released Friday by the U.S. Bureau of Labor Statistics. Read full article »

Fredericks Peebles
Gardner Brewer Martinez-Monfort
Gibson Dunn
Greenberg Traurig
Hobbs Straus
Jenner & Block
Kilpatrick Townsend
Kirkland & Ellis
Marshall Dennehey
Michael Best
Modus Law
Morgan Lewis
Munger Tolles
Native American Rights Fund
Norton Rose Fulbright
Ogletree Deakins
Orrick Herrington
Rimon PC
Shuman McCuskey
Sidley Austin
Sullivan & Cromwell
Tucker Ellis
Weil Gotshal
Wiley Rein
Williams & Connolly

COMPANIES

1-800 Contacts Inc.
American Bar Association
American Civil Liberties Union
AstraZeneca
Bank of America Corporation
CTIA
CUNA Mutual Group
Chicago Bulls
Conservation Law Foundation
Consumer Attorneys of California
EQT Corp.
Electronic Frontier Foundation
Energy Transfer Partners LP
Entergy Corp.
Gilead Sciences Inc.
GlaxoSmithKline
Google Inc.
Home Box Office Inc.
Honeywell International Inc.
Kirkland's, Inc.

BigLaw Revenues On Track For Banner Year, Wells Fargo Says

The legal industry is poised to have its most successful year since the 2008 economic downturn, with revenue up among top firms through the first three quarters, a report from Wells Fargo Private Bank's legal specialty group predicts. Read full article »

Kirkland Nixes Forced Arbitration For Non-Attorney Staff

Kirkland & Ellis LLP told employees it would end its policy of requiring arbitration to settle employment disputes for all non-attorney staff, according to a memo obtained Friday by Law360 and following public pressure mounted by a group of Harvard Law School students. Read full article »

Trump Picks Kirkland's William Barr For AG

President Donald Trump named Kirkland & Ellis LLP attorney William Barr as his pick to replace former Attorney General Jeff Sessions Friday, setting Barr up to reprise the role he served under late President George H.W. Bush. Read full article »

Trump Trial Court Pick Unlikely To Get Vote, Grassley Says

President Donald Trump's choice for a North Carolina federal judgeship will likely be sent back to the White House after prospects for confirmation this year dwindled to nil, the head of the Senate Judiciary Committee said. Read full article »

Trump Unlikely To Defy 'So-Called Judges,' Prof Argues

A recent paper by a William & Mary law professor argues that, despite charged rhetoric from the Trump administration, including the president's personal attacks on judges, the federal government has thus far complied with judicial orders and is likely to continue to do so. Read full article »

Tesla Taps Williams & Connolly Chairman To Take GC Reins

Williams & Connolly LLP chairman Dane Butswinkas will become the new general counsel at Tesla Inc., moving in-house after a decadeslong career at the prestigious Washington, D.C., firm, the automaker announced Thursday. Read full article »

Belgian Busted In Scheme To Dupe US Law Firms, Charities

A Belgian national who was indicted by a federal grand jury for a scheme to convince law firms and charities to wire him money was arraigned in Boston federal court Friday, 22 months after a warrant was issued for his arrest. Read full article »

Feature

GC Cheat Sheet: The Hottest Corporate News Of The Week

More than a dozen privacy groups doubled down on efforts to persuade California lawmakers to refrain from watering down a landmark privacy law, the District of Columbia gave final approval to a post-Wayfair tax law, and the Marriott hack showed the risks of cyber diligence gaps in mergers. These are some of the stories in corporate legal news you may have missed in the past week. Read full article »

In Case You Missed It: Hottest Firms And Stories On Law360

For those who missed out, here's a look back at the law firms, stories and expert analyses that generated the most buzz on Law360 last week. Read full article »

Lands' End Inc.
Leadership Council on Legal Diversity
LexisNexis Group
Marriott International Inc.
National Basketball Association
National Trust for Historic Preservation
PhRMA
Porsche
Reed Elsevier
Robert Bosch GmbH
Starwood Hotel & Resorts Worldwide Inc.
State Bar Association of North Dakota
Twitter Inc.
Verizon Communications Inc.
ViroPharma Incorporated
Volkswagen
Wal-Mart Stores Inc.
Washington State Bar Association
Wayfair LLC
Wells Fargo & Co.
Yahoo! Inc.

GOVERNMENT AGENCIES

Army Corps of Engineers
Bureau of Labor Statistics
Cheyenne River Sioux Tribe
Equal Employment Opportunity Commission
European Commission
Federal Communications Commission
Federal Energy Regulatory Commission
Federal Trade Commission
Food and Drug Administration
Internal Revenue Service
National Labor Relations Board
National Transportation Safety Board
Nuclear Regulatory Commission
Oglala Sioux Tribe
Omaha Tribe of Nebraska
Securities and Exchange Commission
Seminole Tribe of Florida

Podcast

Law360's Pro Say: The Copy-Paste Case That Led To Fraud

Can you be held liable for securities fraud if you simply copy-and-paste someone else's false statements? The U.S. Supreme Court wrangled with that question this week, and reporter Jon Hill joins the Pro Say podcast to explain the case. Read full article »

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U.S. Attorney's Office
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Message

From: Amy Harder [amy@axios.com]
Sent: 12/24/2018 12:14:28 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Democrats' left turn on climate change

Democrats' left turn on climate change

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http://axios.link/stli and copied below -->

Democrats' left turn on climate change

Democrats are increasingly embracing a sweeping progressive plan to tackle climate change that includes a massive increase in government programs on everything from job guarantees to health care.

Why it matters: While it's unlikely to become law any time soon, if ever, expect the plan — called the Green New Deal and championed by Rep.-elect Alexandria Ocasio-Cortez — to permeate the next Congress and 2020 presidential campaign. They don't have a fully detailed plan yet — but their main goal, at least for now, is to change the debate.

The big picture: The trend to embrace more progressive energy and climate policies is part of the Democratic Party's broader leftward shift over the last decade on various issues, like embracing "Medicare for All" as the next step in health care beyond the Affordable Care Act. Republicans, meanwhile, have moved further to the right and largely rejected climate change as an issue.

Driving the news: Some three dozen Democratic lawmakers, including potential presidential candidates Sen. Cory Booker (D-N.J.) and billionaire activist Tom Steyer, back the plan and the creation of a special congressional committee in the next Congress to flush out details.

Virtually all of this support has come since Ocasio-Cortez, a progressive and self-described democratic socialist, participated in a mid-November rally in the office of incoming House Speaker Nancy Pelosi. The event was organized by the youth-led Sunrise Movement, which backed Ocasio-Cortez in her surprise primary victory over Democratic Rep. Joe Crowley.

"It definitely shows there is an appetite among Democrats for progressive policies that are bold and visionary, which is a departure from a lot of what Democrats have been running on for the last several years."
Stephen O'Hanlon, spokesman for Sunrise Movement

The details: Ahead of any actual legislating, the Green New Deal is mostly a catchy slogan, largely unknown by the public, which represents broad progressive policies. What details are available are outlined on Ocaso-Cortez's election website:

- An eventual goal of 100% of electricity coming from renewable energy, a controversial proposition. Right now, such sources make up just 17% of the nation's power mix, with nearly half of that coming from hydropower.
- A guarantee of federal jobs for those working in the transition from fossil fuels to cleaner energy sources.
- Federal programs guaranteeing basic income and universal health care. While health care has little to do with energy and climate, the outline says it would help "promote economic security, labor market flexibility and entrepreneurism."
- There's no price tag on the plan yet, but the outline says it would be paid for by a combination of the Federal Reserve and a collection of even more unprecedented funding sources, including a new public bank. A tax on carbon emissions could be one way to raise revenue, says Ocasio-Cortez spokesman Corbin Trent.

Between the lines: The Green New Deal represents one of the largest proposed expansions of government in decades, on the level of President Franklin Roosevelt's original New Deal during the Great Depression, World War II and the interstate highway system — three models cited by backers of the policy.

- The policy's various parts, as articulated on Ocasio-Cortez's website, must be advanced altogether, her spokesman says.
- "This is not a piecemeal solution. This is economic mobilization we're driving for," Trent said. "One of the things I fear, is that if we didn't already have an interstate highway, our current government would be unable to deliver on such a big problem."

The backstory: 2019 marks a decade since Democrats last tried big climate policy on Capitol Hill. Back then, with control of both chambers of Congress and the White House, Democrats pursued a market-based policy where companies could trade permits of carbon dioxide to comply with an overall cap on emissions in a system called cap-and-trade.

That policy is far more flexible — and less ambitious — than what the Green New Deal would likely be.

- Some big oil companies and utilities backed the cap-and-trade bill, which narrowly passed the House.
- Democrats couldn't get enough support for it — even among some in its own party — in the Senate, and the effort died the next year.

The other side: Progressive support for the Green New Deal is growing significantly while other, more bipartisan, efforts on carbon taxes move along more slowly and with less rhetorical firepower.

A Green New Deal is unlikely to get any Republican support, and probably won't get even a majority support in the Democratic caucus. It's also dead on arrival in the Republican-controlled Senate.

- Tom Pyle, who runs a conservative advocacy group American Energy Alliance, says the plan is more a shift in messaging than actual policy in response to what he describes as the left's failure to advance climate change policy through other efforts, such as carbon taxes and fossil-fuel infrastructure protests.

The bottom line: For now this isn't about passing legislation in the upcoming Congress. It's largely about changing the narrative to make climate change a 2020 issue as Democrats attempt to wrestle back the White House from Trump.

Amy
energy reporter, Axios

202.906.9629

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Message

From: The Well News [press@thewellnews.com]
Sent: 12/12/2018 3:09:43 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] Farm Bill, New Ranking Members and GoT Spoiler

Farm Bill, New Ranking Members and GoT Spoiler

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Straight from The Well

Wednesday, December 12, 2018

Read to the end of this email to find out who scientists predict will live and die in the final season of Game of Thrones.

SENATORS HAIL PASSAGE OF 2018 FARM BILL

The 5-year Agriculture Improvement Act Passed with Overwhelming Bipartisan Support

In a Congress marked by gridlock, the 2018 Farm Bill passed yesterday with overwhelming bipartisan support. By a margin 87-13, Senators on both sides of the aisle hailed the bill as success and touted achievements in securing funding for farmers, ranchers, and rural communities. The bill is expected to pass the House.

Notably, the bill rejected Republican attempts to slash food assistance programs, add dangerous work requirements for Supplemental Nutrition Assistance Program (SNAP) recipients, and gut conservation programs. It included a number of key measures supported by members on both sides, including hemp farming, dairy risk coverage, environmental quality incentives, and state rural development councils.

Read More

Senate Democratic Ranking Members Announced 116th Congress

On Tuesday, Senate Democratic Leader Chuck Schumer announced the slate of Senate Democratic Ranking Members for the 116th Congress. Ratified by the Senate Democratic Caucus, they include:

Aging: Senator Bob Casey, Ranking Member
Agriculture: Senator Debbie Stabenow, Ranking Member
Appropriations: Senator Patrick Leahy, Vice Chairman
Armed Services: Senator Jack Reed, Ranking Member
Banking: Senator Sherrod Brown, Ranking Member
Budget: Senator Bernie Sanders, Ranking Member
Commerce: Senator Maria Cantwell, Ranking Member
Energy: Senator Joe Manchin, Ranking Member
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Ethics: Senator Christopher Coons, Vice Chairman
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Rules: Senator Amy Klobuchar, Ranking Member
Small Business: Senator Ben Cardin, Ranking Member
Veterans' Affairs: Senator Jon Tester, Ranking Member

New Dems Elect Leadership Slate for the 116th Congress

On Tuesday, members of the New Democrat Coalition announced their leadership for the 116th Congress. The new slate includes:

- **Chair** – Rep. Derek Kilmer (WA-06)
- **Vice Chair for Communications** – Rep. Ann McLane Kuster (NH-02)
- **Vice Chair for Member Services** – Rep. Scott Peters (CA-52)
- **Vice Chair for Outreach** – Rep. Terri Sewell (AL-07)
- **Vice Chair for Policy Coordination** – Rep. Suzan DelBene (WA-01)
- **Whip** – Rep. Pete Aguilar (CA-31)
- **Leadership Member** – Rep. Kathleen Rice (NY-04)

- **Leadership Member** – Rep. Ami Bera (CA-07)

"Now at more than 90-strong, the New Democrat Coalition will push Congress to look at old problems through a new lens. We are laser-focused on growing the pie, creating jobs in every part of the country, and building an economy where businesses innovate and create more economic opportunities for more people in more places," said Chair-Elect Derek Kilmer in making the announcement.

SCHUMER/PELOSI MIC DROP

Schumer/Pelosi to Trump after yesterday's bombshell meeting over government funding and the border wall in the White House: "We gave the President two options that would keep the government open. It's his choice to accept one of those options or shut the government down."

IN THE NEWS

- Trump Says He Would Be 'Proud' to Shut Down Government Over Border Wall Funding
  By Jennifer Haberkorn
- Khashoggi's Friends Are Being Watched. The US Can Do Little About It
  By Tim Johnson and Stuart Leavenworth
- Which Gun Bills Could Be Important in Congress Next Year?
  By Justine McDaniel

EVERY DAY IS SOME DAY

Source: National Day Calendar

Gingerbread House Day

A favorite food of an Armenian monk, Gregory of Nicopolis, brought gingerbread to Europe around 992 AD and taught French Christians to bake it. Gingerbread was often used in religious ceremonies and was baked to be sturdy as it was often molded into images of saints.

We can thank the Brothers' Grimm for the idea of a gingerbread house through their tale of Hansel and Gretel. It didn't take long for the German gingerbread guilds to pick up the idea and put it to a more festive use making snowy cottages made from the spicy-sweet treat.

NEWS YOU CAN'T USE

Source: IFLScience!

Spoiler Alert: Scientists Predict Who Will Live And Die In The Final Season Of Game Of Thrones

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From: adm15.arwheeler.email [adm15.arwheeler.email@epa.gov]
Sent: 12/20/2018 1:29:45 AM
To: Wagner, Kenneth [wagner.kenneth@epa.gov]
CC: Jackson, Ryan [jackson.ryan@epa.gov]; Molina, Michael [molina.michael@epa.gov]; Ex. 6
Subject: Re: Kenneth Wagner Resignation Letter.pdf

Thank you Ken for everything you have done.

Sent from my iPhone

On Dec 19, 2018, at 12:05 PM, Wagner, Kenneth <wagner.kenneth@epa.gov> wrote:

> Andrew and Ryan:
>
> Attached is my resignation letter effective January 9, 2019 that expresses my deep gratitude for all you've done.
>
> Thanks, and let me know if you need anything further.
>
> Ken
>
> <Wheeler Resignation Letter.pdf>

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 12/12/2018 7:21:32 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Lyons, Troy [lyons.troy@epa.gov]; Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]
Subject: Re: Updated WPS/CPA Language

Thanks. We agree. Hence my confusion.

Sent from my iPhone

On Dec 12, 2018, at 2:17 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

No, we established we are compartmentalizing the three nominations. That's what we need to stick with.

- McIntosh we understand is clear.
- Wright has a couple objections which we would like to help provide information to clear, and
- Dunn is what we are working on presently.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Wednesday, December 12, 2018 2:13 PM
To: Lyons, Troy <lyons.troy@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: FW: Updated WPS/CPA Language

Troy

Thanks for sending the adjusted text – it's helpful, and we will take a look.

I am confused by your highlighted characterization of the process. As you know, EPA has already sent Senator Carper a letter related to commitments about Chad McIntosh, and we believe that the hotline run on him is clear. The conversations we have been having on Wright and Dunn have also thus far been separate, both from McIntosh and from each other. If you wish to tie all three nominees together, please let us know, and we will let the cloakroom know to put a new hold on McIntosh pending resolution of the other two, and be sure that holds on Wright are not cleared until we have an agreement on Dunn. That would seem to me to be the opposite of the outcome you would want though.

Let us know

Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Black, Jonathan (Tom Udall) <Jonathan_Black@tomudall.senate.gov>
Sent: Wednesday, December 12, 2018 2:01 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: FW: Updated WPS/CPA Language

FYI

From: Lyons, Troy <lyons.troy@epa.gov>
Sent: Wednesday, December 12, 2018 1:57 PM
To: Black, Jonathan (Tom Udall) <Jonathan_Black@tomudall.senate.gov>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Palich, Christian <palich.christian@epa.gov>
Subject: Updated WPS/CPA Language

Jonathan—thanks for the chat earlier today. I have just sent Michal the language below re: WPS and CPA. Please keep this close and do not share. This will be formalized and sent with the Administrator's signature once all three of EPA's nominees are confirmed. Please let me know if you have any questions.

"The Agency has been developing proposals concerning the Agricultural Worker Protection Standard (WPS) rule, including changes to the designated representative and minimum age provisions, and application exclusion zone provisions. The Agency has also been developing changes to the Certification of Pesticide Applicators (CPA) rule. Although the subject matter associated with these potential changes has been subject to wide ranging public stakeholder meetings and public comments, EPA will withdraw its OMB submission to propose revisions to these rules and will not make any changes to the designated representative and minimum age provisions."

Troy M. Lyons
Associate Administrator
Office of Congressional & Intergovernmental Relations
U.S. Environmental Protection Agency
Ex. 6

Message

From: Robotic Process Automaton in Gov Training Workshop [RoboticProcessAutomation@PotomacForumEvent.org]
Sent: 3/28/2019 4:31:43 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] Robotic Process Automation in Government Training Workshop

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Donna Roy
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From: Green Guy Media [talkwithgreenguy@gmail.com]
Sent: 12/12/2018 3:03:31 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: ♻ Green Guy Media Newsletter Scott Breen, U.S. Chamber of Commerce, Beyond 34: Recycling and Recovery

♻ Green Guy Media Newsletter Scott Breen, U.S. Chamber of Commerce, Beyond 34: Recycling and Recovery

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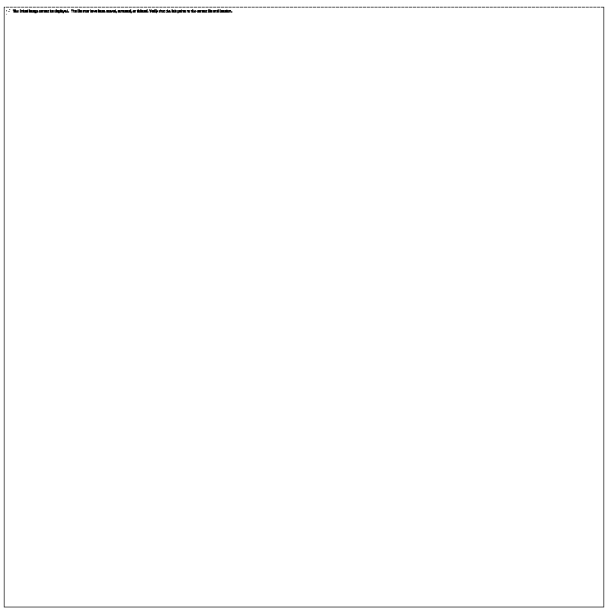

Talk with Green Guy Show! Sunday, December 16th, 9-10am EST.

Scott Breen, Associate Manager, Sustainability and Circular Economy, Corporate Citizens Center ,inside the U.S. Chamber of Commerce talks about their national initiative Beyond 34, a public-private partnership to break through the current national recycling rate of 34% and the

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December 15th, Partnership For Southern Equity
Organizing for Opportunity
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December 15th, Haiti for the Holidays 5K Run
bit.ly/2PklpK2

December 19th, Ceelo Green, Green Heart Holiday Gala
bit.ly/2C5mhXj

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From: Environmental Law360 [news-q2@law360.com]
Sent: 12/7/2018 8:53:31 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] EPA's Coal Gift Hints At Broader Climate Policy Challenge

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Analysis

EPA's Coal Gift Hints At Broader Climate Policy Challenge

The U.S. Environmental Protection Agency's Thursday rollback of Obama-era coal plant carbon dioxide emission regulations is intended to help revive the struggling industry and contains a hint that the administration is considering how to challenge or circumvent an earlier finding that CO2 endangers human health, experts said. Read full article »

McNamee Confirmed For FERC Slot Amid Climate Controversy

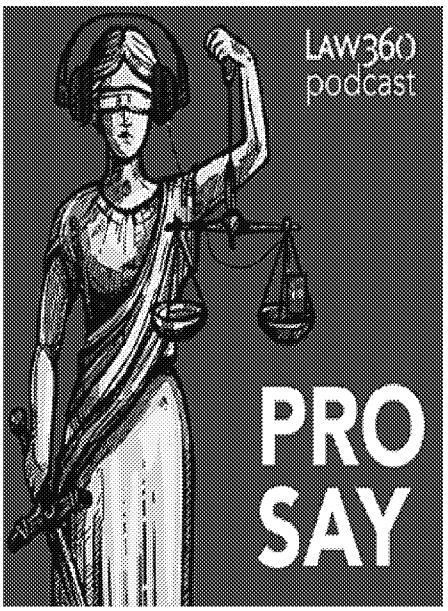
The U.S. Senate on Thursday narrowly confirmed Bernard McNamee to fill a vacant slot on the Federal Energy Regulatory Commission over unified Democratic opposition due to his role in the Trump administration's efforts to bail out coal and nuclear plants and his documented criticism of renewable energy. Read full article »

Target Inks $7.4M Deal Over Calif. Waste Disposal Claims

Target Corp. has agreed to shell out $7.4 million to resolve claims that the retail giant violated California state law by improperly dumping hazardous waste, some of which allegedly included customers' confidential medical information, piling on to an earlier $22.5 million deal over similar claims in 2011. Read full article »

11th Circ. Says Williams Partners Unit Can Quickly Take Land

The Eleventh Circuit on Thursday upheld a Williams Partners LP unit's move to quickly access landowners' property and build a pipeline, aligning itself with other circuits by agreeing that pipeline companies can be given immediate access to property after the Federal Energy Regulatory Commission greenlights the project. Read full article »



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Young Climate Fight Warriors Want Pretrial Process To Move

The young plaintiffs who are accusing the federal government of acting to make climate change worse asked a Washington federal judge to revise her prior order staying the case and let pretrial proceedings including discovery move forward. Read full article »

SERIES SPOTLIGHT

Data-Driven Lawyer: Ogletree's Evan Moses

Ogletree's Evan Moses uses unconventional strategies to boost the firepower of his class action practice, including a homegrown Monte Carlo algorithm, earning him a spot on our 2018 list of Data-Driven Lawyers. Read full article »

POLICY & REGULATION

EU Approves Class Action Rules Amid Calls For Safeguards

European Union lawmakers on Thursday approved rules that will allow groups of individuals to seek compensation through bringing collective actions against Europe's businesses, brushing off industry concerns that this will result in false litigation cases. Read full article »

LITIGATION

Pa. Justices Won't Hear Sunoco Pipeline Land-Grab Appeal

The Supreme Court of Pennsylvania refused to hear an environmental group's allegations that a Sunoco Inc. unit abused its eminent domain power assembling land for the controversial Mariner East 2 natural gas pipeline, according to an order made public Thursday. Read full article »

Enviros Blast BLM Revamp To Sage-Grouse Plan

The U.S. Bureau of Land Management on Thursday unveiled revisions of an Obama-era plan to protect greater sage-grouse and their habitat that environmental groups immediately denounced as a giveaway to oil and gas developers and other industries that threatens the bird's future. Read full article »

Co. Seeks To Dump Jury Verdict In Coal Ash Liability Case

Jacobs Engineering Group Inc. on Wednesday urged a Tennessee federal judge to vacate a jury's finding that the company breached its contractual requirement to protect workers on a coal ash spill clean up, arguing no reasonable jury could have found it was acting outside the bounds of the contract. Read full article »

Enviros Sue To Block Minneapolis Rezoning Plan

A coalition of environmental groups have filed a suit against the city of Minneapolis in Minnesota state court looking to block a proposed rezoning plan they say has not undergone a proper review and would cause severe environmental damage. Read full article »

Oakland Is Interfering With Shipping Terminal, Developer Says

An Oakland cargo shipping terminal developer has taken its fight over proposed coal operations at the facility to state court, accusing the city of spending the last few years working to obstruct the project, despite previously giving its blessing. Read full article »

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EXPERT ANALYSIS

A Comparison Of This Year's Carbon Tax Proposals: Part 2

In the second installment of this two-part series about four carbon pricing policy plans that garnered attention in 2018, Noah Kaufman of Columbia University's Center for Global Energy Policy discusses the potential impacts each would have on emissions, energy markets and the economy. Read full article »

LEGAL INDUSTRY

Hueston Hennigan Associates' Bonuses To Exceed Cravath's

Hueston Hennigan LLP will dole out end-of-year bonuses for associates that top the market standard previously set by Cravath Swaine & Moore LLP, joining a number of firms that have recently disclosed their scales, according to media reports Thursday. Read full article »

Male Partners Make 53% More Than Female Colleagues

Female partners receive markedly less compensation on average than their male colleagues at U.S. law firms, and the 53 percent pay gap is driven largely by discrepancies in origination and hourly rates, a report released on Thursday has found. Read full article »

White & Case Narrowing Gender Gap In UK Partner Pay

White & Case LLP is whittling down the pay gap between male and female partners in its London office, according to data voluntarily disclosed by the U.S. law firm along with information required by the United Kingdom's Equality Act. Read full article »

Kirkland's William Barr Said To Be Trump's Top Pick For AG

Kirkland & Ellis LLP attorney William P. Barr, who served as U.S. attorney general under President George H.W. Bush, is President Donald Trump's favored choice to succeed Jeff Sessions, according to Thursday media reports. Read full article »

Ex-BigLaw Atty Dodges Prison For $9M Transfer Racket

A former attorney at Boies Schiller Flexner LLP and Gibson Dunn & Crutcher LLP on Thursday avoided prison time for operating an unlicensed money transfer business that funneled over $9 million from the U.S. to Mexico on others' behalf. Read full article »

Law360's Weekly Verdict: Legal Lions & Lambs

Finnegan and Shook Hardy & Bacon top this week's legal lions list with a Federal Circuit victory for client Sprint in a patent battle with Time Warner Cable, while Berger Singerman ended up among the legal lambs after a Florida court ruled against its client, Airbnb, in a fight with the city of Miami. Read full article »

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Message

From: Mike Mahanna [mike@naem.org]
Sent: 3/28/2019 2:21:18 PM
To: Willis, Sharnett [Willis.Sharnett@epa.gov]; Dickerson, Aaron [dickerson.aaron@epa.gov]; Tom Davis Ex. 6
CC: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: RE: meeting today

I'm so glad Mr. Jackson was able to join us for dinner last night. The group really enjoyed his comments and the chance to talk with him.

I'm sorry we weren't able to connect via phone. It didn't notice in the original email that a digit was off in my phone number. I hope we can see Mr. Jackson at future gatherings. My correct number is Ex. 6

Thank you,
Mike

Mike Mahanna
Director of Member Experience and Engagement
NAEM
Ex. 6
www.NAEM.org

From: Willis, Sharnett <Willis.Sharnett@epa.gov>
Sent: Wednesday, March 27, 2019 5:19 PM
To: Dickerson, Aaron <dickerson.aaron@epa.gov>; Tom Davis Ex. 6
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Mike Mahanna <mike@naem.org>
Subject: RE: meeting today

Good Afternoon everyone,

Just want to confirm, that Mr. Mahanna will be meeting Ryan Jackson. I called Mr. Mahanna at Ex. 6 with no answer.

Thanks.

Sharnett Willis
Office of the Administrator
202/564-7866

From: Dickerson, Aaron
Sent: Wednesday, March 27, 2019 10:57 AM
To: Tom Davis Ex. 6
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Mike Mahanna <mike@naem.org>; Willis, Sharnett <Willis.Sharnett@epa.gov>
Subject: RE: meeting today

Hi Tom. No worries, we will call Mike when Ryan is on the way so he can meet him downstairs. Thanks again.

From: Tom Davis Ex. 6
Sent: Wednesday, March 27, 2019 10:24 AM
To: Dickerson, Aaron <dickerson.aaron@epa.gov>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Mike Mahanna <mike@naem.org>
Subject: meeting today

Hi,
I cannot be at the meeting today because Ex. 6 Ryan can call Mike (above) for assistance.
Mike is at Ex. 6
He is managing the meeting.
Sorry to miss Ryan. Please give him my regards.

Tom Davis

Ex. 6

Message

From: Ex. 6
Sent: 12/10/2018 3:49:50 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: call
Attachments: Ex. 6

Hi Ryan,

I'd like to follow up on this, given that Richard said you were interested to discuss. My CV is attached. I'm sure you have a tight schedule, so let me know what works for you.

Thanks,

Ex. 6

> On Dec 4, 2018, at 12:43 PM, Ex. 6 wrote:
>
> Dear Ryan,
>
> Richard Russell suggested that I send you my resume and mention a bit about my background.
>
> As you may know, I worked for Richard at Ex. 6 Since departing Ex. 6, I've been working as an independent consultant advising corporate clients on market, policy and technology issues related to electric power and, for one client, advanced vehicles. Early on, I collaborated with Richard and other former colleagues like Dan Byers (US Chamber) and Dave Banks (ACCF) on topics including EV market projections and the state-level impacts of CPP. For the past few years, I've been consulting primarily for Nike, assessing the economics and risks associated with their renewable energy PPAs.
>
> Having spent most of my career on one side or the other of energy and environmental regulatory actions, I have a particular interest in EPA. Two points stand out. First, over the years, I've been impressed with the professionalism of EPA staff. Second, in this Administration, EPA has made notable progress in common-sense regulatory reform – e.g., the proposed ACE rule and SAFE rule – under the leadership of President Trump, former Administrator Pruitt, and Acting Administrator Wheeler. If there's a fit, I'd like to contribute to this effort.
>
> I'd be happy to talk with you at your convenience. My cell is Ex. 6
>
> Thanks,
>
> Ex. 6
>
>
> Ex. 6
>

Ex. 6

Ex. 6

Ex. 6

Message

From: Keniece Barbee [kbarbee@corn.org]
Sent: 12/7/2018 8:32:36 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Keniece Barbee [kbarbee@corn.org]
Subject: On Behalf of John Bode_ President & CEO , CRA
Attachments: Meeting Request _ Andrew Wheeler.pdf

Dear Ryan,

On behalf of Mr. John Bode, President and CEO of Corn Refiners Association, please find attached meeting request for Administrator Wheeler.

Many thanks for your attention to this matter.

Keniece Barbee
Executive Assistant to President & CEO
Corn Refiners Association
1701 Pennsylvania Avenue, NW, Suite 400
Washington, DC 20006-5806
O (202) 534-3491
C Ex. 6
CORN.ORG

BIOGENIC CO_2 COALITION

Members

American Bakers Association

American Farm Bureau Federation

Corn Refiners Association

Enginuity Worldwide

National Corn Growers Association

National Cotton Council of America

National Cottonseed Products Association

National Oilseed Processors Association

North American Millers' Association

December 7th, 2018

The Honorable Andrew Wheeler
Acting Administrator
U.S. Environmental Protection Agency
William Jefferson Clinton Federal Building
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Dear Administrator Wheeler:

On behalf of the Biogenic CO2 Coalition, I respectfully request a meeting for Coalition leaders with you to discuss the emerging bioeconomy's promise for rural America, as well as how EPA's current treatment of Biogenic CO2 inhibits rural America's development.

We appreciate the work that Assistant Administrator Wehrum, Principal Deputy Assistant Administrator Mandy Gunasekara, and others have already dedicated to this issue.

We understand your busy schedule and ask that you please keep us apprised of any time in the near future you may have to meet with the Biogenic CO2 Coalition. Keniece Barbee (KBarbee@corn.org) would be pleased to manage logistics for Coalition meeting participants. Naturally, I would be pleased address any questions (JBode@corn.org or 202-534-3499).

Best Regards.

Sincerely,

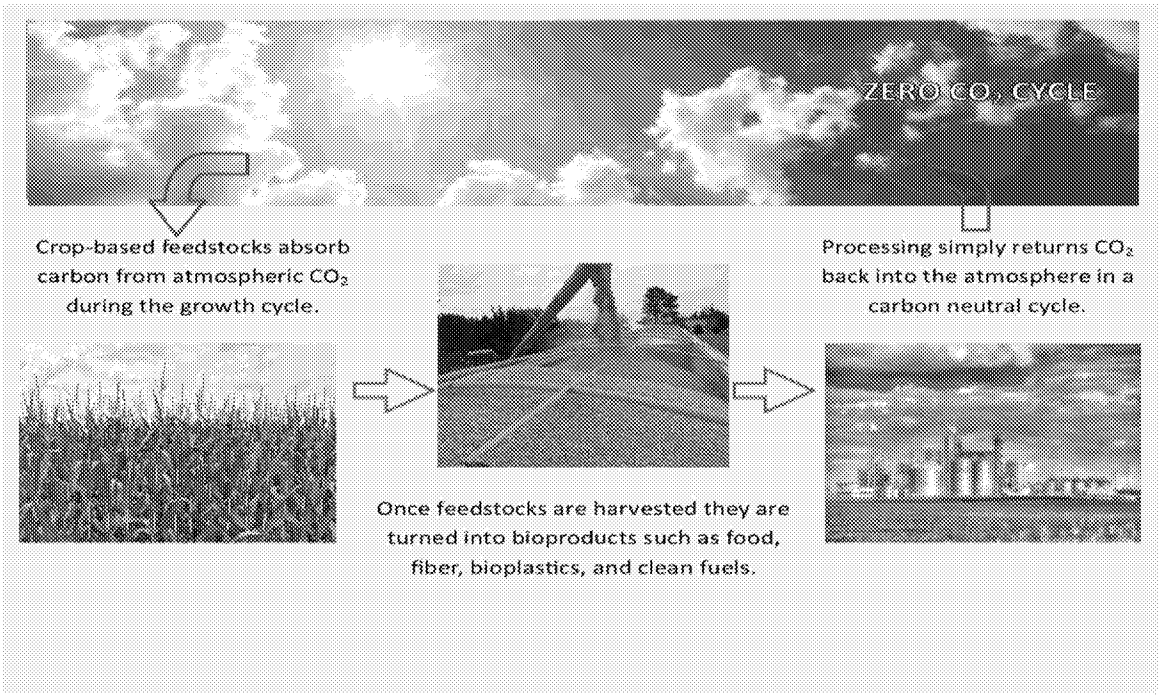
John W. Bode

About the Biogenic CO_2 Coalition:

The Biogenic CO_2 Coalition, through its member national trade groups, represents a broad swath of agriculture and related sector constituents in advocating for sensible policies recognizing the carbon benefits of agricultural production and processing.

www.BiogenicCO2.org

Carbon Lifecycle of Agricultural Crops



American Bakers Association
www.americanbakers.org

AMERICAN FARM BUREAU FEDERATION

CRA
CORN REFINERS ASSOCIATION

enginuity worldwide

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National Cotton Council OF AMERICA

NCPA
National Cottonseed Products Association

NOPA
NATIONAL OILSEED PROCESSORS ASSOCIATION

North American Millers' Association
N.A.M.A.

www.BiogenicCO2.org

Message

From: Patty Riddlebarger, Entergy [entergy@email.engagemsg.com]
Sent: 12/20/2018 9:30:33 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Learn how Entergy is making a difference in your community.

View this message in a browser

Entergy

Advocate Power

Welcome to Entergy Corporation's online gateway to news and information about programs supporting the communities in our service area.

Kudos for Entergy from DiCaprio, Restore the Earth Foundations

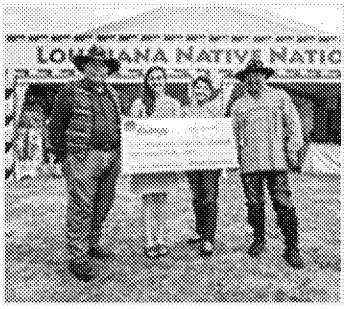
Entergy recognized for continued investments in helping restore Louisiana's landscapes.

Read more ▶

Entergy Wins HIRE Vets Medallion Award

The award recognizes the company's commitment to recruiting, hiring and retaining veterans.

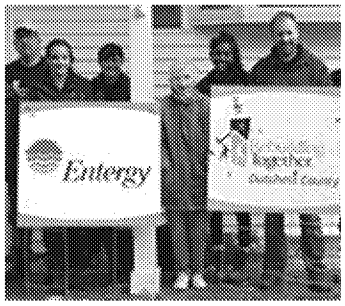
Read more ▶



Entergy Tribal Scholarship Program Boosts Educational Opportunities

With support from Entergy, more than 68 Native American students have been able to pursue college degrees and build brighter futures.

Read more ▶



Indian Point Employees Give Back to Community by Repairing Senior's Home

Entergy teams with Rebuilding Together Dutchess County to give a helping hand to low-income homeowners.

Read more ▶

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Message

From: Bloomberg Government [bbg_gov@info.bgov.com]
Sent: 12/17/2018 12:02:08 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Agencies Get Passing Grade on IT Modernization; Another JEDI Protest Rejected; GSA Moves Toward Online Shopping

De
Learn More | View this em

What's New This Week:
Score Big or Go Home

"Mr. Monopoly" made an appearance on Capitol Hill last week to remind all of us that tech giants profit from per data and there's not much we can do about it. A mustachioed activist dressed as Monopoly's famous mascot a a hearing where Google CEO Sundar Pichai testified before Congress on the company's privacy practices, mar power, and efforts to potentially build a censored search engine for China.

During the three-hour grilling by the House Judiciary Committee, Pichai managed to point out how uninformed politicians are about technology. He had to (gently) break the news to Iowa representative Steve King that Goo doesn't manufacture iPhones and told Texas representative Ted Poe that the company isn't capable of tracking movements "by default."

Thankfully, government employees are much more knowledgeable when it comes to tech. In fact, many agenci ending 2018 on a high note, having made significant improvements in their modernization efforts. All 24 agenci managed to get a passing grade, according to the House Oversight and Government Reform Committee's rece released IT scorecard, also known as the FITARA (Federal Information Technology Acquisition Reform Act) sc More than half had improved their scores, and none saw their scores fall.

The agencies were graded on different governmentwide priorities, such as adopting incremental development techniques, consolidating data centers, reducing duplicative IT investments, licensing software, and establishin for IT, among other things. BGOV's Chris Cornillie explains more in this week's exclusive story.

Although members of Congress with oversight authority applauded overall progress on the FITARA scorecard, said some agencies aren't moving fast enough on certain aspects of IT modernization. The lawmakers express frustration over internal obstacles hindering agency CIOs from using the money that's available for these efforts

It's always about the money! Speaking of which … a partial government shutdown is still possible if lawmakers agree on funding for President Donald Trump's U.S.-Mexico border wall. We'll see how it all plays out next wee

In the meantime, here's some more news you can use.

Get Smart

"The intent of the FITARA scorecards … is not to paint agencies with a scarlet letter, but instead to ince behaviors and actions that result in better managed and more secure IT resources."

—Will Hurd, chairman of the IT subcommittee on the House Oversight and Government Reform Committee

Read more in this week's exclusive from Bloomberg Government.

Big Contracts

GAO Rejects IBM's JEDI Protest
In the latest installment of the JEDI saga, the Government Accountability Office has rejected another challenge Pentagon's $10 billion cloud contract. GAO dismissed IBM's pre-award protest, saying the "matter involved" is pending in court. Read more.

CBP's $297M HR Systems Fiasco
Customs and Border Protection is under fire for technical problems surrounding its massive human resources s contract with Accenture. According to Homeland Security's inspector general, the new system processed only t in the first year. Read more.

Eye on Security

New Guidance Says to Protect Most Valuable Data
In a recent memorandum issued by the Office of Management and Budget, federal agencies are encouraged to new guidance on safeguarding their high-value assets. The memo offers steps for reporting and measuring the those assets against cyber threats. Read more.

House Report: Equifax Breach Was Preventable
Equifax could have avoided last year's large-scale data breach if it had basic security measures in place, like p vulnerable systems, according to a House Oversight Committee report. The report confirmed previously known and added new insights. Read more.

Beyond Legacy

IRS Struggles with Linux Migration
The Internal Revenue Service is in the process of migrating 141 legacy applications to an open-source Linux o system, but progress has been slow due to poor IT governance. A recent audit found only eight of those apps h transitioned to Linux. Read more.

GSA Launching E-Commerce Pilot
By the end of next year, the General Services Administration wants to have a proof-of-concept e-commerce pla place. It's part of the agency's effort to consolidate 24 buying schedules into one and create a commercial onlin similar to Amazon. Read more.

Next Tech

Why Pentagon Needs 'Startup Mentality'
The Defense Department could use some improvements to its current acquisition process. Adopting a startup r would help the agency move toward using emerging technologies like artificial intelligence, CIO Dana Deasy re told lawmakers. Read more.

Defense Agencies Cautious About AI
While military services have taken various steps toward adopting AI, Army Research Laboratory chief scientist Alexander Kott said agencies should set realistic expectations for the developing technology and focus on what do for specific tasks. Read more.

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Message

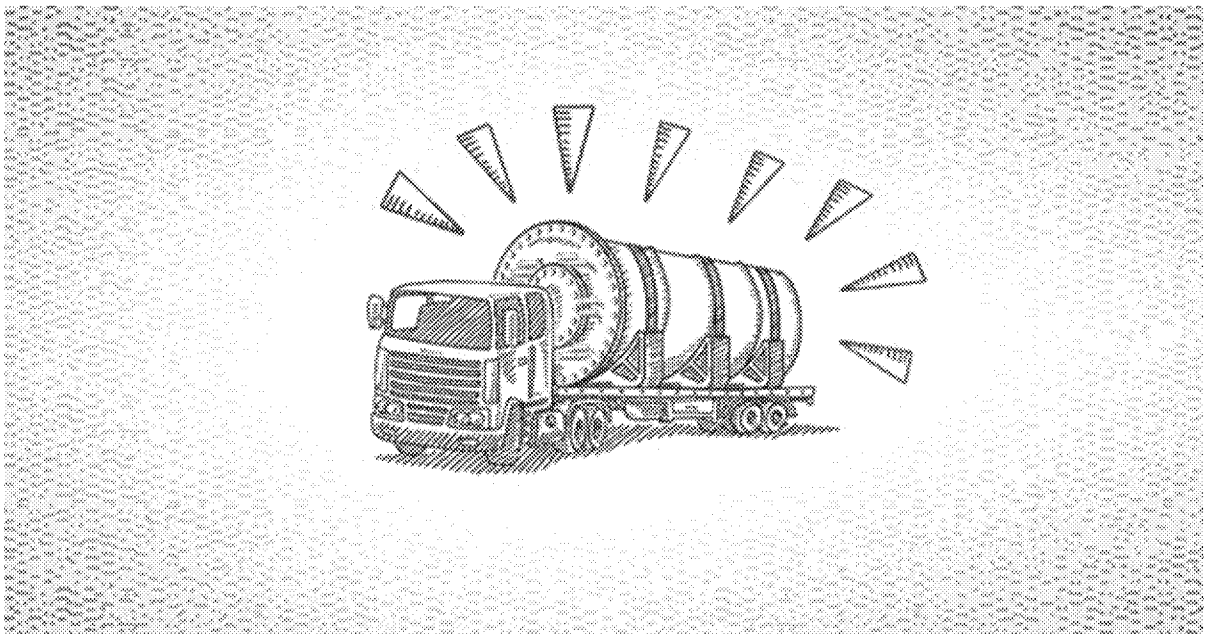
From: ClearPath Action [info@clearpathaction.org]
Sent: 12/21/2018 11:09:07 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: The Rundown - A Flurry of Advanced Nuclear Action

|MC:SUBJECT|

The Rundown

By: CLEARPATH ACTION

Welcome to your Friday Rundown for the week ending Dec. 21. Rundown is taking a break for the holidays but feedback is always welcome at **info@clearpathaction.org**. Thanks for reading, see you in 2019.



CONGRESS APPROVES MAJOR ADVANCED NUCLEAR PACKAGE

Lawmakers this week added to one of the most productive Congresses for advanced nuclear power.

House lawmakers Friday afternoon approved the bipartisan **Nuclear Energy Innovation and Modernization Act (NEIMA)**, which would develop a framework to quicken licensing of advanced nuclear reactors. The Senate passed the bill Thursday.

NEIMA would direct the Nuclear Regulatory Commission to develop a common-sense licensing pathway for advanced reactor concepts that promotes safety without being overly prescriptive. This is part of a broader effort to "rightsize" the NRC to match its workload.

Original sponsors include Senate Environment and Public Works Chairman John Barrasso, former EPW Chairman Jim Inhofe, Republicans Mike Crapo, Deb Fischer and

Shelley Moore Capito and Democrats Sheldon Whitehouse and Joe Manchin.

The final version sent to President Trump also includes language from the bipartisan **Nuclear Utilization of Keynote Energy (NUKE) Act** led by Reps. Adam Kinzinger (R-Ill.), Mike Doyle (D-Pa.), Bob Latta (R-Ohio) and Gene Green (D-Texas) to update NRC's fee structure, expedite licensing and examine other potential benefits to the nuclear industry.

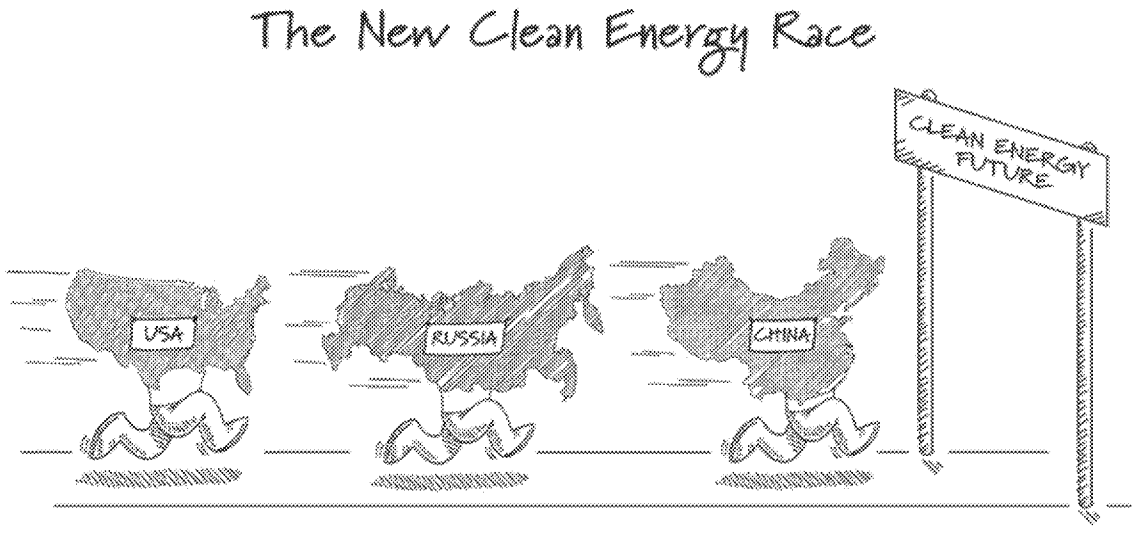
RICH'S TAKE

"It's heartening to again see Congress step up to the plate in a big bipartisan way to bolster advanced nuclear technologies that are a major part of the future of U.S. and global clean and reliable power," ClearPath Action Executive Director Rich Powell said. "Bringing any new energy technology into the marketplace is daunting, and that's doubly-true for heavily regulated industries like nuclear. By allowing companies a pathway to licensing with clearer expectations and benchmarks in line with other heavily regulated produces like drugs and aircraft, NEIMA will unlock even greater private-sector innovation towards a reinvigorated nuclear sector."

STAY TUNED FOR MORE IN 2019

In a **New York Times op-ed**, Chairman Barrasso laid out three main arguments: "The first is, the climate is changing and we, collectively, have a responsibility to do something about it. Second, the United States and the world will continue to rely on

affordable and abundant fossil fuels, including coal, to power our economies for decades to come. And third, innovation, not new taxes or punishing global agreements, is the ultimate solution."



DOE SIGNS NEW SMALL MODULAR REACTOR AGREEMENT

Advanced nuclear milestones also continued off Capitol Hill.

DOE's Office of Nuclear Energy Friday **announced a Memorandum of Understanding** between the department, Utah Associated Municipal Power Systems (UAMPS) and Battelle Energy Alliance (BEA) regarding the importance of resilient power generated from small modular reactors.

The MOU highlights DOE's intent to draw from two modules of a 12-module SMR plant intended for construction at Idaho National Laboratory. That plant will use SMR

technology designed by NuScale Power, with UAMPS as the initial commercial customer.

The MOU includes the intent by BEA and UAMPS to sign an agreement to use one of the NuScale modules for INL research, development and demonstration, while DOE and UAMPS will work together to engage local utility provider Idaho Power to supply up to 70MW of power from the project to INL through 2030.

Meanwhile, a nuclear test reactor at INL that can melt uranium fuel rods in seconds **is running again** after a near quarter-century shutdown. The INL reactor has performed 10 tests on nuclear fuel since late last year.

WHAT WE LEARNED IN POLAND

Rich was invited to participate at a U.S.-led event during the recent COP24 global climate summit in Poland. **In his latest blog**, he shares his observations from his trip,

including what climate activists there got right and wrong about the future of clean power:

"It was discouraging – albeit not surprising – to see a number of protesters take much of the attention away from what we consider a practical conversation about using cutting-edge innovation to chart a path forward that marries energy growth and security with a cleaner power supply.

While I understood and share their urgency to address climate change, the emphasis from these protesters on immediately discontinuing the role of fossil fuels appears to be woefully misguided, not to mention rejected by a developing world that is rapidly industrializing and the consensus of scientists who believe that carbon capture technologies must play a role in a zero-emissions future."

The reality, Rich notes, is that global clean development is not accelerating fast enough because we aren't embracing the full tool kit of clean energy options.

But he was encouraged by other dialogue in Katowice, including a group of former Obama administration officials and other climate advocates touting everything from small modular nuclear reactors to directly removing carbon dioxide from the air.

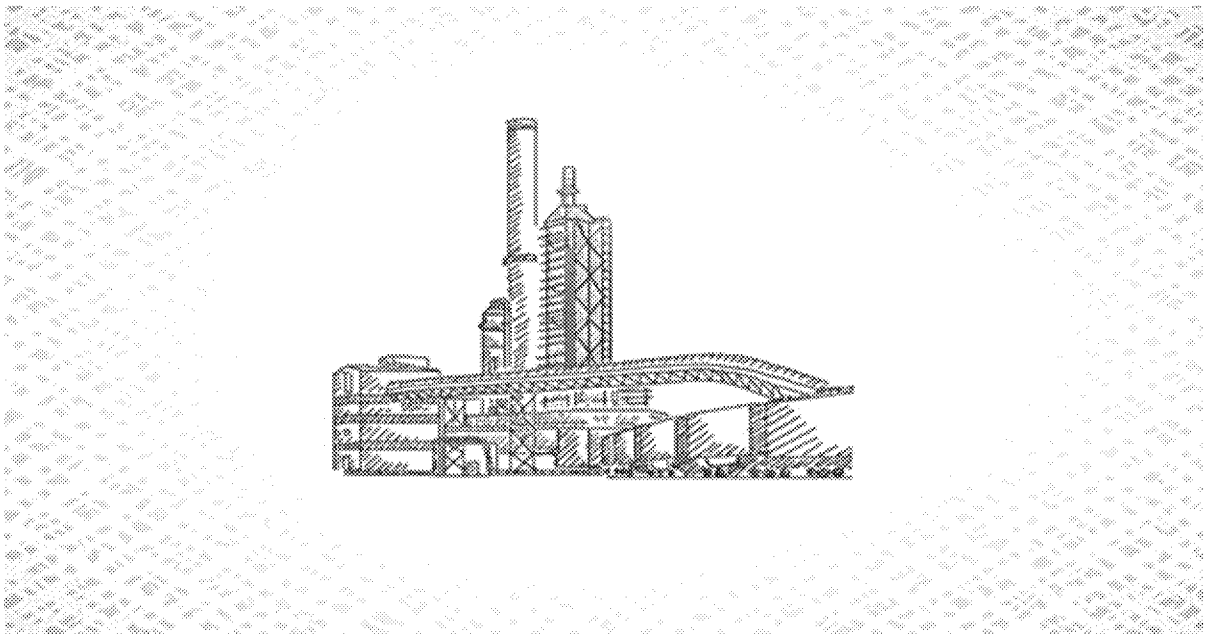
WHAT WE LEARNED IN POLAND

RELATED READS

In **a timely op-ed**, Information Technology & Innovation Foundation Senior Fellow David

Hart and ClearPath's innovation director Spencer Nelson explain why the global Mission Innovation effort must expand to include long-duration energy storage as an important path towards zero-emission power. "American leadership is essential to bend the curve of carbon pollution downward toward zero," they wrote. "A U.S.-powered international initiative to accelerate progress on a technology essential to that push — long-duration energy storage — would demonstrate that leadership."

An early-stage energy technology Loan Programs Office that spawned the Solyndra failure still offers value in accelerating deployment of innovative technologies and is worth keeping as long as it is properly reformed, **writes American Action Reform's Philip Rossetti**. That includes paring back "existing late-stage renewable energy subsidies and use that revenue to turn LPO into a more transparent and competitive program that could better attract applicants," he wrote. "Absent reform, LPO would remain a revenue-neutral or revenue-positive loan guarantee program with few applicants."



IEA: GLOBAL COAL RISE UNDERSCORES CARBON CAPTURE TECH NEED

New **International Energy Agency findings** further underscore the reality that global coal use is on the rise – thanks to a surge in India and elsewhere in Southeast Asia more than offsetting declines in the U.S. and Europe – and that carbon capture technology deployment and use has to step up dramatically. Progress with deploying carbon capture technologies "remains woefully off-track with what is required for a sustainable energy future," IEA warned.

RELATED READS

Rich Powell and ClearPath's clean fossil expert Justin Ong last spring broke down just how important the fix to the Section 45Q tax incentive was – **and why it's not enough** to boost carbon capture

Justin **also opined to Utility Dive** on the broader status of carbon capture tech

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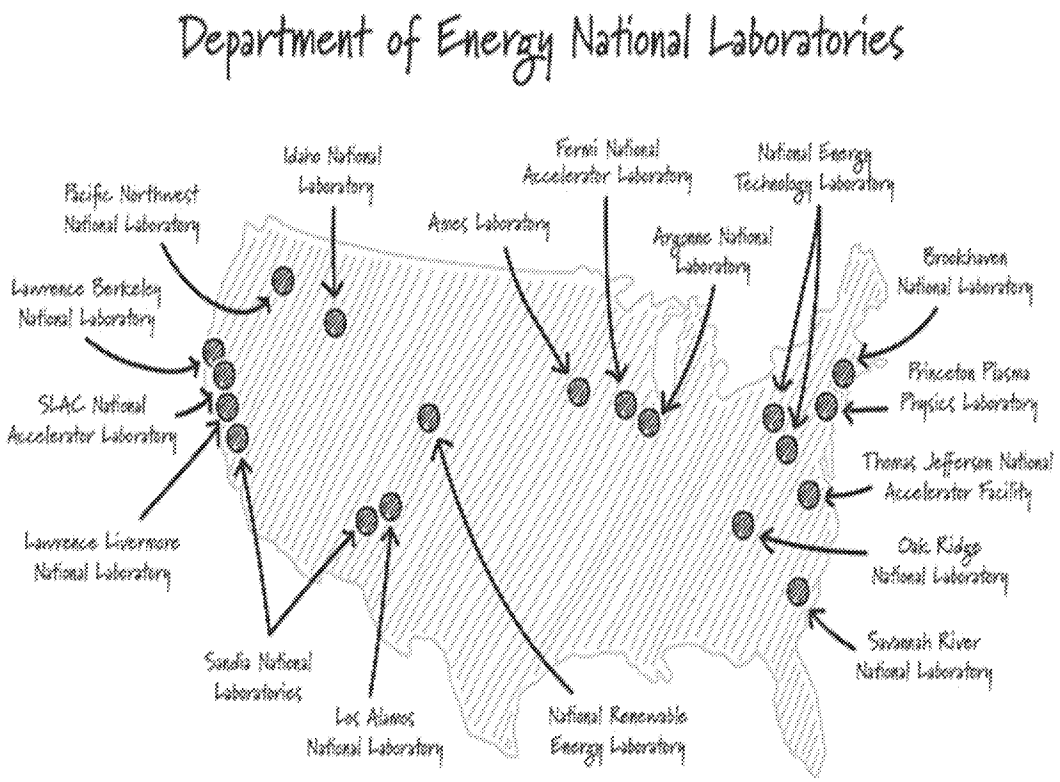

IN PRAISE OF LAMAR ALEXANDER

Senate Energy and Water Appropriations Chairman Lamar Alexander (R-Tenn.), long a powerful voice for clean energy innovation, this week announced he won't seek reelection in 2020.

A major part of his legacy has been ensuring proper investments for Tennessee's Oak Ridge National Lab and for innovation efforts writ large that have made sizable impacts to our nation's clean and reliable power supply and potential.

That includes sizable increases just these last two years for advanced nuclear R&D amid efforts to cut such spending. His technology-inclusive vision has brought a welcome pragmatic voice to the climate and clean energy debates.

Rich Powell: "Sen. Alexander is an innovation lion who will be sorely missed and we look forward to working with him next Congress to ensure his clean energy legacy is further cemented."

NEWS NUGGETS

Alphabet Inc's X moonshot lab **has spun off a new independent energy-storage company**, Malta Inc., which has raised $26 million led by Breakthrough Energy Ventures LLC, a fund backed by Bill Gates, Jeff Bezos, Michael Bloomberg and others. The money will help Malta further develop a system that uses large vats of molten salt and cooler liquid to store electricity generated from variable sources such as solar and wind, Chief Executive Officer Ramya Swaminathan told Bloomberg. The startup likely will need additional funds to build a full facility.

Energy Secretary Rick Perry **backed a new liquefied natural gas deal** between Poland and San Diego-based Sempra, the second such merger with Poland in about a month intended to wean Europe off of Russian gas. The Trump administration presided over a separate deal between Houston-based Cheniere Energy and Poland last month to import U.S. LNG for 20 years.

MISS A WEEK?

RUNDOWN ARCHIVES

Follow us on Twitter: **@JayFaison1**, **@powellrich**, **@ClearPathAction**

View this Rundown online

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This email was sent to jackson.ryan@epa.gov

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Clearpath Foundation, Inc.
611 Maryland Ave NE
Washington, DC 20002

Message

From: Randy Rodgers [randy@urbanelephantmedia.com]
Sent: 3/28/2019 2:14:52 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Call for Presentations - Growing Sustainable Communities Conference

www.GSCDubuque.com

all for Presentations

lline: March 29

is an invitation to submit your application for consideration as a presenter at the **Annual Growing Sustainable Communities Conference**, scheduled to be held e Grand River Center in Dubuque, Iowa on October 24 & 25, 2019. The deadline ubmissions is Friday, March 29.

Presented & hosted

Sponsored by:

Click here to submit your application!

se note: All presentations should include case studies of sustainability focused cts involving municipal governments, educational or health care institutions, non- organizations, and/or high-profile commercial initiatives that significantly impact economies, ecologies and/or address issues of resiliency, social/cultural vibrancy uity.

Don't miss this opportunity to be part of the premier sustainabil conference in the Midwest!

d by the City of Dubuque, Iowa, the conference is intended to teach leaders and staff how to create a balance between environmenta mic and social sustainability in five concurrent tracks of programming.

e-sector, for-profit companies that wish to present are asked to support our conference with one of several sponsorship packages sta
(All packages come with two free passes to the conference.)

s sent to jackson.ryan@epa.gov.

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Message

From: DLT Digest [Marketing@dlt.com]
Sent: 12/7/2018 7:24:11 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: DLT Digest | The Best of 2018

To view this email as a web page, click here

December 2018 | Edition 12

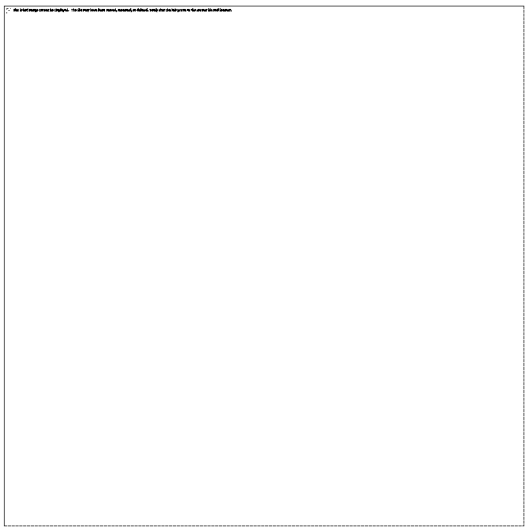
Hello,

This month's edition of DLT Digest recaps 2018's most read articles, assets, and Technically Speaking blogs from our Big Data & Analytics, Cloud, and Cybersecurity domains. As the new year approaches, our promise to you is that we continue to aggregate the most noteworthy and pertinent news for the public sector.

David Blankenhorn,
Chief Technology Officer, DLT

FEATURED STORY

Cyber Hygiene: Five Ways to Make Your Bed



Cyber hygiene may not be glamorous, but it is absolutely indispensable to a solid security program. Watch this on-demand webinar where DLT's Don Maclean explores this topic with representatives from our premier partners Polyverse, Tripwire, and SolarWinds.

READ MORE

WATCH THE WEBINAR

Thought Light

A Monthly Spotlight on Thought Leaders in the Public Sector

Earlier this year, we sat down with Senior Director of Programs, Steve Wells, to discuss how DLT's contract expertise is beneficial to its technology partners and public sector customers. In addition, Steve gives us insight into his extensive military career, of which he recently celebrated a major milestone.

READ THE ARTICLE

READ THE INTERVIEW

Steve Wells
Senior Director of Program Management, DLT

Technically Speaking

Public Sector News and Opinions

DLT's Technically Speaking blog is catered to the Public Sector. Articles range in topics from Cybersecurity and Big Data Analytics to IT Infrastructure and Cloud Computing. We do the heavy lifting to filter out relevant news and topics to keep you up-to-date on the latest happenings. Subscribe to the blog today.

DLT Expands Industry-Leading Cybersecurity Portfolio to Help Government Remain Secure

This post examines how our new and existing partnerships with Symantec, McAfee, SolarWinds, and others are helping public sector agencies stay one step ahead of emerging cyber threats.

Read More

Making the Move to BIM is the Right Decision (Just Like CAD was 30 Years Ago)

BIM for Govies explains the basics, uses, and benefits of BIM, and includes real life examples of successful public sector BIM implementations which your agency can draw on as you transition to BIM.

Read More

eBook: How Government is Overcoming Big Data Challenges

Read this eBook to learn how to overcome data challenges and empower the deployment of modern data applications using the Hortonworks Data Platform (HDP®).

Read More

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Dec

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The Future of Buildling Things

18
Feb

San Diego, CA
AFCEA West 2019

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Message

From: Forbes, Andrew (Inhofe) [Andrew_Forbes@inhofe.senate.gov]
Sent: 12/20/2018 5:07:14 PM
To: Holland, Luke (Inhofe) [Luke_Holland@inhofe.senate.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: RE: Executive Nomination - United States Agency For International Development

Not seeing anything either.

From: Holland, Luke (Inhofe) <Luke_Holland@inhofe.senate.gov>
Sent: Thursday, December 20, 2018 12:02 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Forbes, Andrew (Inhofe) <Andrew_Forbes@inhofe.senate.gov>
Subject: Re: Executive Nomination - United States Agency For International Development

Not that I see but am on my phone. Andrew, do you see a hotline from last night around 6:05 that has SFRC jurisdiction?

Sent from my iPhone

On Dec 20, 2018, at 9:34 AM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

> Do you have one from 6:05 last night?
>
> ---
>
> **From:** Holland, Luke (Inhofe) [mailto:Luke_Holland@inhofe.senate.gov]
> **Sent:** Thursday, December 20, 2018 11:32 AM
> **To:** Jackson, Ryan <jackson.ryan@epa.gov>
> **Subject:** Fwd: Executive Nomination - United States Agency For International Development
>
> Sent from my iPhone
>
> Begin forwarded message:
>
> > **From:** Cloakroom <subscriptions_cloakroom@rep-secretary.senate.gov>
> > **Date:** December 18, 2018 at 8:24:50 AM MST
> > **To:** Undisclosed recipients:;
> > **Subject: Executive Nomination - United States Agency For International Development**
> > **Reply-To:** Cloakroom <subscriptions_cloakroom@rep-secretary.senate.gov>
> >
> > # Hotline
> > TUESDAY, DECEMBER 18, 2018 AT 10:24 AM
> >
> > ## Executive Nomination - United States Agency For International Development
> >
> > UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

PN 2348 - Richard C. Parker, of North Carolina, to be an Assistant Administrator of the United States Ag
for International Development.

Discharge from SFRC and confirm by voice vote.

Please notify the Cloakroom if your Senator would oppose confirmation of the nomination or would like
to speak.

Hotlines are sent from the Senate Republican Cloakroom using the telephone alert system. An email cop
sent to offices and posted on Trunkline 3.0 (**http://gop.senate.gov**) as a convenience, but primary notific
will always come via telephone. If you have questions about Hotlines, unanimous consent items or other
scheduling matters, please call the Cloakroom at (202) 224-6191. Please do not reply to this message.

To change your Trunkline email subscriptions, please visit your **user profile** page.

Message

From: Black, Jonathan (Tom Udall) [Jonathan_Black@tomudall.senate.gov]
Sent: 12/12/2018 7:07:22 PM
To: Lyons, Troy [lyons.troy@epa.gov]
CC: Jackson, Ryan [jackson.ryan@epa.gov]; Palich, Christian [palich.christian@epa.gov]
Subject: RE: Updated WPS/CPA Language

Ok. I shared with only Michal to confirm we're getting the same info.

Will review and stand by.

From: Lyons, Troy <lyons.troy@epa.gov>
Sent: Wednesday, December 12, 2018 1:57 PM
To: Black, Jonathan (Tom Udall) <Jonathan_Black@tomudall.senate.gov>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Palich, Christian <palich.christian@epa.gov>
Subject: Updated WPS/CPA Language

Jonathan—thanks for the chat earlier today. I have just sent Michal the language below re: WPS and CPA. Please keep this close and do not share. This will be formalized and sent with the Administrator's signature once all three of EPA's nominees are confirmed. Please let me know if you have any questions.

"The Agency has been developing proposals concerning the Agricultural Worker Protection Standard (WPS) rule, including changes to the designated representative and minimum age provisions, and application exclusion zone provisions. The Agency has also been developing changes to the Certification of Pesticide Applicators (CPA) rule. Although the subject matter associated with these potential changes has been subject to wide ranging public stakeholder meetings and public comments, EPA will withdraw its OMB submission to propose revisions to these rules and will not make any changes to the designated representative and minimum age provisions."

Troy M. Lyons
Associate Administrator
Office of Congressional & Intergovernmental Relations
U.S. Environmental Protection Agency
Ex. 6

Message

From: Amy Harder [amy@axios.com]
Sent: 12/17/2018 11:14:29 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Exclusive: Oil giant ConocoPhillips backs carbon tax push

Exclusive: Oil giant ConocoPhillips backs carbon tax push

View this email in your browser

Good morning, I'm just barely back from the UN climate talks in Katowice, Poland. My latest column is a unique blend of news from there, Houston,

France and Canada. It's copied below, and here is my other coverage from the conference last week:

- The climate battle: Fuels versus emissions
- Al Gore: Tech capturing CO2 emissions "nonsense"
- Dearth of U.S. leadership at climate conference
- White House: U.S. not alone touting fossil fuels

Cheers,

Amy

Exclusive: Oil giant ConocoPhillips backs carbon tax push

In the latest sign of a global oil industry shifting on climate change, ConocoPhillips is now helping fund a multi-million dollar political advocacy campaign that's lobbying Congress for a tax on carbon emissions.

Why it matters: The move aligns the world's largest independent oil and gas producer with ExxonMobil, the world's biggest publicly traded oil company, which recently contributed $1 million. Given the industry's deep-pocketed influence with Republicans, this backing increases the odds Congress could eventually back the controversial policy.

Driving the news: Houston-based ConocoPhillips has committed $2 million over two years to a political advocacy group called Americans for Carbon Dividends. At $1 million per year, that represents almost half of Conoco's annual lobbying budget in recent years, according to the Center for Responsive Politics.

ConocoPhillips CEO Ryan Lance said in a statement to Axios that his company has been involved in climate discussions for more than a decade. The

company is happy to join these efforts and "continue the dialogue around carbon price policy development in the United States," Lance said.

- Conoco was the only U.S.-based oil company to take part in a coalition a decade ago that supported the last big climate policy Congress considered.
- In March 2017, Lance was one of the first oil CEOs to urge President Trump to stay in the 2015 Paris Climate Agreement. Trump announced his intent to withdraw a few months later.

The big picture: This industry backing for a carbon tax comes at a politically tumultuous time. I spent the past week in the coal-mining city of Katowice, Poland, where world leaders gathered to negotiate details of the 2015 deal.

- Ahead of that annual United Nations conference, a U.N. science panel released a report saying pricing carbon dioxide emissions is essential to reducing emissions to levels that avoid the worst impacts of a warming world.
- Yet the topic on many people's minds at the conference was the violent protests in France over, among other things, rising fuel taxes, which are part of that nation's climate agenda.

"We don't have to look that far to see countries that are experiencing challenges," Catherine McKenna, Canada's environment minister, said at the conference. Canada, which is rolling out a federal carbon tax next month, will be the latest test case and could affect Prime Minister Justin Trudeau's reelection next year.

- Some provinces already have carbon-pricing systems, but for those that don't, the federal government will impose a tax and rebate the proceeds back to citizens.

- "That's going to ensure that households are protected from the impact of energy price increases," Patricia Fuller, Canada's climate-change ambassador, told me in Katowice.

The U.S. policy that Conoco, Exxon and several other energy companies back also sends money back to consumers. Supporters say that's an important distinction. In a Washington state carbon pricing initiative that voters just rejected, the money would have been mostly used to fund clean energy.
To be sure, the oil industry's shift on climate policy is uneven.

- Companies with big natural gas reserves stand to benefit financially, at least in the short term. A carbon tax would boost demand for gas, which burns more cleanly than coal.
- Most big oil companies now publicly support pricing carbon, but BP and Chevron were among those spending $30 million to oppose the Washington state initiative.
- Most producers are members of trade groups whose positions have long resisted climate policies.

"Some of the oil companies have certainly begun to change their posture," Al Gore told me at the conference. The former vice president and long-time climate activist added: "One of the new fronts in this battle is going to be truth in lobbying."
With its funding of the tax push, Conoco is also joining a connected initiative, called the Climate Leadership Council, whose corporate members include Exxon, BP, Royal Dutch Shell and Total.

- That group, whose founders are leaders from previous Republican administrations, doesn't lobby or receive corporate contributions. It's a forum to craft policy details. Another new member: The World Wildlife Fund, which organized events at the climate conference.
- "It's about opening up spaces where we can actually have conversations with all the players that are going to be part of the

decision to get us on a different trajectory," Lou Leonard, a senior vice president at WWF, told me in Katowice.

What's next: Climate change is sure to be a bigger focus for Congress next year with Democrats controlling the House. Whether the issue emerges with bipartisanship or more polarization is uncertain.

- Support among progressives on Capitol Hill for another kind of plan, called the Green New Deal, is gaining steam. It lacks details, but is geared more toward a mandate than a tax.
- Meanwhile, a bipartisan group of House members recently introduced a carbon tax bill that's broadly similar to the plan Conoco just endorsed. They plan to re-introduce it next year.

Amy
energy reporter, Axios
202.906.9629
@AmyAHarder

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Message

From: Vincent Smith [vincent.smith@aei.org]
Sent: 12/6/2018 7:30:16 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: You're invited: Agricultural Policy in Disarray (December 12)

I'd like to invite you to my upcoming event, "Agricultural Policy in Disarray: Reforming the Farm Bill." I recommend that you RSVP soon to reserve a spot.

Thanks, and I'm looking forward to seeing you there!

Best,
Vincent H. Smith
Visiting Scholar and Director, Agriculture Studies
American Enterprise Institute

Agricultural Policy in Disarray: Reforming the Farm Bill

Wednesday, December 12, 2018 | 12:00–1:30 PM

International Food Policy Research Institute | 1201 Eye St. NW | Washington, DC 20005

Cohosted with the American Enterprise Institute (AEI), this seminar will launch the two-volume analysis of farm policy, "Agricultural Policy in Disarray" (AEI Press, December 2018).

Description
The 2018 Farm Bill, if passed, will set US farm policy for the next five years and cost about $87 billion annually. Some of this spending will go toward the US farm safety net, which includes price and income support programs, conservation programs, and crop insurance.

Cohosted with the American Enterprise Institute (AEI), this seminar will launch the two-volume analysis of farm policy, "Agricultural Policy in Disarray" (AEI Press, December 2018). The study's three coeditors, Vincent Smith, Joseph Glauber, and Barry Goodwin, will be discussing the proposed bill and the farm safety net.

Participants
Kimberly Ann Elliott, Center for Global Development
Joe Glauber, International Food Policy Research Institute; American Enterprise Institute
Barry K. Goodwin, North Carolina State University
Erik Lichtenberg, University of Maryland
David Orden, Virginia Tech University
Vincent H. Smith, Montana State University; American Enterprise Institute

Register
RSVP to attend this event.
http://www.ifpri.org/event/agricultural-policy-disarray-reforming-farm-bill

Contacts
For more information, please contact Isabelle Staff at Isabelle.Staff@AEI.org, 202.862.5885.

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 12/18/2018 12:00:19 AM
To: Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
CC: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Subject: Wright - few more
Attachments: Carper 12-17-18SAB IRIS PFAS FACAEPW editsv2.docx

Ryan

I pared back and simplified all of the suggested additions from earlier today. Hopefully this will do the trick.

Thanks
Michal

The Honorable Thomas R. Carper
United States Senate
Washington, D.C. 20510

Dear Senator Carper:

This letter serves to highlight steps the Agency is taking to address issues you have raised as priorities. I appreciate the continued dialogue between my staff and your staff on these issues and look forward to working together to achieve our shared environmental goals.

Per- and polyfluoralkyl substances

I am committed to protecting communities from exposure to hazardous substances and believe that EPA has an obligation to use the regulatory tools at its disposal under existing law to protect people from hazardous exposure to per- and polyfluoralkyl substances. One such step would be to designate any PFAS which, when released into the environment, may present substantial danger to the public health or welfare or the environment as a 'hazardous substance,' as that term is defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Given the currently available toxicological data, I believe that there are several PFAS which warrant consideration for designation as hazardous substances because of the danger they may pose to public health. I intend to announce how EPA plans to proceed with respect to PFOA and PFOS early next year. In addition, as additional toxicological information becomes available for other PFAS, I commit to evaluating that data and will expeditiously seek to designate as a hazardous substance any other PFAS that similarly poses substantial danger to public health or welfare or the environment, as is required by statute.

Formaldehyde

Regarding formaldehyde; EPA will use the IRIS process to develop the formaldehyde assessment. Consistent with the IRIS process, methodologies and typical timelines, the EPA will begin an intra-agency review of the assessment. Once comments are addressed from other program and regional offices (a step EPA will endeavor to complete in the next 30-60 days), the next step is to circulate the draft assessment to interagency reviewers (a step EPA will endeavor to commence within 30 days of the completion of the intra-agency review), and following that, the next step is to circulate the draft assessment for public comment. Finally, although not part

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of the traditional process, Congressional direction on this assessment has included review by the National Academy of Sciences.

Science Transparency

Another issue you have raised is EPA's proposed rule, "Strengthening Transparency in Regulatory Science". The intent of the proposed rule is to establish procedures for strengthening the transparency and reproducibility of scientific information underlying significant EPA actions. Specifically, the proposal seeks to ensure that the data and models underlying EPA regulatory science are "publicly available in a manner sufficient for validation and analysis." The proposal was designed to enhance existing policies on scientific transparency and public access to data in a way that builds public trust and understanding of EPA's regulatory decision making. As I am sure you will agree, under the principles of community right to know, it is important for the EPA to make public the scientific information we use in our rulemaking process.

Since the rule was proposed in April 2018, EPA has received a variety of public feedback that require careful consideration. EPA held a public hearing on July 17, 2018 in Washington, D.C. that hosted nearly 100 speakers, including members of Congress. During the 108-day public comment period, EPA also received over 597,000 written comments, of which over 9,200 are individual, unique comments. EPA, with contractor assistance, is currently in the process of reviewing the unique comments and preparing a summary of those comments to inform the agency's internal regulatory development workgroup's next steps which will include review of the proposal by EPA's Science Advisory Board.

While EPA has received a host of questions on the proposal that are still under thoughtful consideration, I want to address some of the more prevalent questions related to the applicability of the rule and protections for personal information. In the first instance, any reading of the proposed rule should not be understood to apply to scientific studies that pre-date the proposal. Although EPA has received many public comments, consistent with the proposal, we believe it is the best policy to not apply the rule retroactively to studies and science which pre-date the rule. Regarding questions about protection of personal information, nothing in the text of the proposal would compel disclosure of confidential or private information. In fact, the proposed rule reinforces existing legal and ethical protections of such information. The proposal states, "[w]here the Agency is making data or models publicly available, it shall do so in a fashion that is consistent with law, protects privacy, confidentiality, confidential business information, and is sensitive to national and homeland security." I commit to a policy that ensures that in instances in which EPA has determined that disclosing a study's underlying data may implicitly or explicitly identify such information, it will not publicly disclose the data, but will nevertheless fully consider the study during the rule development process. I also commit to a policy that does not exclude studies whose underlying data can't be reproduced due to the fact that the data was drawn from a unique event or circumstance from being considered during the rule development process.

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As I have discussed with you, the scope and volume of public comments, the Agency's review process cannot be rushed, and EPA has a significant amount of work ahead to fully consider and develop any final action. As with all rulemakings issued by EPA, any final action must be based on our statutory authority and a robust, sound record. Where EPA determines further analyses, information or legal authority is needed to support a particular final action, the Agency will issue a supplemental notice seeking further public comment. Based on our preliminary analysis of the comments reviewed, I expect that EPA will need to issue one or more supplemental notices and solicitations of comment. This future process will likely include a specific legal analysis of the statutory provisions that provide EPA with the authority to act in this area as well as an analysis of relevant case law that EPA relied upon to support the rule. The supplemental notice will also address comments filed in response to the original proposal that question whether the proposal is consistent with all provisions of all statutes that EPA administers.

I commit that as the EPA moves forward with its consideration of this proposal, the Agency will ensure that it has complied with all applicable laws, including the Administrative Procedure Act and all of EPA's organic statutes, as well as executive orders, that govern the rule-making process. Further, I commit that the Agency's implementation and use of this rule will comply with the Administrative Procedure Act and Clean Air Act , which require agencies to consider and respond to all significant information presented to them pursuant to a rulemaking, as well as statutes that mandate the use of the best available science, such as the Toxic Substances Control Act and Safe Drinking Water Act .

Federal Advisory Committee Act

I also appreciate your interest in this proposed rule and service on EPA's Federal Advisory Committee Act and science panels and commit to working with your office to provide as much information and briefings as we can provide, and to keep your office fully updated concerning both.

EPA has recruited and received nominations for candidates to serve on its Federal Advisory Committee Act (FACA) panels and EPA's Science Advisory Board. During this Administration, EPA has placed notices in the Federal Register and on its website for nominations and has received hundreds of applications. EPA will continue follow its past practice of obtaining information and recommendations from EPA's career staff to ensure that new appointees to EPA's scientific advisory committees are independent, well-qualified, free of conflicts of interest, come from diverse technical and professional backgrounds and possess expertise in areas that the agency anticipates being relevant in planned or anticipated reviews, and to ensure that the composition of its advisory committees is also in compliance with statutory mandates. The names of all candidates will be posted for a public comment period prior to their selection on EPA's panels. With respect to EPA's Science Advisory Board, eight of its members' 3-year terms expired October 1, 2018 and are eligible for reappointment. It is my intention to re-appoint all eight for a second 3-year term.

The Agency is gathering information to satisfy your request of November 15, 2018 regarding EPA's Science Advisory Board (SAB) and Clean Air Scientific Advisory Committee (CASAC). We anticipate providing you with answers and an initial set of responsive documents on

December 3. We anticipate providing additional responsive documents on a rolling basis thereafter.

Please know that our commitment to maintaining transparency and openness remains. Thank you for the opportunity to work with you on these important issues.

Andrew Wheeler

cc: The Honorable John Barrasso
Chairman

Message

From: The Well News [press@thewellnews.com]
Sent: 12/26/2018 3:10:04 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Thank You, Best of 2018, and Happy Holidays!

Thank You, Best of 2018, and Happy Holidays!

View in browser

The Well NEWS

Straight from The Well

Wednesday, December 26, 2018

Dear Reader,

2018 was an incredible year, and below we've highlighted our most read articles interspersed with some holiday funnies. Before we hop in, we just wanted to take a moment to thank you for being such a valued member of the community we are building.

The Well News was conceived to help break through the hostile rhetoric and focus on issues that are overlooked far too often. There are an untold number of leaders across this country who are working hard to safeguard our future with a sensible and pragmatic approach. Unfortunately, they struggle to communicate with Americans who are continuously bombarded by more extreme viewpoints.

In September, this journey began to bring you coverage of issues, ideas and leaders that are the foundation of progress and stability in our country. We are so grateful to have you on our side. As we enjoy the holiday season, we hope you know how much we appreciate your support in all that we do.

2019 is going to be an important year for all of us and we want to reach as many people as possible. If you believe in sensible and pragmatic approaches to governing, then would you please consider sharing The Well News with family and friends?

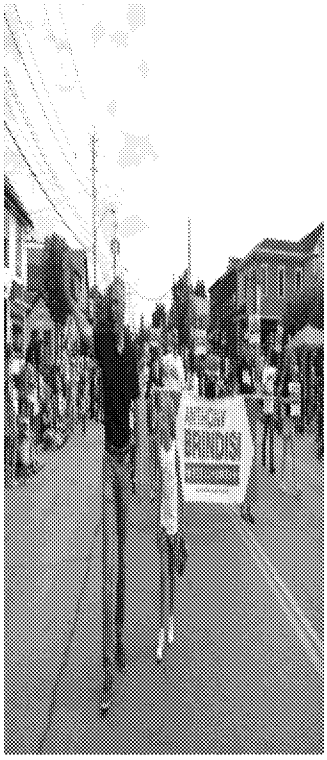
Thank you again, happy holidays and see you in the New Year!
- The Well News Team

MOST READ

The Well News in 2018

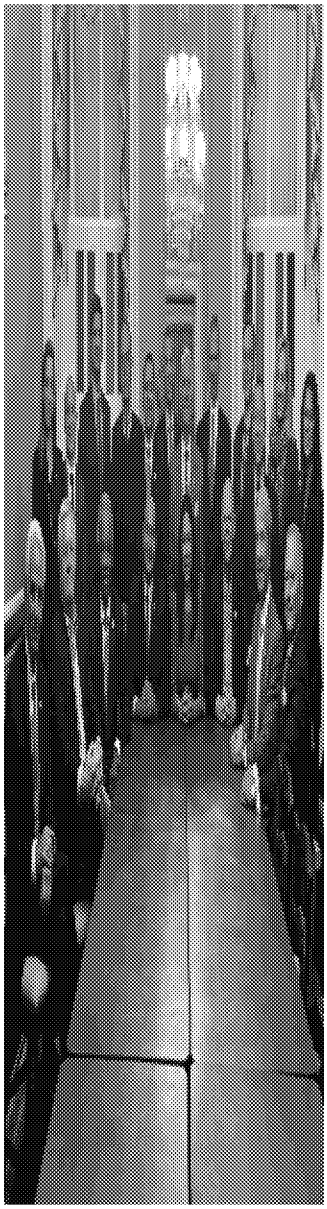
Missing the Moment

It was a cold Midwestern night but the campaign rally was filled to capacity. The man they had all come to see, the one who'd electrified them with promises and slogans, was huddled backstage with his staff, trying to decide whether to go on with the rally despite the hate-fueled shooting that had just occurred 500 miles away.



Political Reformer Anthony Brindisi Focuses on Education, Healthcare in Bid to Unseat Incumbent

Unlike many first time Democratic candidates running for federal office this year, Anthony Brindisi is no stranger to working across the aisle to get things done. While many of his peers have yet to hold office at any level of government, Brindisi already boasts a successful career serving in the New York State Assembly.



Blue Dog Coalition Elects New Leadership

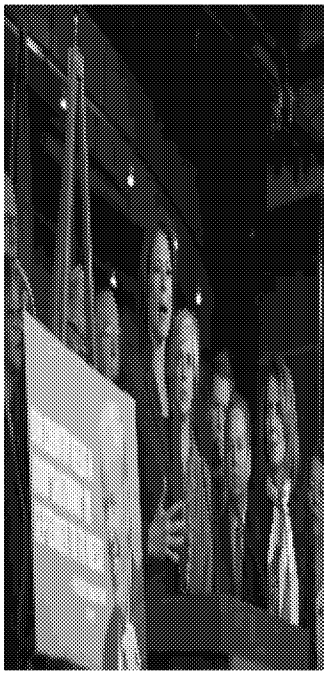
The Blue Dog Coalition of fiscally responsible House Democrats announced its new leadership team as their party is poised to retake the gavel in the 116th Congress. The Blue Dogs, known for their bipartisan approach to legislating, look to play a major role in brokering compromise positions on legislation with a Republican-held Senate and President Trump.

Accomplished Mayor McAdams Hopes to Bring Bipartisan Approach to a Polarized Congress

If you ask Ben McAdams how he has managed to accomplish so much as Salt Lake County Mayor, his answer is pretty simple. Collaboration and bipartisanship. Once a politically toxic approach in many areas of the country, polling shows that public sentiment has shifted significantly in recent years.

Former FBI Agents Say There Are Clues to Follow From Dramatic Kavanaugh Hearing

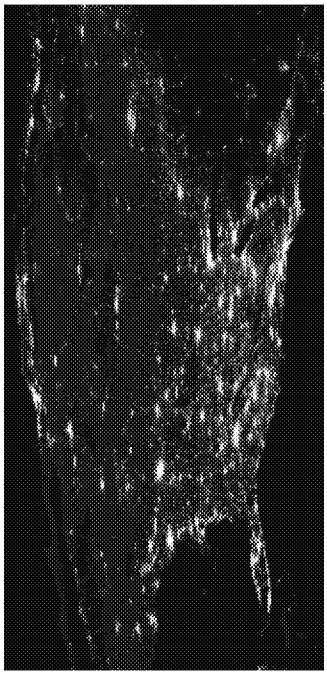
Former FBI officials expressed confidence Friday that agents could quickly interview key witnesses and track down potential leads into Christine Blasey Ford's allegations that Supreme Court nominee Brett Kavanaugh sexually assaulted her when they were both high school students in the early 1980s.



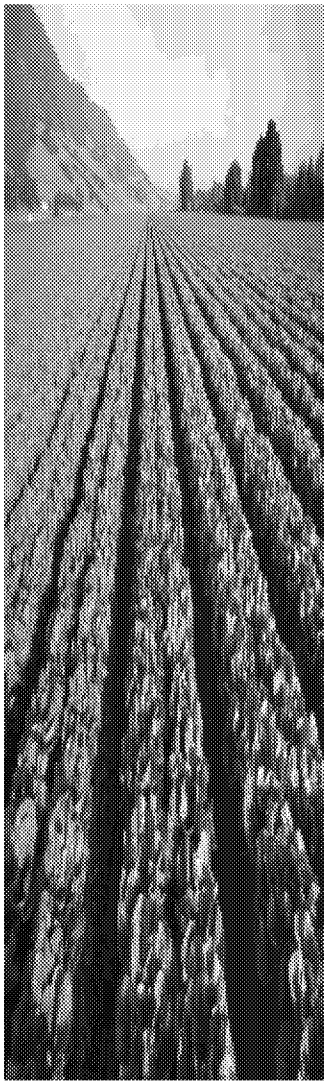
Midwest Democrat With a Knack for Winning Over Trump Voters Seeks Higher Role in Leadership

A few days before the midterm, Rep. Cheri Bustos, D-Ill., — an up-and-coming Democratic leader who was campaigning for one of her party's House candidates — walked into a dimly lit pizza shop for lunch and a break. It didn't take long for her to shift back into campaign mode.

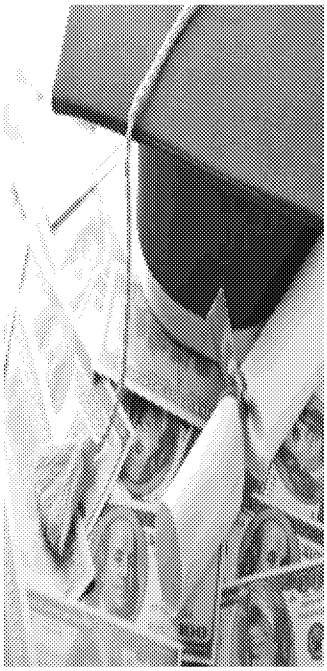
This is How Republicans Lost the House
It was the day of a special election in Pennsylvania's 18th Congressional District, and the Republican candidate was missing. Never mind that national Republicans were spending millions on the Pittsburgh-area race, desperate to avoid a humiliating defeat in a district that President Donald Trump had won by nearly 20 percentage points.



Redistricting Reform: How Tuesday's Election Changed the Map
Elections matter, but so does timing. Flying under the radar, redistricting took a back seat to candidate races across the country, particularly in key states where the repercussions of the midterm elections will be felt for the next decade.

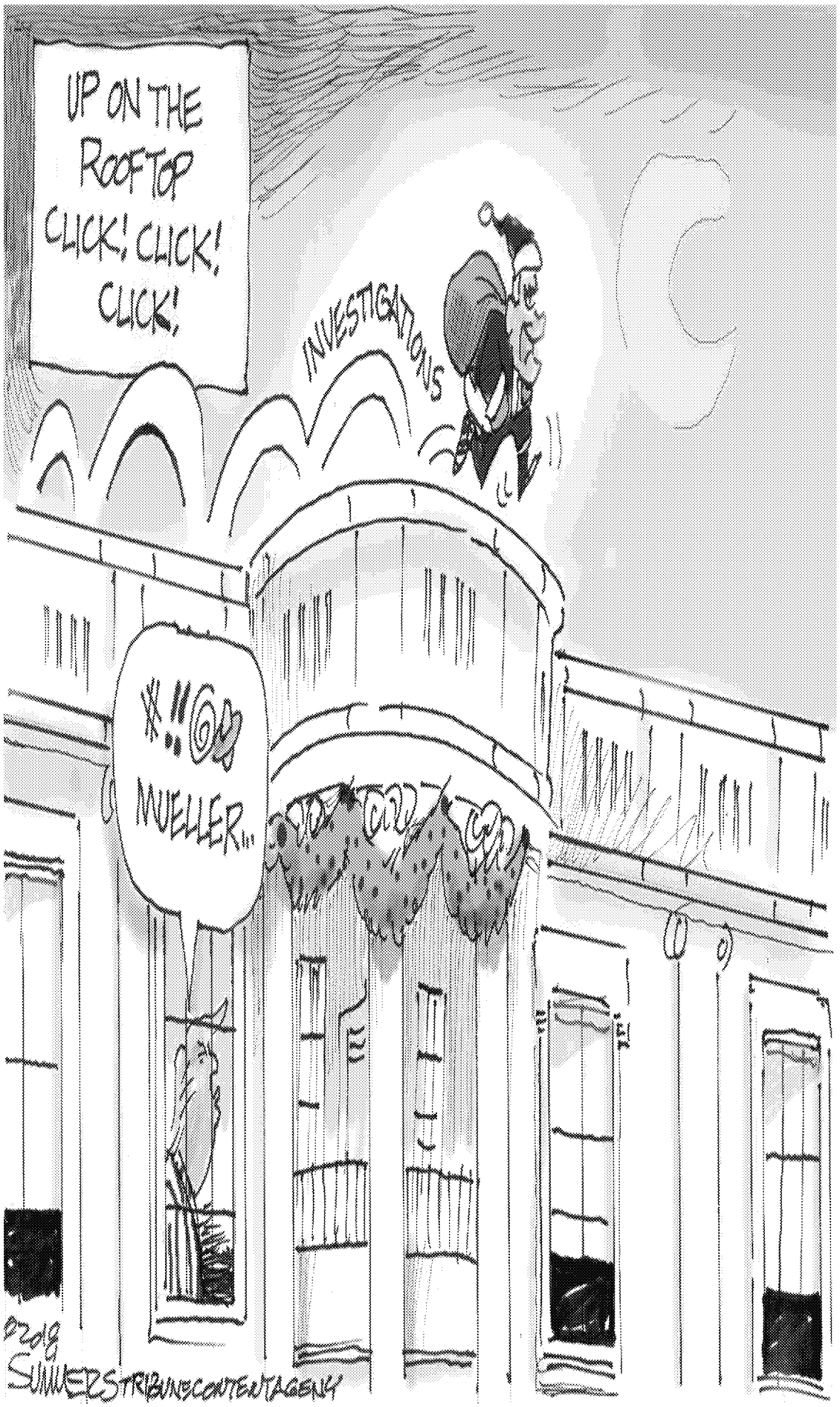


Senators Hail Passage of 2018 Farm Bill
In a Congress marked by gridlock, the 2018 Farm Bill passed yesterday with overwhelming bipartisan support. By a margin 87-13, Senators on both sides of the aisle hailed the bill as success and touted achievements in securing funding for farmers, ranchers, and rural communities.



Isn't It Time We Put Borrower's First?
Silicon Valley likes to talk about disruption. From how you hail a cab to how you shop for groceries, technology developed in Silicon Valley has changed almost every part of the average American's life. But we haven't disrupted one fundamental aspect of most people's lives yet – student loans and how they are regulated, despite rising levels of loans every year.

HOLIDAY CARTOONS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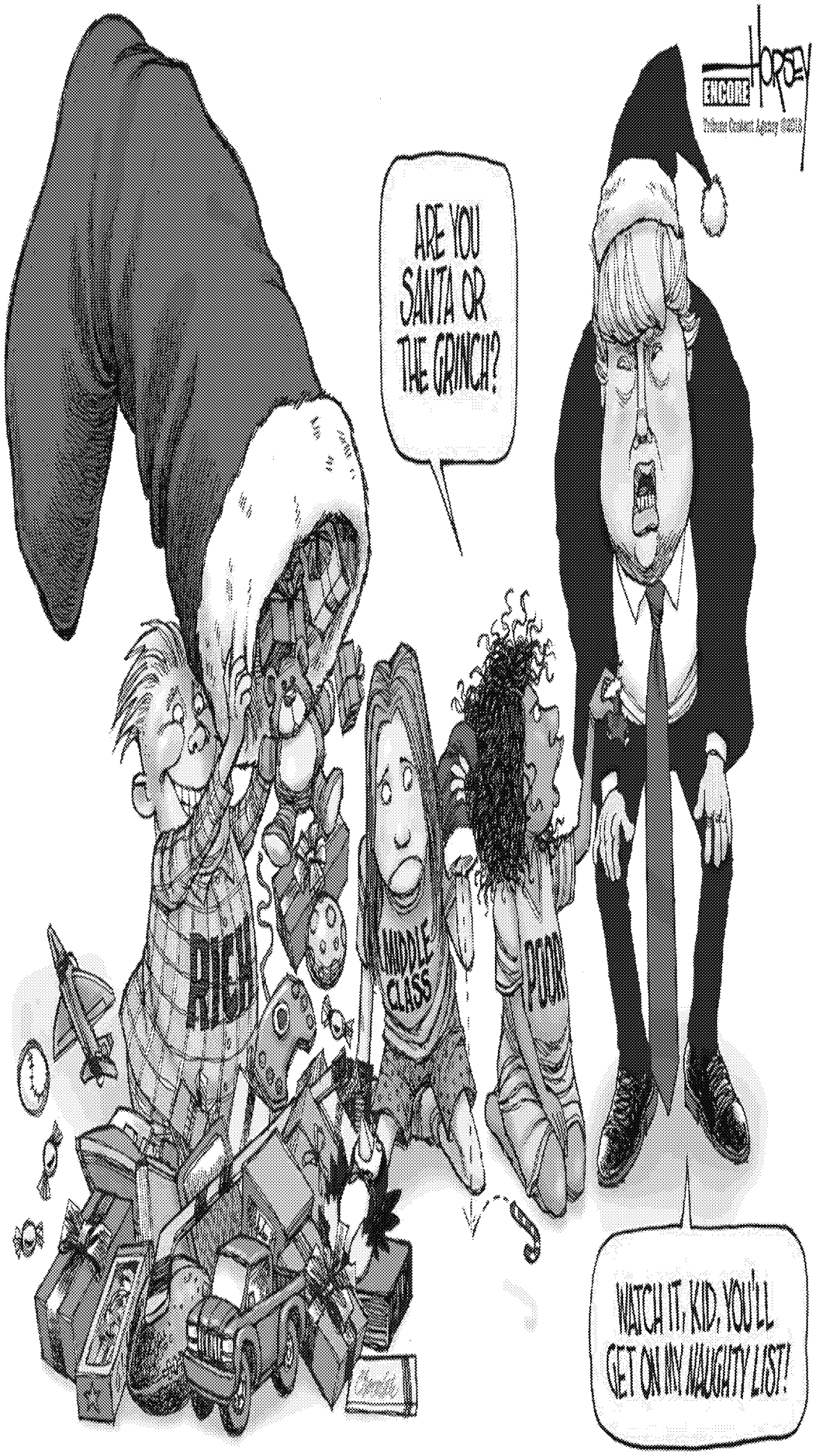
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I'D LIKE Peace on Earth, Good Will TO ALL.
HOW 'BOUT A NICE BORDER WALL, KID?

Christmas at Mar-a-Lago 2018
...BUT IT'S CLEAN COAL, DONALD! HO, HO, HO!
HEY, SANTA! THAT'S IT? A LOUSY LUMP OF COAL?
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Sent: 3/28/2019 2:04:11 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: You're Invited - Federal & Government Webinar: Cybersecurity Survey-What You Told Us – 4/10

Learn More

Register Now: https://solarwinds.adobeconnect.com/ens4whrt0cl6/event/registration.html?campaign-id=DLT

Greetings Ryan,

Federal & Government Webinar: Cybersecurity Survey-What You Told Us

Wednesday, April 10, 2019, 11:00 a.m.–12:00 p.m. ET – **Register Now!**

Please **join us** for a live, interactive webinar to explore the cybersecurity challenges faced by the Federal government based on findings from our fifth Federal Cybersecurity Survey. What are these challenges and how are they changing? Who are the actors threatening the government, and what methods are they using? Are countermeasures effective, and is the government winning or losing the battle? Which mandates, tools, and best practices are most effective? What about monitoring and managing the unique IT security challenges presented by contractors?

Join SolarWinds panelists Jim Hansen, Nicole Pauls, and Destiny Bertucci for a live webinar to review and discuss our most recent Federal Cybersecurity Survey results, and how agencies with comprehensive IT security training are better prepared to detect security threats and manage risk.

Key findings summary:

- Threats from insiders and foreign governments continue to rise
- Contractors and temporary workers present unique IT security challenges
- Agencies are relying on training, access control, and monitoring to reduce risk
- There is a direct relationship between training, and preventing and detecting insider threats
- Agencies are making progress managing risk due to mandates, security tools, and best practices

Schedule conflict? **Sign up** anyway and get a copy of the slides and access to the on-demand presentation after the webcast. All webinar registrants receive a copy of the 2018 Federal Cybersecurity Survey results.

REGISTER NOW!

Register Now: https://solarwinds.adobeconnect.com/ens4whrt0cl6/event/registration.html?campaign-id=DLT

Best Regards,

SolarWinds Team at DLT
ip-solutions@dlt.com

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Sent: 12/7/2018 2:02:07 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Attachments: Paul Merc.vcf

Contact

Full Name: Paul Mercer
Last Name: Mercer
First Name: Paul

Business Phone: 2072872812
Mobile Phone: Ex. 6

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 12/19/2018 8:08:51 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: FW: EDF blog post: The Trump EPA's first risk evaluation under the new TSCA is a house of cards

My favorite part about this EDF blog is this.

(Ironically, it appears that, in order to rely on this information, EPA had to exempt it from being scrutinized using its own TSCA Systematic Review approach. On page 18 of the draft risk evaluation, EPA states that its systematic review approach "is not well suited for the review" of such "correspondences with industry … used to inform the likelihood of exposure," and "[a]s a result, formal data quality evaluation of these references according to the *Application of Systematic Review in TSCA Risk Evaluations* (U.S. EPA, 2018a) was not conducted.")

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

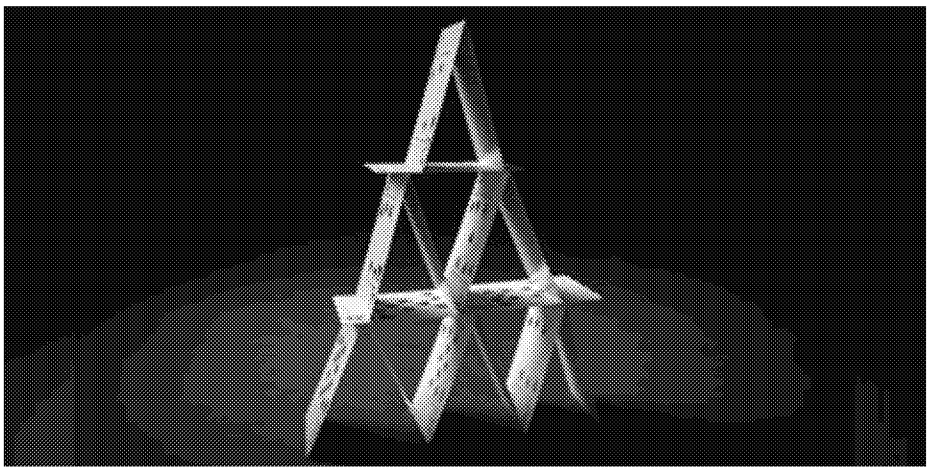
From: Richard Denison <rdenison@edf.org>
Sent: Wednesday, December 19, 2018 10:00 AM
To: Richard Denison <rdenison@edf.org>
Subject: EDF blog post: The Trump EPA's first risk evaluation under the new TSCA is a house of cards

Full post available at http://blogs.edf.org/health/. If you would like to opt out of receiving these emails, please click here.

The Trump EPA's first risk evaluation under the new TSCA is a house of cards

By Richard Denison / Bio / Published: December 19, 2018

Richard Denison, Ph.D., is a Lead Senior Scientist.



I've been blogging about the deep problems surrounding the first draft risk evaluation the Trump Administration's Environmental Protection Agency (EPA) has released under the recently amended Toxic Substances Control Act

(TSCA). This risk evaluation, which is now out for public comment, is on a chemical commonly called Pigment Violet 29, or PV29. Among the many problems that immediately jumped out as we began our review of this draft evaluation are EPA's reliance on clearly inadequate health and environmental hazard data to conclude the chemical is safe, as well as EPA's illegal withholding from the public of the little hazard information it does have.

This post will look at the other half of the risk equation, exposure. EPA has even *less* information on exposures to PV29 than it does on hazard. EPA has no actual data on the levels of PV29 released to or present in air, soil, sediment, surface water, people, other organisms, workplaces or products containing or made from the chemical. It lacks any data from, and hasn't used its authorities to require, monitoring in workplaces or any environmental media.

So what does EPA have? **Read More »**

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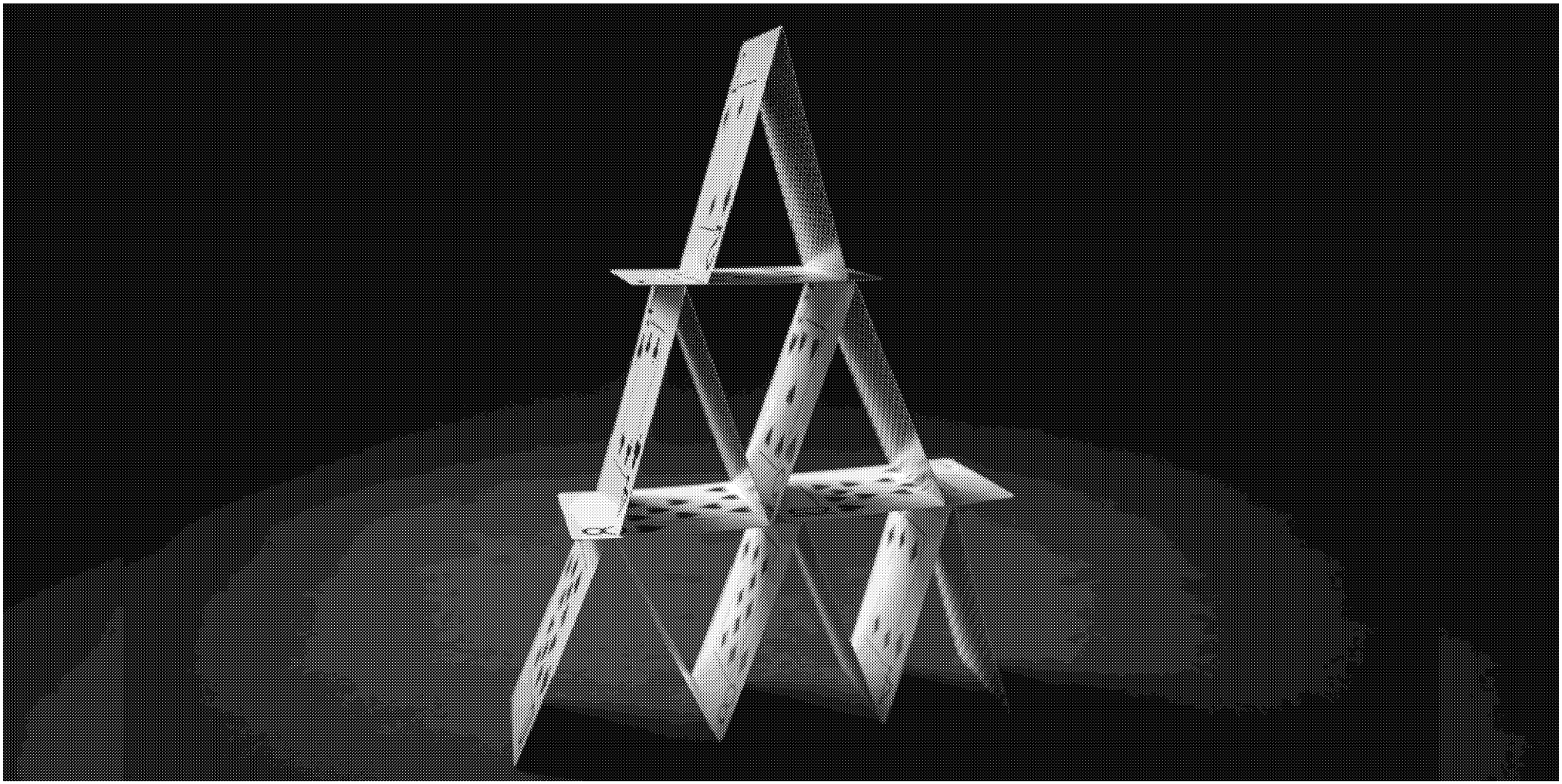

Message

From: Niina Heikkinen [nheikkinen@eenews.net]
Sent: 12/10/2018 8:42:51 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Inhofe alum question

Hello,

I hope you are well. I understand Alex Hergott has left CEQ last week. Given the closeness of the Inhofe alumni network, I was wondering if you knew anything (on background) about what happened and where he is now.

Thanks,
Niina

Niina Heikkinen
E&E News regulations reporter
(w) 202-737-3715
Ex. 6
nheikkinen@eenews.net
@nhheikkinen

Message

From: Wagner, Kenneth [wagner.kenneth@epa.gov]
Sent: 12/19/2018 5:05:04 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; adm15.arwheeler.email [adm15.arwheeler.email@epa.gov]; Molina, Michael [molina.michael@epa.gov]
CC: Ex. 6
Subject: Kenneth Wagner Resignation Letter.pdf
Attachments: Wheeler Resignation Letter.pdf

Andrew and Ryan:

Attached is my resignation letter effective January 9, 2019 that expresses my deep gratitude for all you've done.

Thanks, and let me know if you need anything further.

Ken

Kenneth E. Wagner

Ex. 6

The Honorable Andrew Wheeler
Acting Administrator
US Environmental Protection Agency
1200 Pennsylvania Ave NW
Washington, DC. 20460

December 14, 2018

Dear Administrator Wheeler:

It is with a great spirit of gratitude that I submit my official letter of resignation effective January 9, 2019. I am not leaving EPA as much as I am excited about the opportunity to serve my home state on Oklahoma Governor Kevin Stitt's Cabinet as the Secretary of Energy & Environment.

I can say without reservation that working for you and Ryan Jackson has been the greatest experience of my professional life. The opportunity to witness your leadership and learn from you and Ryan has enriched my life, and prepared me to be a better public servant for the people of Oklahoma. I will be watching and rooting for you as you go through a successful confirmation process. Having gotten to know you, and see your leadership in action, I have no doubt whatsoever that you are the right person to lead this great agency. You love the mission and care about our most valuable asset , the career employees who serve the public. The EPA's future has never been brighter than it is under your leadership.

Again, thank you and I cannot wait to work with you and the EPA to make Oklahoma an example of how you can clean up the air, land, and water while supporting a healthy growing economy.

Respectfully,

Kenneth E. Wagner

cc: Ryan Jackson, Chief of Staff

Message

From: Elaine Angeles Ex. 6
Sent: 12/12/2018 6:48:25 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Avantika Goswami Ex. 6
Subject: Registration Information: All Ivy Environmental and Sustainable Development Career Fair – March 1, 2019

Dear Ryan,

You may have heard from Avantika about the upcoming career fair.

We'd like to formally invite you to join us for the sixteenth annual All Ivy Environmental and Sustainable Development Career Fair on Friday, March 1, 2019. The Fair offers an unparalleled opportunity to recruit graduate and undergraduate students from Brown, Cornell, Columbia, Dartmouth, Harvard, Princeton, the University of Pennsylvania and Yale. Almost 1,000 students attended last year's event. To reserve your spot at the Fair, please register online.

These are students with expertise in business, economics, engineering, law, management, the natural sciences, public administration and policy, and public health. What they share is a passion for sustainability and a desire to work for the strongest organizations in the field.

You need not be hiring immediately to attend the event. Rather, you can use the event to identify prospective candidates so that you can fill future openings more quickly.

For more information and to register now, visit the All-Ivy website.

If you have any questions about this event, please contact Avantika Goswami at Ex. 6
or Ex. 6

Best regards,
Elaine

Elaine R. Angeles
MPA Environmental Science and Policy, Degree Candidate 2019
Columbia University in the City of New York | School of International and Public Affairs
Ex. 6

Message

From: Braniff, Mimi P [mimi.braniff@delta.com]
Sent: 12/6/2018 10:50:53 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: call when you are back in the office?
Attachments: ATT00001.txt

Hey Ryan- it was good to catch up with you earlier this week. Congrats on your up-coming wedding!!

I am guessing you won't be in the office next week, but can we find a time when you are back to talk about our Waiver Petition, as well as what Delta can do to be helpful to you as you consider aircraft emission rules?

Thanks! Mimi

Mimi Braniff | [redacted] | Managing Director–Government Affairs
P: 202.243.3580 | 1212 New York Ave NW Ste 200 Washington, DC 20005

Message

From: Defense Tech Expos [lrinaldo@cox.net]
Sent: 12/5/2018 2:54:30 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Invitation Federal Small Business Procurement & Tech Plus Expo DC

Invitation Federal Small Business Procurement & Tech Plus Expo DC

Defense Tech Expos presents:

Special Invitation

Federal Government Small Business Procurement and Technology Plus Expo

Thursday, February 21st, 2019

Free to attend for Government!

The hours are from 9 a.m. to 2 p.m. Bring coworkers!

RSVP please

Holiday Inn Capitol

by the Smithsonian Museums, U.S. Capitol and L'Enfant Plaza

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550 C Street, SW

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More than 25 exhibitors will demonstrate the latest in energy solutions, cloud technologies, cyber security, Big Data, solar power, disaster recovery, communication technologies, systems integration, wireless, 5G, manufacturers, Hyper Convergence, blockchain, AI. cell phones, greening, network solutions, construction, defense and Homeland Security equipment, engineering, architecture, construction, information technology products, COOP, training, Storage solutions, office automation products, data management, audio and visual equipment, hardware and software, healthcare, hospital applications, medical, software. furniture, office supplies, hospitality and So Much More.

Who will be there?

Most of the Vendors are Small Businesses: 8 (a)'s, Small and Disadvantaged Businesses,

Small and Woman Owned Businesses, Service Disabled Veteran Owned Businesses, Veteran Owned,

Native American Owned, and HUBZones). Some large manufacturers too.

Who should attend?

All Government personnel Everyone, especially: DoD. Civilians, Warfighters, OSDBUs, SADBUs, Small Business Program staff, Program Managers, Project Managers, Engineers, Techs, Scientists, Security,

Contracting Officers, CTOs, CIOs, CXOs, CISSPs, Buyers, purchase card holders, Economists, clerks,

Procurement, IT, Hospital, Medical, Labs, Public Affairs, Public works, SBLOs, PTAC/PTAP, everyone, etc. .

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Education and Information!

What: Federal Small Business Procurement and Technology Plus Expo

Where: Holiday Inn Capitol, Congressional Ballroom next to FEMA

550 C Street, SW, Washington, DC 20024

near L'Enfant Metro and Federal Center Metro station

www.wmata.com

When: 2.21.19

Mark your calendar

Time: 9:00 AM - 2:00 PM

Larry Rinaldo

Defense Tech Expos

More information is available from 703-344-8771

Questions/Please RSVP to: LRinaldo@cox.ne t

Bring associates!

Free table for Government OSDBUs and Small Business Program Managers!

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7630 Provincial Dr Apt 103
McLean, VA 22102-7631

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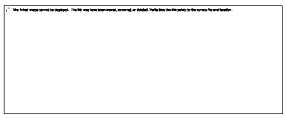


This Tribal image cannot be displayed. The file may have been moved, renamed, or deleted. Verify that the link points to the correct file and location.

Message

From: craigmonk Ex. 6
Sent: 12/5/2018 11:18:54 PM
To: opa@ftc.gov; rjones@ftc.gov; kwalsh@ftc.gov; kshaffer@ftc.gov; nwhitehead@ftc.gov; OIG Hotline [OIG_Hotline@epa.gov]
Subject: Biosolids are NOT safe.
Attachments: 19-p-0002_glance.jpg

et al,

My thanks to the EPA's Office of Inspector General (OIG) for hitting the nail on the head with 19-P-0002. Oh and 2000-P-10, 2004-P-10, 2004-P-00004, 10-P-0006, 12-P-0508, and 14-P-0363 all of which the EPA has done nothing about.

It looks to me like the sewage industry and the EPA's Office of Water are all in a state of shock that the truth it is now in writing from a government agency.

Just in time for these to be rolled out and they ARE going viral along with 19-P-0002

https://www.real.video/5972782789001

https://www.youtube.com/watch?v=uzfNSw9xG-c&feature=youtu.be

I guess this would make the EPA's biosolids web site fit the definiton of "consumer fraud." Consumer fraud includes many fraudulent and misleading practices such as **advertising, marketing, selling, or procuring goods or services**. Consumer fraud occurs when a product or service does not perform as advertised.

This is the EPA's biosolids web site put up on 01-2016

EPA United States Environmental Protection Agency

Environmental Topics | Laws & Regulations | Ab

Biosolids

Sewage sludge standards help protect public health and the environment

Biosolids undergo treatment to make them safe for land application. Learn more

EPA Protection Agency

Environmental Topics | Laws & Regulations

Biosolids

Decades of research demonstrate the safety of biosolids.

Air monitoring equipment tests pollutants from a field where biosolids were applied.

This is from the EPA's Office of Inspector Generals Report No. 19-P-0002 (11-2018)

EPA Unable to Assess the Impact of Hundreds of Unregulated Pollutants in Land-Applied Biosolids on Human Health and the Environment

What We Found

The EPA's controls over the land application of sewage sludge (biosolids) were incomplete or had weaknesses and may not fully protect human health and the environment. The EPA consistently monitored biosolids for nine regulated pollutants. However, it lacked the data or risk assessment tools needed to make a determination on the safety of 352 pollutants found in biosolids. The EPA identified these pollutants in a variety of studies from 1989 through 2015. Our analysis determined that the 352 pollutants include 61 designated as acutely hazardous, hazardous or priority pollutants in other programs.

The EPA identified 352 pollutants in biosolids but cannot yet consider these pollutants for further regulation due to either a lack of data or risk assessment tools. Pollutants found in biosolids can include pharmaceuticals, steroids and flame retardants.

The EPA has reduced staff and resources in the biosolids program over time, creating barriers to addressing control weaknesses identified in the program. Past reviews showed that the EPA needed more information to fully examine the health effects and ecological impacts of land-applied biosolids. Although the EPA could obtain additional data to complete biosolids risk assessments, it is not required to do so. Without such data, the agency cannot determine whether biosolids pollutants with incomplete risk assessments are safe. The EPA's website, public documents and biosolids labels do not explain the full spectrum of pollutants in biosolids and the uncertainty regarding their safety. Consequently, the biosolids program is at risk of not acheving its goal to protect public health and the environment.

SO WHO IS LYING AND WHO IS THE BIG LOSER IN ALL THIS?

YOU!

I would hope after viewing these bits of information that a U.S, Agency would step up and correct the reglatory falue of one of it departments that openly marketing for the multi billion dollar sewage industry with tax dollars.

Craig

U.S. Environmental Protection Agency
Office of Inspector General

19-P-0002
November 15, 2018

At a Glance

Why We Did This Review

We conducted this audit to determine whether the U.S. Environmental Protection Agency (EPA) has and implements controls over the land application of sewage sludge that are protective of human health and the environment.

Sewage sludge is the solid, semisolid or liquid residue generated during the treatment of domestic sewage. When sludge materials go through additional processing steps and treatment to meet EPA standards for land application, they are referred to as biosolids. Treatment is used to reduce the concentration of disease-causing organisms, called pathogens, and to reduce the attractiveness to mosquitoes, flies, fleas, rodents and birds, as well as other disease-carrying organisms. If the resulting product meets regulatory standards, the product can be used for agricultural and residential soil fertilization.

This report addresses the following:

- *Cleaning up and revitalizing land.*

Send all inquiries to our public affairs office at (202) 566-2391 or visit www.epa.gov/oig.

Listing of OIG reports.

EPA Unable to Assess the Impact of Hundreds of Unregulated Pollutants in Land-Applied Biosolids on Human Health and the Environment

What We Found

The EPA's controls over the land application of sewage sludge (biosolids) were incomplete or had weaknesses and may not fully protect human health and the environment. The EPA consistently monitored biosolids for nine regulated pollutants. However, it lacked the data or risk assessment tools needed to make a determination on the safety of 352 pollutants found in biosolids. The EPA identified these pollutants in a variety of studies from 1989 through 2015. Our analysis determined that the 352 pollutants include 61 designated as acutely hazardous, hazardous or priority pollutants in other programs.

The EPA identified 352 pollutants in biosolids but cannot yet consider these pollutants for further regulation due to either a lack of data or risk assessment tools. Pollutants found in biosolids can include pharmaceuticals, steroids and flame retardants.

The Clean Water Act requires the EPA to review biosolids regulations at least every 2 years to identify additional toxic pollutants and promulgate regulations for such pollutants. Existing controls based on the Clean Water Act and the EPA's Biosolids Rule include testing for nine pollutants (all heavy metals), researching for additional pollutants that may need regulation, reducing pathogens and the attractiveness of biosolids to potential disease-carrying organisms, and conducting compliance monitoring activities. The EPA's risk communication regarding biosolids should also be transparent.

The EPA has reduced staff and resources in the biosolids program over time, creating barriers to addressing control weaknesses identified in the program. Past reviews showed that the EPA needed more information to fully examine the health effects and ecological impacts of land-applied biosolids. Although the EPA could obtain additional data to complete biosolids risk assessments, it is not required to do so. Without such data, the agency cannot determine whether biosolids pollutants with incomplete risk assessments are safe. The EPA's website, public documents and biosolids labels do not explain the full spectrum of pollutants in biosolids and the uncertainty regarding their safety. Consequently, the biosolids program is at risk of not achieving its goal to protect public health and the environment.

Recommendations and Planned Agency Corrective Actions

We recommend that the Office of Water address control weaknesses in biosolids research, information sharing with the public, pathogen control and training. Further, we recommend that the Office of Water and Office of Enforcement and Compliance Assurance improve the consistency of compliance monitoring and better record inspection data. The EPA provided acceptable corrective actions and milestone dates in response to eight of the 13 recommendations. Those recommendations are resolved with corrective actions pending. Five of the recommendations in this report (7, 9, 10, 11 and 13) are unresolved with resolution efforts underway.

Message

From: Lyons, Troy [lyons.troy@epa.gov]
Sent: 12/6/2018 10:35:42 PM
To: Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]
CC: Jackson, Ryan [jackson.ryan@epa.gov]; Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Subject: Re: HOTLINE - EXECUTIVE NOMINATION CAL. #1047 AND #1050 EPW NOMINATIONS

Thank you!

Sent from my iPhone

On Dec 6, 2018, at 5:10 PM, Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov> wrote:

FYI.

-MF

Mary Frances Repko
Minority Staff Director
U.S. Senate Committee on Environment and Public Works

Begin forwarded message:

From: "Paone, Stephanie (Dem-Secretary)" <00000071cd5c88db-dmarc-request@LISTS.SENATE.GOV>
Date: December 6, 2018 at 4:45:09 PM EST
To: D-HOTLINE@LISTS.SENATE.GOV
Subject: HOTLINE - EXECUTIVE NOMINATION CAL. #1047 AND #1050 EPW NOMINATIONS

The Majority Leader asks unanimous consent that the Senate proceed to Executive session for the en bloc consideration of the following nominations: Executive Calendar #1047, and #1050.

The Majority Leader then asks consent that the Senate vote on the nominations en bloc with no intervening action or debate; that if confirmed, the motions to reconsider be considered made and laid upon the table en bloc; the President be immediately notified of the Senate's action, that no further motions be in order, and that any statements relating to the nominations be printed in the Record.

ENVIRONMENTAL PROTECTION AGENCY
Exec. Cal. #1047 Peter C. Wright, of Michigan, to be an Assistant Administrator of the Environmental Protection Agency

DEPARTMENT OF COMMERCE
Exec. Cal. #1050 John Fleming, of Louisiana, to be Assistant Secretary of Commerce for Economic Development

If your Senator has any objections please call the Democratic Cloakroom. Do not reply to this e-mail.

Message

From: Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]
Sent: 12/18/2018 10:37:37 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]
Subject: RE: Dunn - one more try

Send us the last and final, and we will do our best. Signed copies are most helpful as soon as you can. We can describe the drafts, but, as you know, it is good to be able to produce the actual signed article when Senators ask.

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, December 18, 2018 5:29 PM
To: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Dunn - one more try

I absolutely appreciate that Safer Choice may be raised by a bipartisan group of lawmakers. We know that questions may be coming about it, and will be happy to answer them.

The Peter Wright and Alex Dunn letters can be send in draft to you for circulation to your members on what we can agree to here in order to get these nominees confirmed. I will attached those momentarily.

Thank you again. I appreciate the back and forth. I hope this works.

Ryan.

From: Repko, Mary Frances (EPW) [mailto:mary_frances_repko@epw.senate.gov]
Sent: Tuesday, December 18, 2018 5:10 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Dunn - one more try

Ryan,

Thanks for these edits. If you will sign and send a copy, we will request a hotline and do our best to use the information and see where we get in clearing the Senator concerns we know that we have at this time.

Also, just flagging for you that an EPA commitment to the continuation of Safer Choice is not a question that is going away. Nominees in the next Congress should expect to be questioned about it from the Democratic side of the dais. I know that this has been a long and difficult letter process. I'd welcome, at a later time, a better understand of the agency's sensitivities to commit to continuing a voluntary program subject to Congressional authorization and direction. That seems like an easy one to commit to.

If you could send as soon as you can, I'll make the hotline request.

-MF

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, December 18, 2018 4:23 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>

Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Subject: RE: Dunn - one more try

We can accept:

- The May 31 date change
- Text at the end of that page to read, "each PMN reviewed and subject to a final determination, and will make available all underlying documents supporting EPA's risk determinations, as soon as practicable, with a goal of making this information public as close in proximity as possible to when a final determination is communicated to the PMN submitter."
- And the "and, at the same time" language in the NAS paragraph

But like with the Peter Wright letter, I cannot accept any further changes. I have to move on at this point. This letter is significant, and we cannot continue to talk about more changes.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Monday, December 17, 2018 6:55 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Lyons, Troy <lyons.troy@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: Dunn - one more try

Ryan

Thanks for chatting about the difficulty of getting accurate read-outs of timeline possibilities from EPA staff given resource and other constraints. This is the cleaned up version of the document we have been editing, with many of the issues you had concerns about removed, some of the solutions we talked about incorporated as best I could, and a couple of things we did not resolve per se but which I continue to believe are important to our Members that do not, in our view, represent unreasonable expectations.

Take a look at let me know what you think – we do want to get this done.

Thanks
Michal

Message

From: Holland, Luke (Inhofe) [Luke_Holland@inhofe.senate.gov]
Sent: 12/20/2018 4:34:07 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Fwd: Executive Nominations - Department of State

McCarter is who we want done.

Sent from my iPhone

Begin forwarded message:

From: Cloakroom <**subscriptions_cloakroom@rep-secretary.senate.gov**>
Date: December 17, 2018 at 3:30:36 PM MST
To: Undisclosed recipients:;
Subject: Executive Nominations - Department of State
Reply-To: Cloakroom <**subscriptions_cloakroom@rep-secretary.senate.gov**>

Hotline

MONDAY, DECEMBER 17, 2018 AT 05:30 PM

Executive Nominations - Department of State

DEPARTMENT OF STATE

Cal. #1216 - Kyle McCarter, of Illinois, to be Ambassador of the United States of America to the Republic of Kenya.

Cal. #1217 - Michael S. Klecheski, of New York, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Mongolia.

Cal. #1218 - Matthew John Matthews, of Virginia, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to Brunei Darussalam.

Cal. #1219 - Earle D. Litzenberger, of California, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Azerbaijan.

Cal. #1220 - Sarah-Ann Lynch, of Maryland, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Co-operative Republic of Guyana.

Cal. #1221 - Christopher Paul Henzel, of Virginia, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Yemen.

Cal. #1222 - Lynne M. Tracy, of Ohio, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Ambassador of the United States of America to the Republic of Armenia.

Cal. #1223 - Arthur B. Culvahouse, Jr., of Tennessee, to be Ambassador of the United States of America to the Commonwealth of Australia.

Individual limited time agreements followed by a vote on the individual nomination.

Please notify the Cloakroom if your Senator would oppose confirmation of any of the nominations or would like time to speak.

Hotlines are sent from the Senate Republican Cloakroom using the telephone alert system. An email copy is sent to offices and posted on Trunkline 3.0 (**http://gop.senate.gov**) as a convenience, but primary notification will always come via telephone. If you have questions about Hotlines, unanimous consent items or other floor scheduling matters, please call the Cloakroom at (202) 224-6191. Please do not reply to this message.

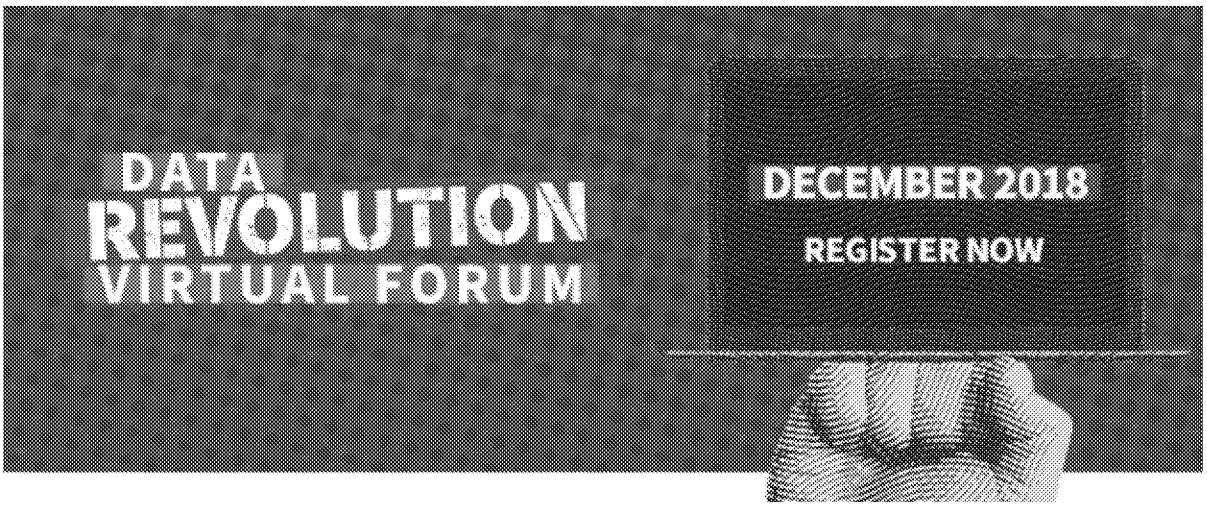
To change your Trunkline email subscriptions, please visit your **user profile** page.

Message

From: Qlik [QlikWebinars@qlik.com]
Sent: 12/5/2018 10:55:55 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Last chance to register for the Qlik Virtual Forum 2018

Qlik LEAD WITH DATA

Join the Data Revolution Virtual Forum
December 6, 2018



Hello

Register for the Data Revolution Virtual Forum

There's a data revolution taking place. Leaders across every industry are using data to enrich every decision across every part of their organizations. And it's putting them ahead. Way ahead.

This is your last chance to hear from them - and discover how you too can lead with data.

Register now >>

Join this free online event to hear from the experts, explore the products, and see the solutions that will fast-track your business results.

Why sign up?

- Find out what AI means for analytics and how you can embrace both
- Discover how to drive data literacy across your enterprise

- Hear all about Third-Generation BI, Qlik's unique approach to it – and most importantly, what it means to you
- See the essential products and solutions to help you accelerate your digital transformation

2018 Data Revolution Virtual Forum

Join the Data Revolution Virtual Forum
December 6, 2018
10:00 AM EST - 1:00 PM EST

Register Now

Forward to a Colleague >>

Meet the Data Trailblazers

- **Rick Jackson**, Chief Marketing Officer at Qlik and host of the Data Revolution Virtual Forum
- **Donald Farmer**, Principal of TreeHive Strategy on AI and analytics
- **Martha Bennett**, Principal Analyst at Forrester Research, talks data literacy in the workplace
- **Nick Blewden**, Head of Data Product Development and **Colin Campbell**, Data Product Developer, tell Lloyd's of London's own analytics story
- **Rick Jackson**, Chief Marketing Officer and **Joe Bickley**, Director, Product Management from Qlik discuss the new leaders of the Analytics Economy
- **Jordan Morrow**, Global Head, Data Literacy, from Qlik presents key data literacy takeaways

About the Virtual Forum

The Data Revolution Virtual Forum is your opportunity to learn more about the latest advancements in analytics. Like a live trade show or conference, our virtual forums are live events featuring scheduled presentations from keynote speakers, interactive sessions with thought leaders and subject matter experts, plus genuinely helpful product demonstrations.

But more importantly, it's your chance to discover how analytics can transform your business. The best part? It's free and you can join from any device, anywhere.

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This e-mail was sent to: jackson.ryan@epa.gov. QlikTech, Inc. | 150 North Radnor Chester Road, Suite E220 | Radnor, Pennsylvania 19087 | 1 (888) 828-9768

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Message

From: Holland, Luke (Inhofe) [Luke_Holland@inhofe.senate.gov]
Sent: 12/20/2018 4:33:31 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Fwd: Executive Nomination - Department of State

This one may be your best bet.

Sent from my iPhone

Begin forwarded message:

From: Cloakroom <**subscriptions_cloakroom@rep-secretary.senate.gov**>
Date: December 17, 2018 at 4:08:50 PM MST
To: Undisclosed recipients:;
Subject: Executive Nomination - Department of State
Reply-To: Cloakroom <**subscriptions_cloakroom@rep-secretary.senate.gov**>

Hotline

MONDAY, DECEMBER 17, 2018 AT 06:08 PM

Executive Nomination - Department of State

DEPARTMENT OF STATE

Cal. #1225 - Carol Z. Perez, of Virginia, a Career Member of the Senior Foreign Service, Class of Minister-Counselor, to be Director General of the Foreign Service.

Individual limited time agreement followed by a vote on the individual nomination.

Please notify the Cloakroom if your Senator would oppose confirmation of the nomination or would like time to speak.

Hotlines are sent from the Senate Republican Cloakroom using the telephone alert system. An email copy is sent to offices and posted on Trunkline 3.0 (**http://gop.senate.gov**) as a convenience, but primary notification will always come via telephone. If you have questions about Hotlines, unanimous consent items or other floor scheduling matters, please call the Cloakroom at (202) 224-6191. Please do not reply to this message.

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Message

From: Claudia Hosky [claudia@fedinsidernews.com]
Sent: 12/4/2018 2:14:07 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Webinar on Federal Acquisition featuring DHS, 12/6, 1 CPE

Hi Ryan,

Twenty-five years ago, the Federal Acquisition Streamlining Act (FASA) opened the door for government to procure commercially available technology "to the maximum extent practicable" to meet agency requirements.

Join us for this 1-hour video webinar featuring **Soraya Correa**, Chief Procurement Officer of DHS, and explore the rationale behind the imperative that agencies favor commercially available items as their first choice. Attendees will receive a Training Certificate for 1 CPE credit from the George Washington University, CEPL for their participation.

COMPLIMENTARY REGISTRATION:
Ex. 6
ALTERNATE LINK: www.fedinsider.com

WEBINAR TOPIC
FASA Revisited: Precedents in Commercial Item Preference

DATE: THURS, 12/6
TIME: 2:00 PM ET / 11:00 AM PT
DURATION: 1-Hour
CREDIT: 1 CPE from the George Washington University, CEPL
COST: Complimentary

DISTINGUISHED SPEAKERS

- **SORAYA CORREA**, Chief Procurement Officer, Department of Homeland Security
- **BILL GREENWALT**, Senior Fellow, Atlantic Council, Scowcroft Center on International Security
- **JARED SERBU**, (Moderator), Deputy Editor, Federal News Network

PRESENTED BY: FedInsider News, WTOP, Federal News Network, The George Washington University Center for Excellence in Public Leadership, and Palantir

Interested in joining but can't attend? *Register now to receive an email when the archive is available. (You can still earn CPE credit for watching the archive.)*

Looking forward to seeing you online!

Claudia M. Hosky
Publisher, FedInsider
Work: (202) 237-0300
Claudia@hosky.com

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Message

From: Avantika Goswami Ex. 6
Sent: 12/19/2018 4:40:46 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Interview Ivy League Sustainability Graduates On-Site At Columbia University

Signing up for the All Ivy Environmental and Sustainable Development Career Fair will not only grant you access to speak with 1000+ sustainability students from 8 Ivy League schools, but will also offer a platform to interview them for specific positions in your organization. If you select our **Registration and On-Campus Interview Package,** we will post the positions to students in advance, schedule the interviews and provide private space on campus for you to conduct them.

Interviews may be conducted for specific open positions or to assess candidates for their general fit for the organization.

Registration and On-Site Interview Package

* Private Sector- $550
* Non-Profit- $450
* Government- $450
** Additional Recruiter- $100*

Please note that signing up for this package offers you a table at the fair as well as interview space.

Register Now

Feel free to contact me directly with any questions at Ex. 6 or Ex. 6

Warm regards,
Avantika Goswami
Program Manager
The Earth Institute, Columbia University

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You are invited by the Earth Institute at Columbia University.

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2910 Broadway

New York, NY 10025

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unsubscribe from this list update subscription preferences

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 12/18/2018 6:49:29 PM
To: Lyons, Troy [lyons.troy@epa.gov]
CC: Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: Hotline of Alex Dunn

Thanks - we don't see their hotlines. Appreciate you sharing.

Sent from my iPhone

On Dec 18, 2018, at 1:45 PM, Lyons, Troy <lyons.troy@epa.gov> wrote:

In case you have not seen—the Republicans have run the hotline on Alex.

Hotline

TUESDAY, DECEMBER 18, 2018 AT 10:36 AM

Executive Nomination - Environmental Protection Agency

ENVIRONMENTAL PROTECTION AGENCY

PN 2478 - Alexandra Dapolito Dunn, of Virginia, to be Assistant Administrator for Toxic Substances of the Environmental Protection Agency.

Discharge from EPW and confirm by voice vote.

Please notify the Cloakroom if your Senator would oppose confirmation of the nomination or would like time to speak.

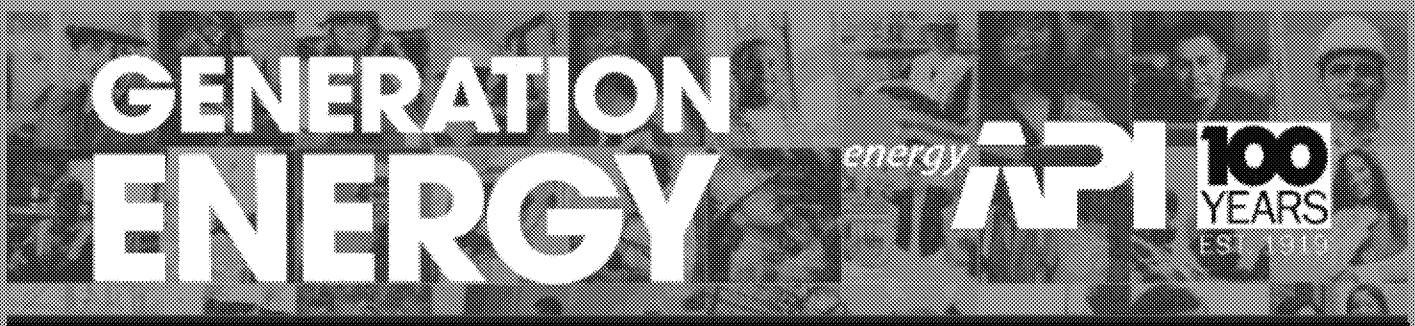
Hotlines are sent from the Senate Republican Cloakroom using the telephone alert system. An email copy is sent to offices and posted on Trunkline 3.0 (**http://gop.senate.gov**) as a convenience, but primary notification will always come via telephone. If you have questions about Hotlines, unanimous consent items or other floor scheduling matters, please call the Cloakroom at (202) 224-6191. Please do not reply to this message.

To change your Trunkline email subscriptions, please visit your **user profile** page.

Troy M. Lyons
Associate Administrator
Office of Congressional & Intergovernmental Relations
U.S. Environmental Protection Agency
Ex. 6

Message

From: Mike Sommers [registrar@api.org]
Sent: 12/10/2018 2:43:34 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: You're Invited to API's State of American Energy 2019



The American Petroleum Institute invites you to

The 2019 State of American Energy luncheon – celebrating Generation Energy

We are in the midst of Generation Energy. More natural gas and oil is produced in the United States than any other country in the world. At the same time, U.S. carbon dioxide emissions are at their lowest levels in a generation, largely because of the growing role played by clean natural gas. Our industry is an economic engine, supporting 10.3 million jobs – to produce, deliver and refine natural gas and oil – as well as jobs associated with energy development and the personal spending of our workers.

Guided by smart policies and regulations that unleash innovation and progress, natural gas and oil are playing a powerful role in America's economic progress and will for generations to come.

Join me and industry leaders from coast to coast at the 2019 State of American Energy luncheon.

Sincerely,

MIKE SOMMERS
President and CEO, API

RSVP

BY DECEMBER 31st
This invitation is non-transferable.

WHEN

TUESDAY, JANUARY 8, 2019
11:30 A.M.– 1:30 P.M.

WHERE

RONALD REAGAN BUILDING AND INTERNATIONAL TRADE CENTER
ATRIUM BALLROOM
1300 PENNSYLVANIA AVENUE, NW
WASHINGTON, DC 20004
Please use entrance on 14th Street

energy API | POWER PAST IMPOSSIBLE.ORG

This event has been designed to comply with the gifts and ethics rules of the U.S. Senate and House of Representatives as a "widely attended event." Employees of the executive branch may wish to consult their Designated Agency Ethics Official about any rules that may apply to their attendance at this event.

powered by cvent

Message

From: Mike Sommers [registrar@api.org]
Sent: 12/17/2018 3:40:26 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: You're Invited to API's State of American Energy 2019

The American Petroleum Institute invites you to

The 2019 State of American Energy luncheon – celebrating Generation Energy

We are in the midst of Generation Energy. More natural gas and oil is produced in the United States than any other country in the world. At the same time, U.S. carbon dioxide emissions are at their lowest levels in a generation, largely because of the growing role played by clean natural gas. Our industry is an economic engine, supporting 10.3 million jobs – to produce, deliver and refine natural gas and oil – as well as jobs associated with energy development and the personal spending of our workers.

Guided by smart policies and regulations that unleash innovation and progress, natural gas and oil are playing a powerful role in America's economic progress and will for generations to come.

Join me and industry leaders from coast to coast at the 2019 State of American Energy luncheon.

Sincerely,

MIKE SOMMERS
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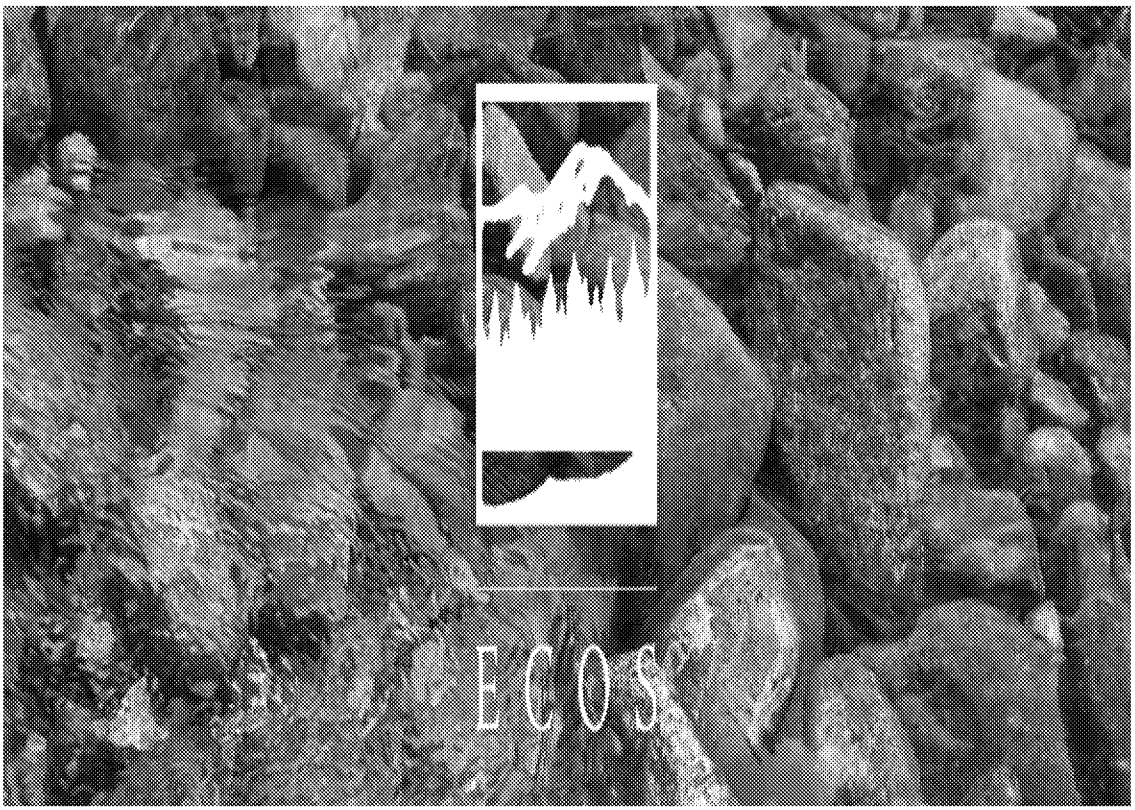
Message

From: ECOS [ecos@ecos.org]
Sent: 12/14/2018 8:44:07 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: UPDATED LINKS: U.S. EPA Acts on WOTUS & Ozone as States Move on PFAS, Arsenic, & More

UPDATED LINKS: U.S. EPA Acts on WOTUS & Ozone as States Move on PFAS, Arsenic, & More

ECOSWIRE | Vol. 20 No. 47 View this email in your browser



ECOSWIRE

Friday, December 14, 2018

Vol. 20 No. 47

Table of Contents

- U.S. EPA & Army Propose to Narrow 'Waters of the United States' Definition
- U.S. EPA Finds CSAPR States Meet 'Good Neighbor' Obligations for 2008 Ozone

- Get a Jump on the New Year by Registering for the 2019 ECOS Spring Meeting
- Transitions
- State News You Can Use
- Funding
- Need-to-Know News in Water & Waste
- E-Enterprise for the Environment
- ITRC
- Upcoming Events

U.S. EPA & Army Propose to Narrow 'Waters of the United States' Definition

This week, U.S. EPA and the Department of the Army announced a new proposed definition of “waters of the United States” intended to clarify federal authority under the Clean Water Act, and replace the Obama Administration's 2015 definition. The proposal is the second of a two-step process to review and revise the current definition, as directed by President Trump in a February 2017 Executive Order.

Under the agencies' proposal, traditional navigable waters, tributaries to those waters, certain ditches, certain lakes and ponds, impoundments of jurisdictional waters, and wetlands adjacent to jurisdictional waters would be federally regulated. Waters that would not be classified as "waters of the United States" include: features that only contain water during or in response to rainfall (e.g., ephemeral features); groundwater; many ditches, including most roadside or farm ditches; prior converted cropland; stormwater control features; and waste treatment systems.

In response to requests from some states, EPA and the Army are exploring ways the agencies can work with their state, tribal, and federal partners to develop a data or mapping system that could clarify the understanding of the presence or absence of jurisdictional waters. The agencies will take comment on the proposal for 60 days following publication in the *Federal Register*. The pre-publication version is available here and fact sheets on the proposed rule are available here. [Piper]

U.S. EPA Finds CSAPR States Meet 'Good Neighbor' Obligations for 2008 Ozone

On December 6, U.S. EPA finalized a determination that the 2016 Cross-State Air Pollution Rule Update for the 2008 Ozone National Ambient Air Quality Standards (NAAQS) fully addresses the Clean Air Act's "good neighbor" requirements for 20 states with respect to the 2008 ground-level ozone standard.

Based on modeling released in 2017, EPA finds that once the 2016 CSAPR update is fully implemented, the 20 upwind states will not contribute significantly to nonattainment or interfere with the maintenance of the 2008 ozone standards in any downwind state. Thus EPA and the CSAPR-region states are not obligated to establish additional requirements for sources to further reduce transported ozone pollution.

For more information, please see EPA's Final CSAPR Close-Out webpage. [Poole]

Get a Jump on the New Year by Registering for the 2019 ECOS Spring Meeting

Get a jump on the New Year and register today for the 2019 ECOS Spring Meeting in Crystal City, Virginia. Join us **April 8-10** for a firsthand look at *Partnership in Action: Advancing Collaboration, Certainty, & Confidence*!

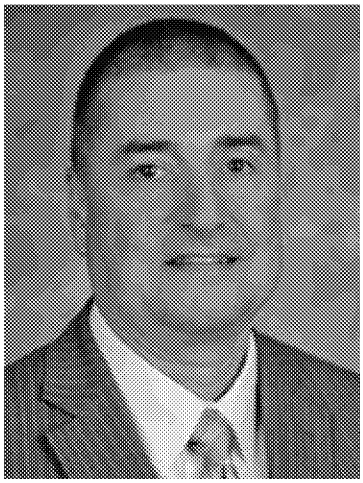
Having secured a seat at the table through the ECOS Cooperative Federalism 2.0 initiative, states now are working with U.S. EPA and other federal partners to deepen shared decision-making, shared problem-solving, and shared programmatic development. Featured speakers on these matters will include ECOS members, EPA Acting Administrator Andrew Wheeler (invited), and other federal officials and congressional leaders.

In the spirit of collaboration, the gathering also will include a dinner reception at the Canadian Embassy on **April 9**.

See the draft agenda and registration, hotel, and contact information here. Register by **March 1** to take advantage of the early bird rate, and reserve at the special ECOS rate at the Renaissance Arlington Capital View Hotel by **March 18** or while supply lasts. [Parisien]

Transitions

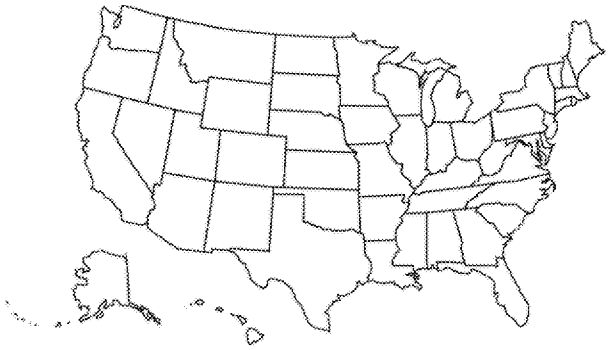
Former Pennsylvania Leader Tapped to Head U.S. EPA Chesapeake Bay Program



Dana Aunkst

U.S. EPA announced this week the selection of Dana Aunkst, former Acting Secretary and Deputy Secretary of the Pennsylvania Department of Environmental Protection, as the new Director of EPA's Chesapeake Bay Program. Aunkst has 33 years of environmental and regulatory experience in private industry and local and state government. His appointment will be effective December 23.

For more information about the Chesapeake Bay restoration, click here. [Parisien]



State News You Can Use

Michigan Reports PFAS Progress at One-Year Mark of Initiative

---

Washington Launches New Online 'Dirt Alert' Map

Iowa Installs Stream Crossing Signs to Highlight Source Waters, Promote Stewardship

---

New Tire Fees Fund Nevada Recycling Projects

Funding

Appropriations Standoff Continues as December 21 Deadline Looms

With roughly one-quarter of the federal government, including U.S. EPA, under a Continuing Resolution (CR) that expires December 21, there does not appear to be an immediate path forward to resolve the dispute over funding for a border wall and pass 2019 Appropriations bills for the remaining agencies.

Yesterday, legislators left the Capitol for a long weekend, leaving as little as 72 hours (in the case of the House) to avert a partial government shutdown. Several versions of a funding arrangement are possible, including a one-year CR. However, if any of these options is the front-runner it is not clear to either the public or rank-and-file lawmakers.

Stay tuned for updates in next week's *ECOSWIRE*. [McAleer]

Need-to-Know News in Water & Waste

ASDWA Report Highlights State Drinking Water Funding Gaps

Area of Focus: *Water*

The Association of State Drinking Water Administrators (ASDWA) has released a report that investigates funding gaps for state drinking water programs: *Beyond Tight Budgets: The 2018 Resource Demands Report*.

The ASDWA board conducted a 2018 State Resource Demands Analysis to better understand the additional resource needs for states caused by increasing demands of non-regulatory activities. The report's analysis shows the growing demand for state drinking water programs and highlights the need for either additional funding or a reallocation of resources. [Piper]

U.S. EPA, USDA Encourage Use of Market-Based Approaches to Addressing Nutrients

Area of Focus: *Water*

U.S. EPA and the U.S. Department of Agriculture (USDA) last week issued a letter to state co-regulators that encourages increased engagement and a reinvigoration of state, tribal, and federal efforts to reduce excess nutrients in waterways, with a focus on market-based and other collaborative approaches. Approaches could include providing technical and financial support and participating in problem-solving at the local level to explore approaches including water quality credit trading, public-private partnerships, pay-for success, supply chain programs, and more.

The effort is part of a larger collaboration to better coordinate and focus federal resources on some of the nation's most challenging water resource concerns, including addressing excess nutrients in waterways.

For more information, visit this page. [Piper]

VIDA Signed into Law

Area of Focus: *Water*

Last week, President Trump signed into law S. 140, the *Frank LoBiondo Coast Guard Authorization Act of 2018*, which authorizes appropriations thru FY 2019 for the U.S. Coast Guard and the Federal Maritime Commission, reauthorizes the U.S. Department of Commerce's National Oceanic and Atmospheric Administration's hydrographic services program through FY 2023, and modifies the regulation of vessel incidental discharge and ballast water.

Title IX, the Vessel Incidental Discharge Act (VIDA), tasks U.S. EPA with setting discharge

standards for commercial vessel incidental discharges, including ballast water, and the Coast Guard with setting and enforcing compliance requirements.

While ECOS did not comment on this version of VIDA, the association did join other state associations in a letter of concern regarding a 2016 version. [Piper]

U.S. EPA Streamlines HazWaste Pharmaceuticals Regulations for Healthcare Sector

Area of Focus: *Land and Waste*

On December 12, U.S. EPA Acting Administrator Andrew Wheeler signed a final rule streamlining standards for managing hazardous waste pharmaceuticals in the healthcare sector.

The rule reaffirms EPA's policy that non-prescription pharmaceuticals and other unsold retail items that have a reasonable expectation of being used/reused or legitimately reclaimed are not solid waste. It also provides regulatory certainty that the Resource Conservation and Recovery Act applies when healthcare facilities send unused, unsaleable pharmaceuticals to reverse distributors to receive manufacturer credit. Simultaneously, the rule incorporates flexibilities to accommodate current business practices to facilitate its implementation.

For more information, click here. [Parisien]

E-ENTERPRISE
for the environment
Modernizing the business of environmental protection

E-Enterprise for the Environment

E-Enterprise

E-Enterprise Bulletin Features Wheeler, Noteworthy Initiatives

This month, E-Enterprise released the winter edition of the *E-Enterprise Bulletin.* This issue features a message from U.S. EPA Acting Administrator Andrew Wheeler as well as featured E-Enterprise projects including the Be Well Informed App and Smart Mobile Tools for Field Instructors. Readers can also learn about a number of exciting E-Enterprise developments, including a new effort to usher in a forward-looking digital strategy.

The quarterly newsletter spotlights activities led by the E-Enterprise partners – U.S. EPA, states, and tribes – and presents special interviews, project success stories, outreach highlights, and more. To subscribe, click here. [Duke]

ITRC

Interstate Technology and Regulatory Council

ITRC Opens Registration for 2019 Annual Meeting in Boston

The Interstate Technology & Regulatory Council (ITRC), an ECOS affiliate, cordially invites you to attend its 2019 Annual Meeting. The meeting is open to all and will be held **March 25-28** in Boston, MA.

This gathering offers the only chance each year for all ITRC members convene to promote best environmental practices and further the work of the organization. This year's theme is *Stewards of Environmental Innovation*.

ITRC's new team topics for this year are: 1,4-Dioxane, Harmful Cyanobacterial Blooms, and Incremental Sampling Methodology. The group also will continue its three large teams from last year: PFAS, Implementing the Use of Advanced Site Characterization Tools, and Optimizing In Situ Remediation Performance & Injection Strategies.

Learn more and register here. [Olonoff]

ITRC PFAS Training Class Attracts More Than 300 Attendees

Attendees at the Michigan PFAS training.

The Interstate Technology & Regulatory Council (ITRC) held a well-attended PFAS training class December 13 in Grand Rapids, Michigan. More than 300 environmental professionals convened to learn about PFAS regulations, site characterization, sampling, AFFF, treatment technologies, risk assessment, and risk communication.

ITRC thanks its partners in Michigan for helping organize the event. More than 150 state employees from the Michigan Department of Environmental Quality, Department of Health and Human Services, and city/local government attended.

The next ITRC PFAS training class will be held **January 10** in Atlanta. The class is free, and travel scholarships are available for state/city/local staff and tribal members.

Click here for more information, or contact Tadbir Singh of ECOS. [Olonoff]

Upcoming Events

U.S. EPA on ORD Technical Support Centers

U.S. EPA's Office of Research and Development will host its monthly Tools and Resources webinar on **December 17 at 3-4 p.m. Eastern** to discuss its Technical Support Centers, which provide technical assistance to EPA regional and program offices for contaminated site cleanup.

To learn more about the centers and how to access their support, register for the webinar here. [Longsworth]

U.S. EPA on Disaster Recovery Response Tool

U.S. EPA will host a webinar on **December 18 at 2:30-3:30 p.m. Eastern** to highlight EPA Region 5's innovative Disaster Debris Recovery Tool. The tool promotes effective recovery, recycling, and disposal of disaster debris for federal, state, tribal, and local emergency planners and responders. Through the E-Enterprise initiative, the tool will expand in 2019 to 35 states and be accessible through the E-Enterprise Portal.

Register for the webinar here. [Parisien]

U.S. EPA on ECHO

States are invited to join U.S. EPA for its next Intro to ECHO (Enforcement and Compliance History Online) webinar on **December 18**. This webinar is one in a series that provides basic demonstrations of searching and navigating the website. Participants will learn how to use ECHO in your communities and workplaces to identify facility history with compliance and enforcement. Note that this webinar is repeated every six months. Registration will open soon here.

The subsequent ECHO Webinar will be held in March 2019, with details posted on the ECHO training page in early 2019. Topics for future webinars will be selected based on user feedback, and every six months U.S. EPA will highlight a new tool.

For more information, contact Rebecca Kane of EPA. [Piper]

Colorado State University on Oil & Gas Equivalency

For those interested in the ongoing ECOS Shale Gas Caucus effort to promote oil and gas alternative air compliance pathways, you may want to attend the Colorado State University (CSU) *Path to Equivalency Workshop*. The meeting is planned for **January 8-9** in Fort Collins, Colorado. Participants must RSVP for the event.

To reserve or to receive more information, contact Kristine Bennett of Colorado State University. [Parisien]

ITRC on Managing LNAPL, Geospatial Analysis, and Fractured Rock

ITRC is excited to release its 2019 online training schedule. All online training classes are free and open to everyone. In January 2019, ITRC is offering five classes on Managing LNAPL Sites, Geospatial Analysis, and Fractured Rock.

Learn more about ITRC's training program and register for classes here. [Olonoff]

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Washington, DC 20001-1770

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mailchimp

Message

From: Holland, Luke (Inhofe) [Luke_Holland@inhofe.senate.gov]
Sent: 12/20/2018 4:33:05 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Fwd: Executive Nominations - OPIC

Sent from my iPhone

Begin forwarded message:

From: Cloakroom <**subscriptions_cloakroom@rep-secretary.senate.gov**>
Date: December 17, 2018 at 5:36:26 PM MST
To: Undisclosed recipients:;
Subject: Executive Nominations - OPIC
Reply-To: Cloakroom <**subscriptions_cloakroom@rep-secretary.senate.gov**>

Hotline

MONDAY, DECEMBER 17, 2018 AT 07:36 PM

Executive Nominations - OPIC

PN 2323 Christopher Vincze, Board of OPIC

PN 2137 Irving Bailey, Board of OPIC

PN 2138 Irving Bailey, Board of OPIC

PN 1852 Louis DeJoy, Board of OPIC

Discharge from SFRC and confirm by voice vote en bloc.

Please notify the Cloakroom if your Senator would oppose confirmation of any of the nominations or would like time to speak.

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To change your Trunkline email subscriptions, please visit your **user profile** page.

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 12/18/2018 10:22:30 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]
Subject: RE: Dunn - one more try

1. "I believe it is important that EPA be able to rely on studies whose underlying data may not be reproducible due to the fact that the data was drawn from a unique event or circumstance, and I believe it is important for the rule to preserve that authority."

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, December 18, 2018 5:21 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Dunn - one more try

I'm unsure what the word tweak is.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Tuesday, December 18, 2018 5:12 PM
To: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Dunn - one more try

And I will send a cleaned up version shortly. There are many floating commas and artifacts from the editing process. Will do same for Wright as soon as RJ responds to the one last word tweak that we think will resolve one of the holds on him.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Sent: Tuesday, December 18, 2018 5:10 PM
To: 'Jackson, Ryan' <jackson.ryan@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Dunn - one more try

Ryan,

Thanks for these edits. If you will sign and send a copy, we will request a hotline and do our best to use the information and see where we get in clearing the Senator concerns we know that we have at this time.

Also, just flagging for you that an EPA commitment to the continuation of Safer Choice is not a question that is going away. Nominees in the next Congress should expect to be questioned about it from the Democratic side of the dais. I

know that this has been a long and difficult letter process. I'd welcome, at a later time, a better understand of the agency's sensitivities to commit to continuing a voluntary program subject to Congressional authorization and direction. That seems like an easy one to commit to.

If you could send as soon as you can, I'll make the hotline request.

-MF

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, December 18, 2018 4:23 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Subject: RE: Dunn - one more try

We can accept:

- The May 31 date change
- Text at the end of that page to read, "each PMN reviewed and subject to a final determination, and will make available all underlying documents supporting EPA's risk determinations, as soon as practicable, with a goal of making this information public as close in proximity as possible to when a final determination is communicated to the PMN submitter."
- And the "and, at the same time" language in the NAS paragraph

But like with the Peter Wright letter, I cannot accept any further changes. I have to move on at this point. This letter is significant, and we cannot continue to talk about more changes.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Monday, December 17, 2018 6:55 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Lyons, Troy <lyons.troy@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: Dunn - one more try

Ryan

Thanks for chatting about the difficulty of getting accurate read-outs of timeline possibilities from EPA staff given resource and other constraints. This is the cleaned up version of the document we have been editing, with many of the issues you had concerns about removed, some of the solutions we talked about incorporated as best I could, and a couple of things we did not resolve per se but which I continue to believe are important to our Members that do not, in our view, represent unreasonable expectations.

Take a look at let me know what you think – we do want to get this done.

Thanks
Michal

Message

From: Judson Greif [judson@greenfieldgs.com]
Sent: 12/5/2018 2:27:08 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Chad Bradley [cbradley@sblstrategies.com]; Maureen Duffy [Maureen.Duffy@amwater.com]
Subject: Thank you

Ryan -
Thank you very much for your time on Monday afternoon to meet with American Water. We sincerely appreciate the strong partner we have with the EPA - and shared the same sentiment with Dave Ross earlier in the day. We look forward to continuing that partnership and working with you in the future. I will be sure to circle back with you following the POTW issue discussion with Lee Forsgren and Andrew Sawyers that is scheduled for next week. In the meantime should you have any questions please reach out to any of us at any time, and congratulations on your forthcoming nuptials!

Congratulations again and have a wonderful weekend.

Sincerely,
Judson

Judson Greif
Principal
Greenfield Strategies
judson@greenfieldgs.com
Ex. 6

Message

From: Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]
Sent: 12/6/2018 2:18:07 PM
To: Lyons, Troy [lyons.troy@epa.gov]
CC: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: Peter Wright

I have requested it. The Cloakroom confirmed it and came back to ask if it was ok to run him and another EPW nom (not EPA).

I have asked again if it will run today or if there is a Leadership issue with running it.

Mary Frances Repko
Minority Staff Director
U.S. Senate Committee on Environment and Public Works

> On Dec 6, 2018, at 9:13 AM, Lyons, Troy <lyons.troy@epa.gov> wrote:
>
> Has the hotline been run on Peter?
>
>
> Sent from my iPhone

Message

From: Lyons, Troy [lyons.troy@epa.gov]
Sent: 12/19/2018 7:44:04 PM
To: Van Doren, Terry (McConnell) [Terry_VanDoren@mcconnell.senate.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: RE: Peter Wright

Thanks for all of your help, Terry. Sorry to pester you.

From: Van Doren, Terry (McConnell) <Terry_VanDoren@mcconnell.senate.gov>
Sent: Wednesday, December 19, 2018 2:42 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

All our hotlines on noms are structured as voice votes. This is the common practice for us to voice vote noms and legislation in wrap-up. The Democrat cloakroom knows that. I will ask Laura Dove to raise it with her cloakroom counterpart, and I just raised it with my counterpart. They know we are ready to voice vote the Peter Wright nomination; he is going to investigate with his cloakroom and get back to us. Thanks for flagging. Sorry you are getting a little bit of the run around here.

Terry Van Doren
Policy Advisor
Office of Majority Leader McConnell
Washington, DC 20510
(202) 224-3135

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Wednesday, December 19, 2018 2:29 PM
To: Van Doren, Terry (McConnell) <Terry_VanDoren@mcconnell.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: FW: Peter Wright

I hate to forward messages but to just cut to the case, this is why we ask.

From: Repko, Mary Frances (EPW) [mailto:mary_frances_repko@epw.senate.gov]
Sent: Wednesday, December 19, 2018 1:56 PM
To: Lyons, Troy <lyons.troy@epa.gov>
Cc: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Palich, Christian <palich.christian@epa.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Re: Peter Wright

Nope, needs to be an offer from Cloakroom to Cloakroom.

Mary Frances Repko
Minority Staff Director
U.S. Senate Committee on Environment and Public Works

On Dec 19, 2018, at 1:54 PM, Lyons, Troy <lyons.troy@epa.gov> wrote:

> Once the office with the hold on Peter agrees to a voice vote, we will have McConnell's office tell D cloakroom.

Sound good?

From: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Sent: Wednesday, December 19, 2018 1:50 PM
To: Lyons, Troy <lyons.troy@epa.gov>
Cc: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Palich, Christian <palich.christian@epa.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Re: Peter Wright

We've hotlined Peter. He hasn't cleared. The R cloakroom needs to tell the D cloakroom that McConnell would vote vote if that helps.

My sense is that it won't and a roll call is needed.

Mary Frances Repko
Minority Staff Director
U.S. Senate Committee on Environment and Public Works

On Dec 19, 2018, at 1:47 PM, Lyons, Troy <lyons.troy@epa.gov> wrote:

> Putting everyone on the same page.
>
> I just shared with Michal that McConnell's office can do a VOICE VOTE for Peter Wright per Terry Van Doren. Once Peter clears a hotline on the D side, the D cloakroom needs to communicate to the R cloakroom he has cleared their side and is eligible for a VV. Once this happens, we will also share with Terry to get his office to act quickly. McConnell's office can help facilitate the VV.
>
> _____
> **Troy M. Lyons**
> Associate Administrator
> Office of Congressional & Intergovernmental Relations
> U.S. Environmental Protection Agency
> **Ex. 6**

Message

From: Defense Tech Expos [lrinaldo@cox.net]
Sent: 12/19/2018 4:23:53 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: VIP Invitation Federal Small Business Procurement & Tech Plus Expo DC

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Larry Rinaldo

Defense Tech Expos

More information is available from 703-344-8771

Questions/Please RSVP to: LRinaldo@cox.ne t

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Message

From: Green Guy Media [talkwithgreenguy@gmail.com]
Sent: 12/5/2018 2:16:38 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: ♻ Green Guy Media Newsletter NFL All-Pro and Former Atlanta Falcon, Ovie Mughelli,Creator of Gridiron Green

♻ Green Guy Media Newsletter NFL All-Pro and Former Atlanta Falcon, Ovie Mughelli,Creator of Gridiron Green

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Volume 96 - December 5, 2018

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Green Guy Media EcoEvent of the Week:
December 7th, Captain Planet Gala
bit.ly/2Sd56s4

December 7th Southface
Sustainable Atlanta Roundtable Meeting
southface.org/events/2018-12

December 15th, Haiti for the Holidays 5K Run
bit.ly/2PkIpk2

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mydropcounts.org/pledge-to-conserve/take-the-pledge

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Message

From: Johnson, Kirk D. [kirk.johnson@nreca.coop]
Sent: 12/11/2018 10:59:52 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: Last minute but better late than never.

**** Please use caution when clicking links or opening attachments ****

Thanks Ryan. Appreciate it!

-K

On: 10 December 2018 21:15,
"Jackson, Ryan" <jackson.ryan@epa.gov> wrote:

** Please use caution when clicking links or opening attachments **
No problem. Just didn't want to leave him out.

Ryan Jackson
Chief of Staff
U.S. EPA
202-564-6999

On Dec 10, 2018, at 8:37 PM, Johnson, Kirk D. <kirk.johnson@nreca.coop> wrote:

> **** Please use caution when clicking links or opening attachments ****
> Hi Ryan – good to hear from you and I hope you were out and got to enjoy yourself a bit!
>
> I spoke with Jim earlier today, and unfortunately he is fully tied up tomorrow morning and won't be able to make the WOTUS signing. But we will have several of our team there to support the effort, and we're looking forward to our time with Acting Administrator Wheeler tomorrow afternoon.
>
> Was a pleasure to be there last week, and had it not been for the fact that our Board meeting adjourned at noon that day, we might have been able to get Jim there rather than me for the event.
>
> Thanks again for reaching out!
>
> -K
>
> ---
>
> **From:** Jackson, Ryan [mailto:jackson.ryan@epa.gov]
> **Sent:** Monday, December 10, 2018 8:13 PM
> **To:** Johnson, Kirk D. <kirk.johnson@nreca.coop>
> **Subject:** Last minute but better late than never.

** Please use caution when clicking links or opening attachments **
Kirk, thanks for speaking last week at 111b. I've been out of the office for the last few days but saw Jim is scheduled for a meeting with Wheeler tomorrow afternoon following our WOTUS event. Zippy Duvall, Chuck Connor, Rich Nolan, Jay Timmons and other association presidents will be seated on stage for our WOTUS replacement rollout tomorrow. Jim is welcome too. I don't want to leave him out. Run of show is below and no speaking is necessary. Let me know. Ex. 6 is my cell.

DELIBERATIVE, DRAFT RUN OF SHOW
2019 WOTUS
12/11/18
WJC East
1201 Constitution Avenue, NW Washington DC 20460

11:00-11:23 Meet and Greet with Wheeler, RD James, Censky, Members of Congress and Trade Association Presidents in The Courtroom on the 1st Floor of WJC East.
11:23 Guests + Censky exit Courtroom and take their seats on stage in the Map Room. Dave Ross then gives remarks.
11:30 Map Room Ceremony Begins. Dave Ross calls for RD James, Zinke and AAW to enter Map Room. Zinke takes his seat. AAW and RD walk past podium to table. Both sit and sign. On-stage guests stand and applause while they are signing. Then AAW moves to podium and asks everyone on stage to be seated.

Speaking order:
- AAW Speaks, calls up RD James
- RD James
- Secretary Zinke
- Chairman Pat Roberts
- Chairwoman Lisa Murkowski
- Senator Ernst
- Senator Hoeven
- Senator Rounds
- Chairman Greg Walden
- Congressman Sam Graves
- Chairman Rob Bishop
- Congressman Paul Gosar
- Congressman Bill Johnson
- Congressman Doug Lamalfa
- Congressman Bob Gibbs
- USDA Deputy Sec Censky
- Zippy Duvall, AFBF
- Jerry Howard NAHB
- Jay Timmons, NAM

PRESS Q&A then AAW Departs

ON STAGE (Not All Speaking)
- Jay Timmons, NAM
- Darren Coppock- Ag Retailers Association
- KY Commissioner of Agriculture Ryan Quarles
- Maine Commissioner of Agriculture Walt Whitman
- Arkansas Ag Commissioner Wes Ward
- Zippy Duvall, AFBF
- Jerry Howard, NAHB

- Jeffrey Shoaf, AGC
- Kevin Kester, National Cattlemen's Beef Association
- Chip Morgan, Delta Council
- Chuck Conner, Farmers Cooperatives
- Collin Woodall, NCBA
- Censky, USDA
- Zinke, DOI
- Barb Glenn, NASDA
- ECOS Representative
- Reece Langley
- Bill Northey (TBD)
- AAW
- Dave Ross
- RD James + 1 Staff

Ryan Jackson
Chief of Staff
U.S. EPA
202-564-6999

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Message

From: Lyons, Troy [lyons.troy@epa.gov]
Sent: 12/16/2018 7:22:43 PM
To: susie.wiles@desantistransition.com
CC: Jackson, Ryan [jackson.ryan@epa.gov]; Humphreys, Hayly [humphreys.hayly@epa.gov]; Eby, Natasha [eby.natasha@epa.gov]
Subject: Call w EPA Acting Administor Wheeler

Susie,

The President asked Acting EPA Administrator Wheeler to connect with Gover-elect DeSantis this week. I have added the Administrator's schedulers in the hope that we can find time for them to talk.

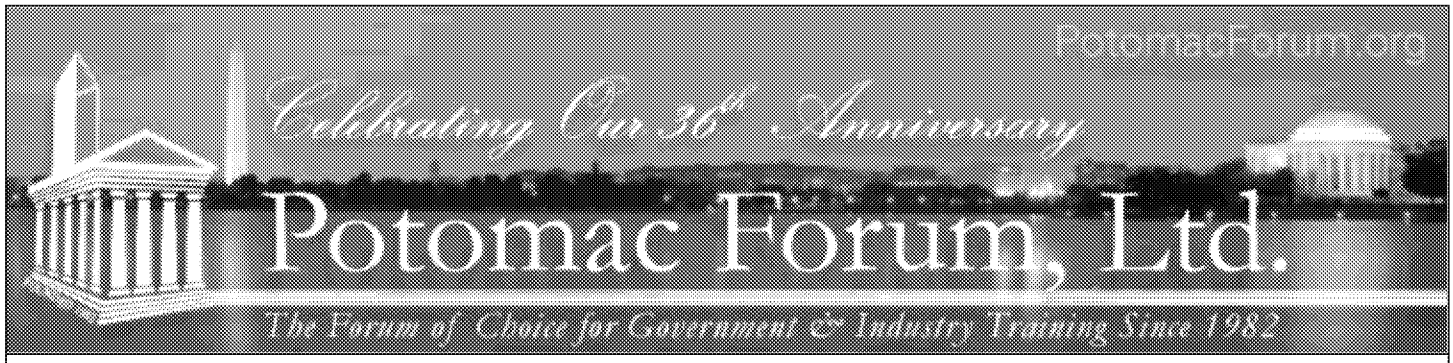
Many thanks,

Troy

Sent from my iPhone

Message

From: Developing & Supervising the New Gov Workforce [PotomacForumTraining@FederalWorkforce.org]
Sent: 12/6/2018 2:02:41 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] Next Tuesday Training - Managing the New Gov Workforce & Improving Engagement



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Office of Federal Student Aid
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Darryl E. Peek II
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Salesforce Public Sector North America
(Former DHS Executive)

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The president's management agenda provides a long-term vision for rebuilding public trust in government by tackling systemic barriers to reform, including an ineffective personnel management system and outdated technology infrastructure. The goals are threefold: deliver on agency missions, provide superior service to the public, and eliminate waste.

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the PMA vision and develop the next generation of Federal government leaders.

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What You Will Learn:
- Identify the competencies needed as a successful supervisor to maximize employee performance and how to avoid common pitfalls to managing performance and conduct in the modern workplace

- Optimize your strategy for recruiting, hiring, training and rewarding the Future Federal Workforce by bringing in the next generation of workers and retaining top talent; training (and retraining) personnel to forecast for future mission requirements, develop leaders across all levels of the organization and to enhance performance across the organization.

- Adopt promising practices that drive positive outcomes by leveraging the Federal Employee Viewpoint Survey Results into actionable steps to cultivate an inclusive, high-performing culture designed to retain top talent and maximize employee potential and performance

- Optimize employee recognition programs designed to recognize, reward and retain top performers;

- Build your toolkit for cultivating a culture of engagement and accountability designed to achieve enhanced organizational and individual performance

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Message

From: ECOS [ecos@ecos.org]
Sent: 12/14/2018 8:03:01 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: U.S. EPA Acts on WOTUS & Ozone as States Move on PFAS, Arsenic, & More

U.S. EPA Acts on WOTUS & Ozone as States Move on PFAS, Arsenic, & More

ECOSWIRE | Vol. 20 No. 47

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ECOSWIRE

Friday, December 14, 2018

Vol. 20 No. 47

Table of Contents

- U.S. EPA & Army Propose to Narrow 'Waters of the United States' Definition
- U.S. EPA Finds CSAPR States Meet 'Good Neighbor' Obligations for 2008 Ozone
- Get a Jump on the New Year by Registering for the 2019 ECOS Spring Meeting
- Transitions
- State News You Can Use
- Funding
- Need-to-Know News in Water & Waste
- E-Enterprise for the Environment
- ITRC
- Upcoming Events

U.S. EPA & Army Propose to Narrow 'Waters of the United States' Definition

This week, U.S. EPA and the Department of the Army announced a new proposed definition of “waters of the United States” intended to clarify federal authority under the Clean Water Act, and replace the Obama Administration's 2015 definition. The proposal is the second of a two-step process to review and revise the current definition, as directed by President Trump in a February 2017 Executive Order.

Under the agencies’ proposal, traditional navigable waters, tributaries to those waters, certain ditches, certain lakes and ponds, impoundments of jurisdictional waters, and wetlands adjacent to jurisdictional waters would be federally regulated. Waters that would not be classified as “waters of the United States” include: features that only contain water during or in response to rainfall (e.g., ephemeral features); groundwater; many ditches,

including most roadside or farm ditches; prior converted cropland; stormwater control features; and waste treatment systems.

In response to requests from some states, EPA and the Army are exploring ways the agencies can work with their state, tribal, and federal partners to develop a data or mapping system that could clarify the understanding of the presence or absence of jurisdictional waters. The agencies will take comment on the proposal for 60 days following publication in the *Federal Register*. The pre-publication version is available here and fact sheets on the proposed rule are available here. [Piper]

U.S. EPA Finds CSAPR States Meet 'Good Neighbor' Obligations for 2008 Ozone

On December 6, U.S. EPA finalized a determination that the 2016 Cross-State Air Pollution Rule Update for the 2008 Ozone National Ambient Air Quality Standards (NAAQS) fully addresses the Clean Air Act's "good neighbor" requirements for 20 states with respect to the 2008 ground-level ozone standard.

Based on modeling released in 2017, EPA finds that once the 2016 CSAPR update is fully implemented, the 20 upwind states will not contribute significantly to nonattainment or interfere with the maintenance of the 2008 ozone standards in any downwind state. Thus EPA and the CSAPR-region states are not obligated to establish additional requirements for sources to further reduce transported ozone pollution.

For more information, please see EPA's Final CSAPR Close-Out webpage. [Poole]

Get a Jump on the New Year by Registering for the 2019 ECOS Spring Meeting

Get a jump on the New Year and register today for the 2019 ECOS Spring Meeting in Crystal City, Virginia. Join us **April 8-10** for a firsthand look at *Partnership in Action: Advancing Collaboration, Certainty, & Confidence*!

Having secured a seat at the table through the ECOS Cooperative Federalism 2.0 initiative, states now are working with U.S. EPA and other federal partners to deepen shared decision-making, shared problem-solving, and shared programmatic development. Featured speakers on these matters will include ECOS members, EPA Acting Administrator Andrew Wheeler (invited), and other federal officials and congressional leaders.

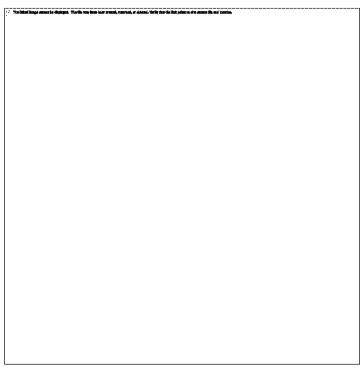
In the spirit of collaboration, the gathering also will include a dinner reception at the

Canadian Embassy on **April 9**.

See the draft agenda and registration, hotel, and contact information here. Register by **March 1** to take advantage of the early bird rate, and reserve at the special ECOS rate at the Renaissance Arlington Capital View Hotel by **March 18** or while supply lasts. [Parisien]

Transitions

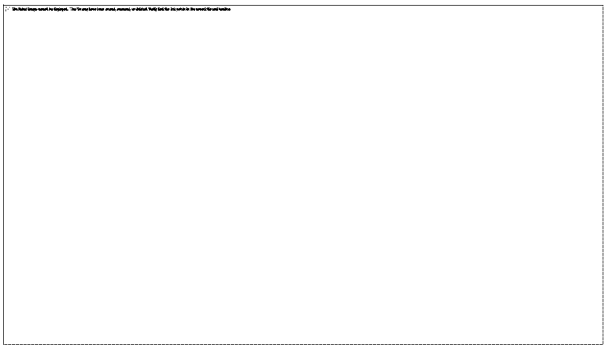
Former Pennsylvania Leader Tapped to Head U.S. EPA Chesapeake Bay Program



Dana Aunkst

U.S. EPA announced this week the selection of Dana Aunkst, former Acting Secretary and Deputy Secretary of the Pennsylvania Department of Environmental Protection, as the new Director of EPA's Chesapeake Bay Program. Aunkst has 33 years of environmental and regulatory experience in private industry and local and state government. His appointment will be effective December 23.

For more information about the Chesapeake Bay restoration, click here. [Parisien]



State News You Can Use

Michigan Reports PFAS Progress at One-Year Mark of Initiative

Washington Launches New Online 'Dirt Alert' Map

Iowa Installs Stream Crossing Signs to Highlight Source Waters, Promote Stewardship

New Tire Fees Fund Nevada Recycling Projects

Funding

Appropriations Standoff Continues as December 21 Deadline Looms

With roughly one-quarter of the federal government, including U.S. EPA, under a Continuing Resolution (CR) that expires December 21, there does not appear to be an immediate path forward to resolve the dispute over funding for a border wall and pass 2019 Appropriations bills for the remaining agencies.

Yesterday, legislators left the Capitol for a long weekend, leaving as little as 72 hours (in the case of the House) to avert a partial government shutdown. Several versions of a funding arrangement are possible, including a one-year CR. However, if any of these options is the front-runner it is not clear to either the public or rank-and-file lawmakers.

Stay tuned for updates in next week's *ECOSWIRE*. [McAleer]

Need-to-Know News in Water & Waste

ASDWA Report Highlights State Drinking Water Funding Gaps

Area of Focus: *Water*

The Association of State Drinking Water Administrators (ASDWA) has released a report that investigates funding gaps for state drinking water programs: *Beyond Tight Budgets:*

The 2018 Resource Demands Report.

The ASDWA board conducted a 2018 State Resource Demands Analysis to better understand the additional resource needs for states caused by increasing demands of non-regulatory activities. The report's analysis shows the growing demand for state drinking water programs and highlights the need for either additional funding or a reallocation of resources. [Piper]

U.S. EPA, USDA Encourage Use of Market-Based Approaches to Addressing Nutrients

Area of Focus: *Water*

U.S. EPA and the U.S. Department of Agriculture (USDA) last week issued a letter to state co-regulators that encourages increased engagement and a reinvigoration of state, tribal, and federal efforts to reduce excess nutrients in waterways, with a focus on market-based and other collaborative approaches. Approaches could include providing technical and financial support and participating in problem-solving at the local level to explore approaches including water quality credit trading, public-private partnerships, pay-for success, supply chain programs, and more.

The effort is part of a larger collaboration to better coordinate and focus federal resources on some of the nation's most challenging water resource concerns, including addressing excess nutrients in waterways.

For more information, visit this page. [Piper]

VIDA Signed into Law

Area of Focus: *Water*

Last week, President Trump signed into law S. 140, the *Frank LoBiondo Coast Guard Authorization Act of 2018*, which authorizes appropriations thru FY 2019 for the U.S. Coast Guard and the Federal Maritime Commission, reauthorizes the U.S. Department of Commerce's National Oceanic and Atmospheric Administration's hydrographic services program through FY 2023, and modifies the regulation of vessel incidental discharge and ballast water.

Title IX, the Vessel Incidental Discharge Act (VIDA), tasks U.S. EPA with setting discharge standards for commercial vessel incidental discharges, including ballast water, and the Coast Guard with setting and enforcing compliance requirements.

While ECOS did not comment on this version of VIDA, the association did join other state associations in a letter of concern regarding a 2016 version. [Piper]

U.S. EPA Streamlines HazWaste Pharmaceuticals Regulations for Healthcare Sector

Area of Focus: *Land and Waste*

On December 12, U.S. EPA Acting Administrator Andrew Wheeler signed a final rule streamlining standards for managing hazardous waste pharmaceuticals in the healthcare sector.

The rule reaffirms EPA's policy that non-prescription pharmaceuticals and other unsold retail items that have a reasonable expectation of being used/reused or legitimately reclaimed are not solid waste. It also provides regulatory certainty that the Resource Conservation and Recovery Act applies when healthcare facilities send unused, unsaleable pharmaceuticals to reverse distributors to receive manufacturer credit. Simultaneously, the rule incorporates flexibilities to accommodate current business practices to facilitate its implementation.

For more information, click here. [Parisien]

E-Enterprise for the Environment

E-Enterprise

E-Enterprise Bulletin Features Wheeler, Noteworthy Initiatives

This month, E-Enterprise released the winter edition of the *E-Enterprise Bulletin*. This issue features a message from U.S. EPA Acting Administrator Andrew Wheeler as well as featured E-Enterprise projects including the Be Well Informed App and Smart Mobile Tools for Field Instructors. Readers can also learn about a number of exciting E-Enterprise developments, including a new effort to usher in a forward-looking digital strategy.

The quarterly newsletter spotlights activities led by the E-Enterprise partners – U.S. EPA, states, and tribes – and presents special interviews, project success stories, outreach highlights, and more. To subscribe, click here. [Duke]

ITRC

Interstate Technology and Regulatory Council

ITRC Opens Registration for 2019 Annual Meeting in Boston

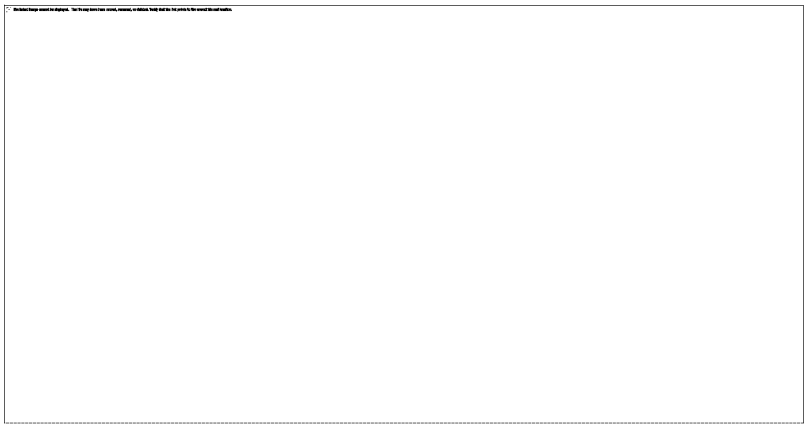
The Interstate Technology & Regulatory Council (ITRC), an ECOS affiliate, cordially invites you to attend its 2019 Annual Meeting. The meeting is open to all and will be held **March 25-28** in Boston, MA.

This gathering offers the only chance each year for all ITRC members convene to promote best environmental practices and further the work of the organization. This year's theme is *Stewards of Environmental Innovation*.

ITRC's new team topics for this year are: 1,4-Dioxane, Harmful Cyanobacterial Blooms, and Incremental Sampling Methodology. The group also will continue its three large teams from last year: PFAS, Implementing the Use of Advanced Site Characterization Tools, and Optimizing In Situ Remediation Performance & Injection Strategies.

Learn more and register here. [Olonoff]

ITRC PFAS Training Class Attracts More Than 300 Attendees



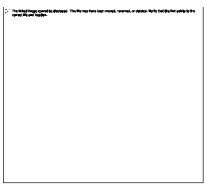
Attendees at the Michigan PFAS training.

The Interstate Technology & Regulatory Council (ITRC) held a well-attended PFAS training class December 13 in Grand Rapids, Michigan. More than 300 environmental professionals convened to learn about PFAS regulations, site characterization, sampling, AFFF, treatment technologies, risk assessment, and risk communication.

ITRC thanks its partners in Michigan for helping organize the event. More than 150 state employees from the Michigan Department of Environmental Quality, Department of Health and Human Services, and city/local government attended.

The next ITRC PFAS training class will be held **January 10** in Atlanta. The class is free, and travel scholarships are available for state/city/local staff and tribal members.

Click here for more information, or contact Tadbir Singh of ECOS. [Olonoff]



Upcoming Events

U.S. EPA on ORD Technical Support Centers

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To learn more about the centers and how to access their support, register for the webinar here. [Longsworth]

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States are invited to join U.S. EPA for its next Intro to ECHO (Enforcement and Compliance History Online) webinar on **December 18**. This webinar is one in a series that provides basic demonstrations of searching and navigating the website. Participants will learn how to use ECHO in your communities and workplaces to identify facility history with compliance and enforcement. Note that this webinar is repeated every six months. Registration will open soon here.

The subsequent ECHO Webinar will be held in March 2019, with details posted on the ECHO training page in early 2019. Topics for future webinars will be selected based on user feedback, and every six months U.S. EPA will highlight a new tool.

For more information, contact Rebecca Kane of EPA. [Piper]

Colorado State University on Oil & Gas Equivalency

For those interested in the ongoing ECOS Shale Gas Caucus effort to promote oil and gas alternative air compliance pathways, you may want to attend the Colorado State University (CSU) *Path to Equivalency Workshop*. The meeting is planned for **January 8-9** in Fort Collins, Colorado. Participants must RSVP for the event.

To reserve or to receive more information, contact Kristine Bennett of Colorado State University. [Parisien]

ITRC on Managing LNAPL, Geospatial Analysis, and Fractured Rock

ITRC is excited to release its 2019 online training schedule. All online training classes are free and open to everyone. In January 2019, ITRC is offering five classes on Managing LNAPL Sites, Geospatial Analysis, and Fractured Rock.

Learn more about ITRC's training program and register for classes here. [Olonoff]

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Message

From: Dain Hansen [dain.hansen@iapmo.org]
Sent: 12/14/2018 7:59:51 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Michael Galano [michael.galano@hklaw.com]
Subject: Meeting Request

Dear Ryan,

I am writing to respectfully request a meeting for IAPMO's CEO, Russ Chaney; COO, Dave Viola, EVP, Peter DeMarco and myself with Acting Administrator Wheeler the week of January 7.

Our CEO, and other executives, will be in town that week and would like to discuss some important industry issues relating to our country's water systems. Due to the fact that IAPMO has been a long-standing partner with the EPA on a number of water-related issues and initiatives, we would appreciate the opportunity to have a discussion with Mr. Wheeler to highlight a few challenges and opportunities that those of us who are working on the demand-side of the water supply are seeing. Specifically, we would like to discuss WaterSense funding and lead (and other contaminants) in our Nation's drinking water.

A little background on IAPMO, and as you may recall from our previous meeting with you, we are a nearly 100-year-old trade association from the plumbing industry. We have long established relationships with local, state, and federal government officials to protect their water and sanitation services by creating plumbing standards and construction codes that meet stringent requirements for safety and sustainability. Additionally, and something you may be more familiar with, we are the largest third-party testing and certification laboratory for the plumbing industry. In short, we test and certify over 98% of the entire plumbing market in United States – working closely with manufacturers, architects, engineers, and building owners to test products that are being installed and utilized in the United States.

We look forward to hearing from you, and are happy to answer any questions you may have as you consider this request.

Thank you,

Dain M. Hansen
Senior Vice President
Government Relations
The IAPMO Group
101 Constitution Avenue, NW
Suite 825 East
Washington, D.C. 20001
(202) 445-7514
www.IAPMO.org/GR
www.Twitter.com/IAPMOGR
www.Linkedin.com/in/DainHansen

Message

From: Chris McCloskey [chris.mccloskey@dalecarnegie.com]
Sent: 12/5/2018 1:00:04 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Seasons Greetings!

Happy Holidays Ryan,

Just a quick note from all of us at Dale Carnegie to say how much we've appreciated our relationship with you this past year. We are so grateful to serve our federal customers, and look forward to being of service in the coming year.

We enjoy being here any time you have questions about your training plans, and always happy to share what's being developed for 2019!

Most importantly, we wish you and your team members much happiness and a wonderful holiday season!

Your Dale Carnegie Federal Team,

Chris McCloskey
Sandy Herman
Trina Herrera
John Goodnow

To stop receiving email from Dale Carnegie, please reply to this message with **Unsubscribe** *in the subject.*

Message

From: Willis, Sharnett [Willis.Sharnett@epa.gov]
Sent: 12/7/2018 5:01:11 PM
To: Joanna Slaney [jslaney@edf.org]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: RE: Phone call on methylene chloride proposed rule

Hi Joanna,

Ryan will call you on Ex. 6

Thank you.

From: Joanna Slaney <jslaney@edf.org>
Sent: Friday, December 7, 2018 11:50 AM
To: Willis, Sharnett <Willis.Sharnett@epa.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Subject: RE: Phone call on methylene chloride proposed rule

Hi Sharnett,

Wednesday at 10:30 works for me. Thank you for setting up the call. Please let me know what phone number to call, or Ryan can call me at Ex. 6

Thanks,
Joanna

From: Willis, Sharnett <Willis.Sharnett@epa.gov>
Sent: Friday, December 7, 2018 11:47 AM
To: Joanna Slaney <jslaney@edf.org>; Jackson, Ryan <jackson.ryan@epa.gov>
Subject: RE: Phone call on methylene chloride proposed rule

Good Morning,

Ryan is available - Wednesday, December 12th at 10:30am or Thursday, December 13th at 11:30. Please let me know which day and time work for you.

Thank you.

Sharnett Willis
Office of the Administrator
202/564-7866

From: Joanna Slaney <jslaney@edf.org>
Sent: Friday, December 7, 2018 11:23 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Willis, Sharnett <Willis.Sharnett@epa.gov>
Subject: RE: Phone call on methylene chloride proposed rule

Thanks. Should we put a time on the calendar?

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Friday, December 7, 2018 10:45 AM
To: Joanna Slaney <jslaney@edf.org>
Cc: Willis, Sharnett <Willis.Sharnett@epa.gov>
Subject: RE: Phone call on methylene chloride proposed rule

It will need to be next week. But I can do it then.

From: Joanna Slaney [mailto:jslaney@edf.org]
Sent: Friday, December 7, 2018 10:37 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Phone call on methylene chloride proposed rule

Hi Ryan,

Can we find a time for a brief call on the methylene chloride proposed rule? I'm available today, if you have any time.

Thanks,
Joanna

Joanna Slaney
Legislative Director, Health

Environmental Defense Fund
1875 Connecticut Ave, NW, Suite 600
Washington, D.C. 20009
T 202-572-3509
Ex. 6
jslaney@edf.org

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Message

From: Jim Massie [jmassie@massiepartners.com]
Sent: 11/30/2018 2:25:02 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: PRIA

Hey. One of my clients is crop life. Can we discuss how to get more than one year extension out of congress before they adjourn?

Jim Massie l Ex. 6

Message

From: Environmental Law360 [news-q2@law360.com]
Sent: 12/6/2018 6:00:00 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] BREAKING: McNamee Confirmed For FERC Slot Amid Climate Controversy

ENVIRONMENTAL

Thursday, December 6, 2018

BREAKING: McNamee Confirmed For FERC Slot Amid Climate Controversy

The U.S. Senate on Thursday narrowly confirmed Bernard McNamee to fill a vacant slot on the Federal Energy Regulatory Commission over unified Democratic opposition due to his role in the Trump administration's efforts to bailout coal and nuclear plants and his documented criticism of renewable energy.

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Message

From: Ex. 6
Sent: 12/12/2018 10:05:12 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Resume and On The Record Portfolio
Attachments: On the record portfolio.pdf; Ex. 6

Good evening Ryan,

Thank you for taking the time to speak with me.

I attached my resume and examples of my on the record experience.

I look forward to hearing from you and connecting soon.

Respectfully,

Raychel

--

Ex. 6

Ex. 6

Ex. 6

Message

From: ECOS [ecos@ecos.org]
Sent: 11/30/2018 6:11:33 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: ECOSWIRE: Leadership Shuffle at State Agencies and U.S. EPA

ECOSWIRE: Leadership Shuffle at State Agencies and U.S. EPA

ECOSWIRE | Vol. 20 No. 45

View this email in your browser

ECOSWIRE

Friday, November 30, 2018

Vol. 20 No. 45

Table of Contents

- ECOS Member Transitions
- U.S. EPA Transitions
- State News You Can Use
- Funding
- U.S. EPA News
- Upcoming Events

ECOS Member Transitions

Former U.S. EPA R8 Administrator McGrath Tapped to Head Montana DEQ

Shaun McGrath

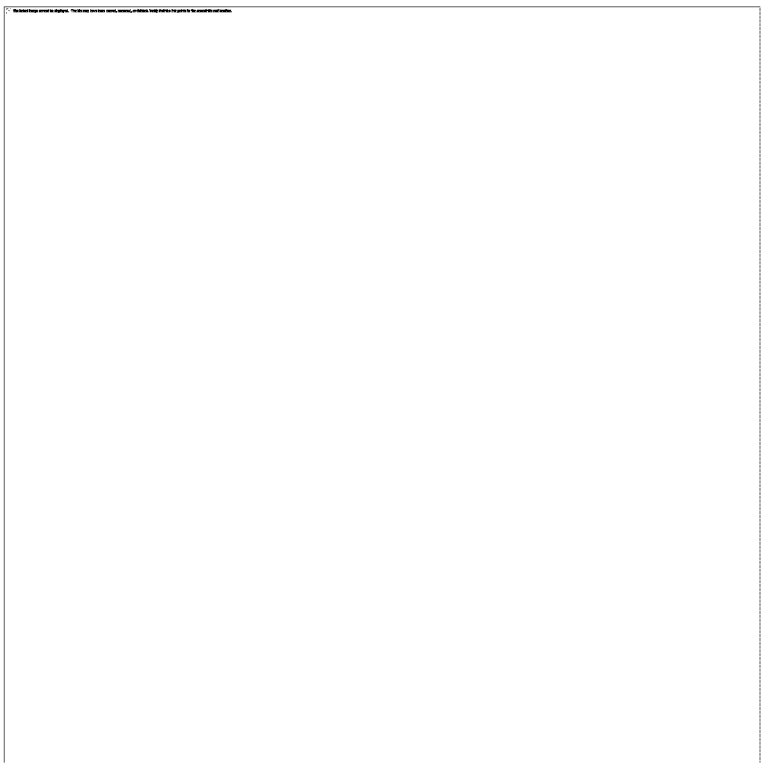
Montana Governor Steve Bullock has named former U.S. EPA Region 8 Administrator Shaun McGrath as the new Director of the Department of Environmental Quality, effective December 1. He takes over for Tom Livers, who is now the State Budget Director.

McGrath also was a Program Director for the Western Governors' Association and has served as Boulder Mayor on the Boulder City Council. He was Deputy Director of the White House Office of Intergovernmental Relations during the first two years of the Obama Administration, acting as a liaison with Governors.

Bullock says McGrath has decades of experience in seeking bipartisan solutions to issues.

[Parisien]

U.S. EPA Senior Advisor Wagner Named Oklahoma Secretary of Energy & Environment



Kenneth (Ken) Wagner

Governor-elect Kevin Stitt announced this week the selection of Kenneth (Ken) Wagner to serve as the next Oklahoma Secretary of Energy and Environment, succeeding Michael Teague. Wagner has been active with ECOS in his current role as U.S. EPA Senior Advisor to the Administrator for Regional and State Affairs.

He previously was a Founding Partner and Managing Partner at the Tulsa law firm Latham, Wagner, Steele & Lehman, PC.

Oklahoma has dual participation in ECOS, with both the Secretary of Energy and Environment and Executive Director of the Department of Environmental Quality (Scott Thompson) serving as members. [Parisien]

U.S. EPA Transitions

Top U.S. EPA Officials Are on the Move

November has seen a flurry of activity for U.S. EPA officials, including a key confirmation hearing, nomination, retirement, and resignations

Dunn Confirmation Hearing

Alexandra Dunn at the confirmation hearing.

On November 29, former ECOS Executive Director & General Counsel Alexandra Dunn testified before the Senate Environment & Public Works Committee on her nomination as U.S. EPA Assistant Administrator for the Office of Chemical Safety and Pollution Prevention. Dunn, who now serves as U.S. EPA Region 1 Administrator, received praise from Senators on both sides of the aisle for her record of leadership and consensus-building.

In her new role, she would oversee a number of issues of importance to the states, including implementation of the reauthorized Toxics Substances Control Act and policymaking on polyfluoroalkyl substances (PFAS).

For more on Dunn's testimony, click here. [Parisien]

Wheeler Nomination

Andrew Wheeler

President Donald Trump has announced that he will nominate U.S. EPA Acting Administrator Andrew Wheeler to lead the agency on a permanent basis. Observers predict that Wheeler's confirmation will be eased by the midterm election results in which Republicans expanded their majority in the Senate.

Wheeler was confirmed as EPA's Deputy Administrator in April. [Parisien]

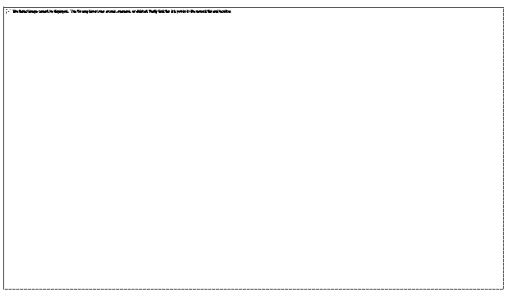
Grevatt Retirement

Peter Grevatt, U.S. EPA's top official overseeing cross-agency policy on high-profile chemicals, is retiring from the agency after 30 years. Currently Director of the agency's Office of Groundwater and Drinking Water, Grevatt has worked closely with ECOS in his role leading EPA's policy efforts on per- and polyfluoroalkyl substances (PFAS). [Parisien]

Glenn Resignation, Walker Acting Role

Trey Glenn, Administrator for U.S. EPA Region 4, resigned November 18 following an indictment in Alabama on state ethics charges.

Mary Walker, Deputy Regional Administrator for Region 4, has stepped in as Acting Administrator. ECOS members will recall that Walker previously served as the Assistant Director and Chief Operating Officer for the Georgia Environmental Protection Division. [Parisien]



State News You Can Use

Colorado Adopts California LEV Standards

New Jersey Enhances Disaster Response through Cross-

Agency Resilience Plan

Nevada Partners in Recycled Art Contest

Funding

Senate Nears Passage of FY19 EPA Appropriations Bill, CR Expires December 7

A U.S. EPA Appropriations bill for fiscal year (FY) 2019 is nearly complete, with Senate leaders from both parties indicating that they have resolved their differences over funding issues. However, budget negotiations in other areas of the government, including border wall funding, still pose a risk of a partial government shutdown upon the expiration of temporary funding on December 7.

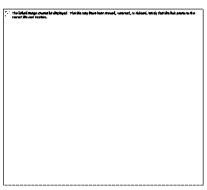
With the Democrats set to take control of the House in January, Republican leaders including Senate Majority Leader Mitch McConnell (R-KY) have said that funding the remaining government agencies for FY19 is among their top priorities. [McAleer]

U.S. EPA News

U.S. EPA Adopts Updated Information Collection Request Process to Reduce Burden

On November 21, U.S. EPA's Office of Water and Office of Enforcement and Compliance Assurance issued separate memoranda clarifying the processes each office will use for collecting information from the regulated community. One covers Clean Water Act Section 308 letters, and the other focuses on best practices for compliance and enforcement activities including Section 114 of the Clean Air Act and Section 3007 of the Resource Conservation and Recovery Act, as well as Section 308 of the Clean Water Act. EPA hopes the memos will reduce burden and clarify for the regulated community how the agency will engage.

Some states have responded initially that these efforts will lead to improved consistency in information requests across the country. They recognize the need for collaboration between EPA and states prior to sending 114 or 308 letters, as many times the state may have the desired information. [Graves]



Upcoming Events

U.S. EPA on National Compliance Initiatives

U.S. EPA will hold a call on **December 3 at 2-3 p.m.** to discuss the selection of the National Compliance Initiatives for the next cycle, fiscal years 2020-2023. To join the call, please call (855) 564-1700 extension 1107465 and enter participant code 234567. [Swanson]

E-Enterprise & Massachusetts on Permitting

On **December 6 at 12:30-2 p.m. Eastern**, E-Enterprise will host a permitting webinar to spotlight work of the Massachusetts Department of Environmental Protection (MassDEP) on its state electronic permitting system development and deployment. The work involves deploying a scalable e-permitting platform for MassDEP, the Department of Agricultural Resources, and the Department of Conservation and Recreation using standard components and workflows.

To register for the webinar, click here here. For more information, please contact Beth Graves Beth Graves of ECOS and Sarah Abramowitz of Ross Strategic. See more on the ePermitting ePLACE portal here, and on the Information Data portal here. [Graves]

U.S. EPA on National Water Program Guidance

U.S. EPA's Office of Water will hold a call with states and state associations on **December 10 at 1-2 p.m. Eastern** to discuss measures that serve as the basis for the FY and FY 2020-2021 National Water Program Guidance.

To participate, please call (202) 991-0477 and enter conference ID 2021895. If you have questions, please contact Christopher Gollan of U.S. EPA's Office of Water. [Piper]

ECOS & U.S. EPA on Compliance Research for Effective Government

Next up in ECOS and U.S. EPA's webinar series *Compliance Research for Effective Government* is a look at the New Hampshire Hazardous Waste Generator Training Program on **December 11 at 1-2 p.m. Eastern.** The webinar will feature Tim Prospert of the New Hampshire Department of Environmental Services and Dr. Sarah Strafford of the College of William and Mary.

Register for the webinar here. For more information, please contact Sonia Altieri of ECOS. [Altieri]

ITRC on PFAS

The Interstate Technology & Regulatory Council (ITRC) invites you to participate in its

PFAS training in Grand Rapids, Michigan on **December 13**. This eight-hour training will focus on PFAS regulations, site characterization, sampling and analysis, AFFF, treatment technologies, and risk communication. The training is FREE for state and federal regulators, and travel scholarships are available for participants traveling 50 miles or more.

Learn more and register here. [Olonoff]

U.S. EPA on Methane Mitigation

U.S. EPA's Natural Gas STAR and Methane Challenge Programs invite states to participate in the *Data-Driven Decision Making for Cost-Effective Methane Emission Mitigation* Workshop on **December 14**. ECOS has partnered with these U.S. EPA programs on methane reduction through the Shale Gas Caucus.

The workshop, to be held at Pacific Gas and Electric's facility in downtown San Francisco, will focus on the use of data and analytics in the oil and natural gas industry to drive operational changes to mitigate methane emissions. The workshop is free, but registration is required. Learn more and register here. [Parisien]

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Message

From: Engaging Supervising & Managing the New Government Workforce [NewGovWorkforce&PMA@PotomacForumEvent.org]
Sent: 12/10/2018 1:01:43 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] Tomorrow (Tues) - Managing the New Gov Workforce & Improving Engagement

Starts Tomorrow (Tues Dec 11th)
See our 17 Outstanding Speakers & You Will Want to Register

New Workshop to Help You Improve Engagement. Raise FEVS Scores, Develop, Manage and Supervise the Future Federal Workforce & Meet CAP & PMA Objectives

Developing, Managing and Supervising the Federal Workforce of the Future Training Workshop:

Meeting the Goals of the Administration

How best to encourage employee engagement, improve the Federal hiring process to enhance the employee experience and create Federal competency reskilling and optimal career pathways to achieve future workforce requirements in the modern, mobile workplace.

December 11, 2018
Willard InterContinental Hotel
Washington, D.C.

Information or Registration:
www.PotomacForum.org

Workshop For Government Employees & Industry Partners
No Press Permitted to Permit Candid Discussion

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info@PotomacForum.org
(703) 683-1613

Keynote Speaker

Rebecca Ayers, PhD,
Performance Management Solutions
United States Office of Personnel Management

New Speakers Just Announced:

Shannon Finnegan
Assistant Director of Examining Human Capital
and Tax Administration Issues
Government Accountability Office (GAO)

Jason Briefel
Executive Director
Senior Executives Association (SEA)

Robert Goldenkoff
Director, Strategic Issues
Government Accountability Office (GAO)

Confirmed Speakers

Mika Cross
Award Winning Federal Workforce Expert

Dr. Ray M. Crawford, Jr.
Chief of Staff
Executive Level Outreach
Office of Federal Student Aid
Department of Education (ED)

Thevee Gray
Personnel Psychologist
Department of Agriculture (AG)

Chris Armstrong
Veritas Culture
Former Culture Executive

Intelligence Community Agencies

Vince Brantley
Veritas Culture
Former Culture Executive
Defense Intelligence Agency (DIA)

Erica M. Roberts
Training Director, Customer Experience Expert,
and Employee Engagement Strategist
Former Director of Customer Service and Customer Service Program
Department of Labor (DOL)

Alex Harrington
Senior Special Advisor
Talent Management Division
Customs and Border Protection (CBP)/DHS

Barbara H. Irwin
Founder and President
HR Advisors Group

Michael Lawyer
Director, Performance and Resource Optimization Division
Department Of Housing and Urban Development (HUD)

Loren Kargbo
Talent Acquisition Lead
Enterprise Services
Department of Commerce (DOC)

Darryl E. Peek II
Senior Manager, Strategy
Salesforce Public Sector North America
(Former DHS Executive)

Shannon Finnegan
Assistant Director of Examining Human Capital
and Tax Administration Issues
Government Accountability Office (GAO)

Dolly Oberoi
Founder & CLO
C2 Technologies

Brent Jordan
C2 Technologies

Overview:
The president's management agenda provides a long-term vision for rebuilding public trust in government by tackling systemic barriers to reform, including an ineffective personnel management system and outdated technology infrastructure. The goals are threefold: deliver on agency missions, provide superior service to the public, and eliminate waste.

Experienced Human Capital Executives and Leadership Experts will share their insight and experience in developing and implementing long and short-term workforce management practices that will achieve implementing the PMA vision and develop the next generation of Federal government leaders.

This workshop will provide you with practical, easy to implement tools and resources to help your agency develop an innovative hiring strategy that brings on the right talent with the right skills, empower employees, align skills and competencies with mission requirements and modernize your workplace for the digital age while understanding how best to improve performance, increase accountability and enhance mission efficacy through effective recruitment and retention.

What You Will Learn:
- Identify the competencies needed as a successful supervisor to maximize employee performance and how to avoid common pitfalls to managing performance and conduct in the modern workplace

- Optimize your strategy for recruiting, hiring, training and rewarding the Future Federal Workforce by bringing in the next generation of workers and retaining top talent; training (and retraining) personnel to forecast for future mission requirements, develop leaders across all levels of the organization and to enhance performance across the organization.

- Adopt promising practices that drive positive outcomes by leveraging the Federal Employee Viewpoint Survey Results into actionable steps to cultivate an inclusive, high-performing culture designed to retain top talent and maximize employee potential and performance

- Optimize employee recognition programs designed to recognize, reward and retain top performers;

- Build your toolkit for cultivating a culture of engagement and accountability designed to achieve enhanced organizational and individual performance

- Workforce & Engagement and Cross Agency Priorities and the President's Management Agenda

Who Should Attend:
- Federal supervisors and managers
- Federal HR Executives, managers and staff
- Anyone responsible for implementing Agency restructuring plans
- Federal employees or members of employee affinity groups
- Communications practitioners responsible for leading change management and internal communications campaigns
- IGs and Staff
- Federal CXOs responsible for the President's Management Agenda
- Industry Partners who support the government

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Registration and Information:
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Message

From: Ex. 6
Sent: 11/30/2018 6:00:44 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: FW: E-introduction
Attachments: Ex. 6 Resume.General.pdf

Ryan -- I wanted to check in with you before the end of the week. I will be in DC next week and hope to visit with you. My Best!

Ex. 6

-----Original Message-----
From: Ex. 6
Sent: Tuesday, November 27, 2018 10:20 AM
To: 'Ryan Jackson' <jackson.ryan@epa.gov>
Cc: Sheila Greenwood Ex. 6
Subject: RE: E-introduction

Dear Ryan -- Thank you very much for your note. As Sheila mentioned, I will be in DC next week (the week of December 3rd) and would like to visit with you. I have taken the liberty of attaching my resume (that has been submitted to the WH). Please let me know if I can stop by -- of course, I will work around your schedule. Thank you for your consideration.

Ex. 6

-----Original Message-----
From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 27, 2018 7:11 AM
To: Sheila Greenwood Ex. 6 Ex. 6
Subject: RE: E-introduction

Thank you both and thanks for your interest.

-----Original Message-----
From: Sheila Greenwood Ex. 6
Sent: Monday, November 26, 2018 10:28 PM
To: Ex. 6 Jackson, Ryan <jackson.ryan@epa.gov>
Subject: E-introduction

Good evening, gentlemen. I am connecting you two via email. As I mentioned Ryan, Ex. 6 will be in town next week and he has a great interest in joining the Administration and, specifically, EPA. I will let you two work it out from here!

Best,
Sheila

Sent from my iPhone

Ex. 6

Ex. 6

Ex. 6

Message

From: Kenneth wagner [Ex. 6]
Sent: 11/28/2018 5:35:58 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Molina, Michael [molina.michael@epa.gov]
Subject: Fwd: Ken Wagner Press Release

Begin forwarded message:

From: Baylee Lakey <baylee@stittforgovernor.com>
Date: November 28, 2018 at 11:18:56 AM CST
To: Kenneth wagner [Ex. 6]
Cc: Donelle Harder <donelle@stittforgovernor.com>
Subject: Re: Ken Wagner Press Release

Hi Ken! Yes, the release is now live. The copy that was sent out is attached below.

FOR IMMEDIATE RELEASE
Media Contact: Donelle Harder, Donelle@StittforGovernor.com

GOVERNOR-ELECT KEVIN STITT ANNOUNCES SECRETARY OF ENERGY AND ENVIRONMENT

Oklahoma City, Okla. (Nov. 28, 2018) – Governor-elect Kevin Stitt announced today the appointment of Kenneth Wagner as the next Secretary of Energy and Environment.

"I am pleased to announce that Ken Wagner will be joining my administration as the next Oklahoma Secretary of Energy and Environment," said Stitt. **"Wagner is well respected among environment leaders, energy industry experts, and state regulators in neighboring states. He will play a critical role in advising my administration on policy that encourages robust and responsible development of our natural resources, ensures clean air and clear water for all Oklahomans, and makes our state an example for others to follow."**

Kenneth (Ken) Wagner currently serves as the Senior Advisor to the Administrator for Regional and State Affairs at the US Environmental Protection Agency (EPA). Prior to working at the EPA, Wagner served as founding partner and managing partner at the Tulsa law firm Latham, Wagner, Steele & Lehman, P.C. Wagner graduated from the University of Tulsa College of Law in 1993.

> "During his time at EPA, Ken was at the forefront of our efforts to work more closely with states and tribes to ensure clean air, water, and land for all Americans. He traveled to nearly every state in the nation, strengthening existing relationships and forging important new ones. He helped provide our regional offices a direct and open line of communication to headquarters to address local issues in a comprehensive and unified manner. We are grateful for his service to EPA and the American public, and we know he will bring the same dedication

and expertise to Oklahoma as he leads the state's efforts to improve energy production and environmental protection."
– *Andrew Wheeler, EPA Acting Administrator*

"Ken Wagner provides a wealth of knowledge and a proven history as a senior adviser of the U.S. Environmental Protection Agency. We are pleased he will return to Oklahoma to serve as the Secretary of Energy & Environment. His experience in dealing with regulations regarding energy production will ensure our state continues to implement rational and reasonable policies that encourage the responsible production of Oklahoma's oil and natural gas." *-Chad Warmington, President of Oklahoma Oil & Gas Association*

"AAPCA represents more than 40 state and local air agencies with senior officials from 20 state air agencies sitting on its Board of Directors and an additional 25 local agency members. At our Spring 2018 meeting, Ken talked with us about his role and work at EPA to implement cooperative federalism by fostering effective EPA working relationships with states, tribes and local air agencies. An effective EPA-state working relationship is key to helping each air agency address the unique challenges and opportunities that it faces to improve air quality. AAPCA appreciated Ken's solution oriented focus and the fact that he actively listened to and engaged with our membership."
- Nancy Vehr, President of the Association of Air Pollution Control Agencies

"Ken Wagner has been an incredible advocate for advancing states issues with EPA. He has embraced the concept Cooperative Federalism and provided states a direct line of communication to the leadership at EPA Headquarters and specifically to the Administrator. While we will miss Ken in his role at EPA, Oklahoma gains a seasoned leader! Nebraska and ECOS offer hearty Congratulations!"
-Jim Macy, Vice President of the Environmental Council of the States (ECOS)

"Arkansas is delighted to welcome Ken Wagner as the new Secretary of Energy and Environment for the State of Oklahoma. As a skilled state's-rights advocate who has first-hand knowledge of the federal bureaucracy, Ken is uniquely qualified to assume this important role. I look forward to working with him as we strive to support efficient, effective, and environmentally protective economic development in our region through our trusted partnership on critical state-to-state initiatives. Arkansas and Oklahoma share a bright future in energy and environmental progress."
-Becky Keogh, Director of Arkansas Department of Environmental Quality

"I have enjoyed working with Ken Wagner in his capacity as Senior Advisor to the Administrator for Regional and State Affairs at EPA," said Carol Comer, Director of the Missouri Department of Natural Resources. "Ken is thoughtful, collaborative and an amazing solver of complex problems. I look forward to working with him in his new role as the Secretary of Energy and Environment in my neighboring state of Oklahoma."
- Carol Comer, Director of Missouri Department of Natural Resources

"Congratulation Oklahoma! The selection of Ken Wagner as Oklahoma's new Secretary of Energy and Environment was a great decision. Oklahoma will be well served by Ken, and we look forward to working with him during his tenure."

-Leo Henning, Director of Environment for the Kansas Department of Health and Environment

"I had the pleasure of getting to know and work with Ken during my time at EPA Region 6. Oklahomans will be well-served by Ken's extensive knowledge of state and federal environmental issues. I look forward to working on federal regulatory policies that affect both Texas and Oklahoma while continuing to protect our natural resources and ensuring economic development for our great states."
- Emily Lindley, Commissioner of Texas Commission on Environmental Quality

"Myself and the Quapaw Nation are extremely excited with Governor Elect Stitt naming Kenneth Wagner to be the Secretary of Energy and Environment. Ken has shown his incredible dedication to developing Tribal Nation's capabilities to participate in environmental cleanups associated with Tribal lands. Ken is one the hardest working public servants I have ever met. Governor elect Stitt has ensured a brighter future for Oklahoma with this important appointment"
- John L. Berrey, Chairman of the Quapaw Nation

"The RESTORE Council was fortunate to have Ken Wagner serve as the EPA's designee to the Council. Ken's leadership as Chair, particularly with team and consensus building helped create much needed momentum for Gulf Restoration."
-Ben Scaggs, Executive Director of RESTORE Council

###

From: Kenneth wagner Ex. 6
Date: Wednesday, November 28, 2018 at 11:15 AM
To: Baylee Lakey <baylee@stittforgovernor.com>
Cc: Donelle Harder <donelle@stittforgovernor.com>
Subject: Re: Ken Wagner Press Release

Baylee: Did it go? Can you send to me so that I can send to EPA?

Kenneth E Wagner

Ex. 6

This email address is a personal address and accepts no business or official correspondence on behalf of the US EPA. The email may contain privileged information and is intended for the receipient only.

On Nov 28, 2018, at 9:27 AM, Baylee Lakey <baylee@stittforgovernor.com> wrote:

I have the release scheduled to go out at 11AM. My cell is Ex. 6

Best,

Baylee Lakey
Ex. 6
Baylee@StittForGovernor.com
www.stittforgovernor.com

From: Donelle Harder <donelle@stittforgovernor.com>
Date: Wednesday, November 28, 2018 at 9:26 AM
To: Baylee Lakey <baylee@stittforgovernor.com>, Kenneth Wagner
Ex. 6
Subject: FW: Ken Wagner Press Release

Baylee – below is Ken's press release that was approved by the Governor-elect this morning. Can you send it at 11AM?

Ken – I'm currently on a plane flying to Arizona for RGA. Please call Baylee if you catch any last minute edits. Baylee – please respond with your cell number! Thanks all!

GOVERNOR-ELECT KEVIN STITT ANNOUNCES SECRETARY OF ENERGY AND ENVIRONMENT

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-Ben Scaggs, Executive Director of RESTORE Council

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Message

From: Bill Cutler [bill.cutler@cement-lock.com]
Sent: 12/6/2018 5:18:04 PM
To: Wheeler, Andrew [wheeler.andrew@epa.gov]
CC: Darwin, Henry [darwin.henry@epa.gov]; Wooden-Aguilar, Helena [Wooden-Aguilar.Helena@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]; al.hendricks@cement-lock.com
Subject: Permanent Solution for the Destruction of Toxic Materials, with Beneficial-Reuse: Schedule of Meeting: December 11th

Mr. Wheeler:

Representatives of the "Cement-Lock" hazardous material destruction Team will be in Washington DC on Tuesday, December 11th, meeting with Congressional & Environmental constituents. The purpose of the visit is to provide an update on the progress that has been made introducing the Cement-Lock process as a **Permanent** solution (*with a Beneficial-use residual*) for the destruction of the toxicity of hazardous materials in the environment.

If you and/or other EPA Staff's schedules are open the morning of December 11th, we would like to schedule a time to meet. Please let us know your availability.

Regards,

Bill Cutler
Volcano Partners, LLC
350 Fifth Avenue, Suite 5310
New York, NY 10118

T – (786) 487-4409

www.cement-lock.com

Message

From: Dan Blumenthal [dblumenthal@aei.org]
Sent: 12/12/2018 9:45:12 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Huawei is the doorway to China's police state

Dear Colleagues:

I'm writing to share my latest essay in *The National Interest*, " Huawei is the doorway to China's police state".

As always, I look forward to your comments and feedback.

Best,

Dan Blumenthal
Director of Asian Studies and Resident Fellow
American Enterprise Institute

Message

From: Environmental Law360 [news-q2@law360.com]
Sent: 12/12/2018 8:34:14 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] 3 Takeaways From The New Trump Water Rule

ENVIRONMENTAL

LAW360
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Wednesday, December 12, 2018

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TOP NEWS

Analysis

3 Takeaways From The New Trump Water Rule

The Trump administration's proposal to rein in federal government oversight of waterways under the Clean Water Act — a move rooted in late U.S. Supreme Court Justice Antonin Scalia's interpretation of federal jurisdiction — is generating fierce controversy from environmental groups and others saying it leaves too many bodies of water unprotected. Read full article »

EPA, Army Corps Float Replacement Water Rule

The Trump administration on Tuesday unveiled its replacement of a rule designed to clarify which waterways in the country are subject to Clean Water Act jurisdiction, taking a narrower approach than the Obama administration and delivering on one of the president's key campaign promises. Read full article »

Climate Report Proves Carbon Regs Must Stick, EPA Told

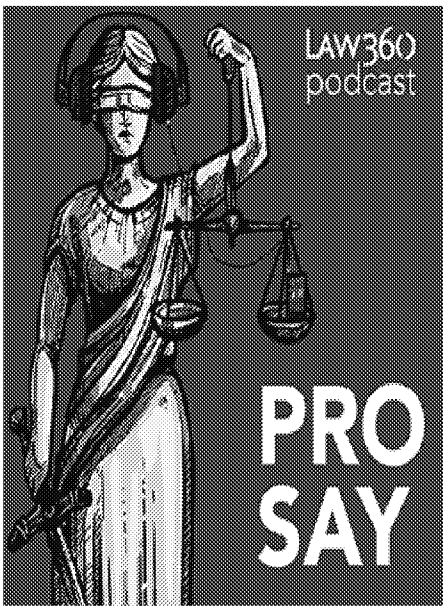
The dire conclusions in the blockbuster climate change report recently released by the Trump administration contradict White House efforts to roll back greenhouse gas emissions standards for vehicles and power plants and the proposals should be yanked immediately, dozens of state attorneys general and city and county attorneys said Tuesday. Read full article »

Enviros Sue To Deep-Six Atlantic Seismic Testing Permits

Environmental groups on Tuesday launched a challenge in South Carolina federal court to the Trump administration's issuance of permits for oil and gas companies to injure or otherwise disrupt whales and other marine mammals during seismic testing off the Atlantic coast, a precursor for offshore drilling in the region. Read full article »

MVP: King & Spalding's Tracie Renfroe

Tracie Renfroe, partner at King & Spalding, steered a ConocoPhillips affiliate toward a $380 million win and Chevron away from billion-dollar losses in



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Harder LLP

disputes over Ecuador's natural resources, making her one of Law360's 2018 Environmental MVPs. Read full article »

LITIGATION

3M Fire Suppressant MDL Will Be Heard In South Carolina

Seventy-five cases around the U.S. against 3M and others involving contamination from the firefighting foam AFFF have been consolidated and transferred to the District of South Carolina by the Judicial Panel on Multidistrict Litigation. Read full article »

NYC Construction Co. Files For Ch. 11 Amid Unpaid $122M

A New York-based mechanical construction company has filed for Ch. 11 protection, citing more than $122 million in outstanding payments and damages owed to it by project owners and an equipment maker, including the New York City Department of Environmental Protection. Read full article »

VW Slams Bondholder's Bid To Redo Emissions Fraud Suit

Volkswagen has told a California federal judge that a bondholder cannot tack on insider trading claims to a proposed class action alleging it was duped into buying overpriced bonds based on misleading offering documents concealing the German automaker's 2015 diesel emissions scandal. Read full article »

US Trustee Objects To Pay Request For Level Solar Atty

The U.S. Trustee objected Tuesday to a nearly $260,000 fee request by the attorney of defunct residential solar company Level Solar Inc., telling a New York bankruptcy court it should hold off on making a decision given the estate's limited funds and "the uncertain outcome of this case." Read full article »

EXPERT ANALYSIS

Opening Comments: A Key Strategic Decision In Mediation

Opening comments by parties in mediation that are made with the proper content and tone can diffuse pent-up emotion and pave the way for a successful resolution. But an opening presentation can do more harm than good if delivered the wrong way, say Jann Johnson and William Haddad of ADR Systems LLC. Read full article »

LEGAL INDUSTRY

US Legal Industry Saw Best Growth In Nearly 10 Years

This year has been the U.S. legal industry's best for growth in nearly 10 years, with firms at the large and small ends of the scale reaping the vast share of the rewards, according to a report released Tuesday. Read full article »

Legal Hiring Poised For Boom In 2019

Nearly half of U.S. lawyers in charge of hiring say their law firm or corporate legal department is poised to expand in the next six months, with the majority predicting that litigation will be the biggest driver of that growth, according to the results of a survey released Tuesday. Read full article »

Microsoft Singles Out Davis Wright For Diversity Efforts

Heninger Garrison
Jenner & Block
Joseph Hage
Kaplan Rice
King & Spalding
Klestadt Winters
Knauf Shaw
LaMonica Herbst
Latham & Watkins
Matsikoudis & Fanciullo
Mayer Brown
McDivitt Law Firm
Meyers Nave
Munger Tolles
Paukert & Troppmann
Perkins Coie
Schertler & Onorato
Shipman & Goodwin
Silverman Acampora
Steptoe & Johnson LLP
Sullivan & Cromwell
Taft Stettinius
Williams & Connolly

COMPANIES

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American Bar Association
Barclays PLC
Cable News Network Inc.
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Chevron Corp.
ConocoPhillips Co.
Consumer Watchdog
Defenders of Wildlife
Ion Geophysical Corporation
Johnson Controls International PLC
Microsoft Corporation
Natural Resources Defense Council
Oceana Inc.
Public Service Enterprise Group Inc.
Robert Half International Inc.
Sierra Club
Southern Environmental Law Center

Microsoft Corp. on Tuesday recognized Davis Wright Tremaine LLP as the top-performing law firm participating in its diversity program, as the technology company celebrates the 10th anniversary of its effort to address diversity issues in the legal industry. Read full article »

Senate OKs Trump's 8th Circ. Pick Despite Flake Opposition

The U.S. Senate relied on Vice President Mike Pence for the first time to confirm one of President Donald Trump's appeals court judges, as he cast the tie-breaking vote for Eighth Circuit nominee Jonathan Kobes over the objections of Sen. Jeff Flake, R-Ariz. Read full article »

California's Harris To Keep Senate Judiciary Seat

California is set to have both of its senators on the Senate Judiciary Committee next year, as a leadership deal allowed potential presidential candidate Sen. Kamala Harris, D-Calif., to keep her spot on the panel. Read full article »

Court Reporting Co. Must Follow Calif. Regs

A California state appeals court refused Friday to revive a court reporter's unfair competition suit against major court-reporting firm U.S. Legal Support Inc., but held that a lower court incorrectly absolved the company of the obligation to comply with California regulations for licensed professionals. Read full article »

Stormy Daniels Owes Trump Attys $300K In Fees, Sanctions

Stormy Daniels must pay President Donald Trump's attorneys approximately $300,000 in fees, costs and sanctions, which was less than half of what they originally sought, a California federal judge ordered Tuesday following the dismissal of the adult film star's defamation suit against the president. Read full article »

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GOVERNMENT AGENCIES

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National Marine Fisheries Service

New York City Department of Environmental Protection

U.S. Army

U.S. Department of Justice

U.S. Environmental Protection Agency

U.S. Senate

U.S. Supreme Court

United States Bankruptcy Court for the Southern District of New York

World Bank Group

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Message

From: Mike Sommers [registrar@api.org]
Sent: 12/13/2018 3:42:36 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: You're Invited to API's State of American Energy 2019

The American Petroleum Institute invites you to

The 2019 State of American Energy luncheon – celebrating Generation Energy

We are in the midst of Generation Energy. More natural gas and oil is produced in the United States than any other country in the world. At the same time, U.S. carbon dioxide emissions are at their lowest levels in a generation, largely because of the growing role played by clean natural gas. Our industry is an economic engine, supporting 10.3 million jobs – to produce, deliver and refine natural gas and oil – as well as jobs associated with energy development and the personal spending of our workers.

Guided by smart policies and regulations that unleash innovation and progress, natural gas and oil are playing a powerful role in America's economic progress and will for generations to come.

Join me and industry leaders from coast to coast at the 2019 State of American Energy luncheon.

Sincerely,

MIKE SOMMERS
President and CEO, API

RSVP

BY DECEMBER 31st
This invitation is non-transferable.

WHEN

TUESDAY, JANUARY 8, 2019
11:30 A.M.– 1:30 P.M.

WHERE

RONALD REAGAN BUILDING AND INTERNATIONAL TRADE CENTER
ATRIUM BALLROOM
1300 PENNSYLVANIA AVENUE, NW
WASHINGTON, DC 20004
Please use entrance on 14th Street

This event has been designed to comply with the gifts and ethics rules of the U.S. Senate and House of Representatives as a "widely attended event." Employees of the executive branch may wish to consult their Designated Agency Ethics Official about any rules that may apply to their attendance at this event.

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Message

From: Bloomberg Government [bbg_gov@info.bgov.com]
Sent: 12/10/2018 12:01:20 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Why the U.S. Needs an AI Strategy

Bloomberg Government Technocrat

De

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What's New This Week:
AI Is Here to Stay

Last week the nation bid farewell to the 41st U.S. president, George H.W. Bush, who left a legacy beyond his presidency. During his time in the White House, Bush was responsible for several IT reforms by which the gove still operates. In a time before iPhones and social media, his leadership played an integral part in the transition analog to digital technologies.

Fast-forward 25 years: The current administration wants to maintain America's competitive edge by focusing or advanced technologies like blockchain, artificial intelligence, and machine learning. The White House is in the p of updating an AI research and development strategy first published under the Obama administration. Lynn Par assistant director of AI at the White House Office of Science and Technology Policy, hinted that the next iteratio planned for spring 2019, will reflect continuity on the part of the Trump administration.

BGOV's Chris Cornillie explains more about the upcoming AI strategy and where it may depart from its predece this week's exclusive story.

Parker recently spoke at an event centered on the release of a report from the Center for Data Innovation, whic advocates a comprehensive AI national strategy. The report suggests the U.S. is behind other countries—inclu Canada, China, France, and Japan—in adopting such a plan. The roughly 50-page document has recommenda the Trump administration and leaders in Congress to help the U.S. catch up.

Fears are growing that government could use AI to monitor certain populations or discriminate against different

That's why AI should be regulated in areas like criminal justice and health care, argues one research group, AI Institute, in its own newly released report.

The invasion of privacy is a touchy subject, and Facebook is a prime example of what happens when companie governments) misuse technology. Just last week the British parliament released documents that show senior F executives reportedly blocked competitors from accessing the company's user data to maintain dominance in th space. The news is alarming, but not surprising.

If you're hungry for more, keep reading.

Get Smart

"Hopefully in early spring you'll be seeing an updated version of that R&D strategic plan, as well as our process we'll be using at the federal level for tracking the progress of those investments."

—Lynn Parker, assistant director of AI at the White House Office of Science and Technology Policy, on the upc release of a national strategy for artificial intelligence

Read more in this week's exclusive from Bloomberg Government.

In the Cloud

DOD Moves Fast on Back-Office Cloud Contract
The Defense Department is on a fast track to award its $8 billion Defense Enterprise Office Solution contract, d to replace legacy applications with cloud-based email and other services. The agency plans to issue a draft quo request in January. Read more.

DISA Needs More Time for Cloud-Based System Proposals
The Defense Information Systems Agency is extending the deadline for vendors to submit white papers propos cloud-based system that allows employees to access the internet without the public web. The system would ha more than 3 million users. Read more.

Strategy & Leadership

DOT CIO Leaving After Year-Long Stint
Vicki Hildebrand is moving on after a brief tenure as CIO of the Department of Transportation. Hildebrand, who on reshaping how the agency uses technology, will leave the job in the next few weeks. Her replacement hasn' been named. Read more.

CIA's Edwards Wants Data-Savvy Workforce
Data is everything for the Central Intelligence Agency, which is why CIO John Edwards says it's important to bu teams dedicated to "deepening the skills of the digital workforce." The efforts are part of the agency's Directora Digital Innovation, he said. Read more.

Next Tech

HHS Close to Rolling Out Blockchain Acquisition Solution
The Department of Health and Human Services is on a mission to have the first blockchain-based program in th federal government with an authority to operate. The program, HHS Accelerate, also uses machine learning an artificial intelligence. Read more.

Secret Service Tests Facial Recognition at White House
The Secret Service is turning to facial recognition technology to help identify individuals who enter the White Ho The pilot program, which will use camera streams from the sidewalk and street outside the building, is already r privacy concerns. Read more.

Eye on Security

DHS Looks to Build Cyberthreat Warning Network
Homeland Security wants to develop software that helps small and mid-sized businesses connect with each oth identify hacking attempts. It would operate like a social network that businesses can use to exchange knowledg potential cyberattacks. Read more.

TSA Introduces Cybersecurity Road Map
The Transportation Security Administration released a road map that will guide its cybersecurity policy for the n years. TSA administrator David Pekoske said the plan "is a first" for the agency and aligns with the DHS cybers strategy. Read more.

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1101 K Street NW, Suite 500, Washington DC 20005. Phone: 1.800.372.1033

Message

From: Daniel Lippman [dlippman@politico.com]
Sent: 12/14/2018 7:08:43 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: Hey Ryan -- question from Politico Playbook

THX

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Friday, December 14, 2018 2:06:12 PM
To: Daniel Lippman
Subject: RE: Hey Ryan -- question from Politico Playbook

Sure. I'll shoot you some answers. Thanks.

From: Daniel Lippman [mailto:dlippman@politico.com]
Sent: Friday, December 14, 2018 2:00 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Hey Ryan -- question from Politico Playbook

Dear Ryan,

Hope you are well! We do a short article in Playbook every day called Birthday of the Day. Since your birthday is soon, we would love to feature you on your big day. Would you be interested in participating in this?

Here are the questions for the mini Q&A -- would only need short answers and a headshot by Sunday COB.

How/where are you celebrating your birthday and with whom?
How did you get your start in politics?
What's an interesting book/article you're reading now or finished? And why?
What is a trend going on in the U.S. or abroad that doesn't get enough attention?
How is the Trump presidency going?
What's a fun fact that people in Washington might not know about you?

Thank you very much.

Best,
Daniel

Message

From: Bruce Thompson [bthompson@axpc.us]
Sent: 11/27/2018 4:45:57 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re:

Ryan
Just wrapped up with Francis and I will forward it to you as soon as I get back to my office.

Bruce

Sent from my iPhone

On Nov 27, 2018, at 11:21 AM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

> Bruce, can you send me the AXPC invite?
>
> Ryan Jackson
> Chief of Staff
> U.S. Environmental Protection Agency
> (202) 564-6999

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 11/28/2018 9:52:13 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]; Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Subject: RE: re - Dunn

Thanks for starting to work through these earlier. Here is a new list, recognizing that we haven't resolved or in some cases even discussed some of them. I've taken 5 things off the earlier 15-item list that appeared from our discussion to be not quickly resolvable, and note that among those things, the worker/SNUR/consent order and MC are likely to be raised by Members tomorrow and are important items that we nevertheless recognize are not likely to be doable in this context and in this timeframe. I've left ethylene oxide in just as a continued flag to you.

I'm also including our response, in caps, to a couple of the items we did discuss earlier. See esp 5 and 8 but a few other places as well.

Green highlight means I think we are resolved and just need to figure out words for a letter – thank you.

Let me know when we should resume this conversation – obv after the hearing is better for me. We've also started describing the Wright state of play to people in advance of having final agreed-upon letter text.

Michal

1. **PMN transparency measures** — EPA has reduced the information that is available to the public as it evaluates PMNs. We would like this remedied by 1/15/19, and would like the following materials be made available:
   - Each PMN and its attachments, all amendments, correspondence with EPA, and other supporting documentation in an electronic docket within 15 days of receipt of the PMN; and publication of the FR notice of receipt required under 5(d) within 30 days of PMN receipt.
   - EPA's underlying risk assessment documents that support each "not likely to present an unreasonable risk" determination EPA makes on PMNs, at the same time that the determination is communicated to the PMN submitter and posted on EPA's website.
   - EPA career staff's "interim recommendation" on each PMN substance undergoing review.

We can place PMNs and associated documents ~~on EPA's website~~ IN ELECTRONIC DOCKETS ON REGULATIONS.GOV [YOUR REGULATIONS REQUIRE THIS] ~~but can't commit to~~ within 15 days ~~because the CBI comb through takes longer than that~~ [WHY IS EPA DOING THE CBI COMB WHEN THE APPLICANTS ARE SUPPOSED TO PROVIDE YOU WITH PUBLICLY RELEASABLE VERSIONS OF THE DOCUMENTS THEY SEND YOU? WHY NOT JUST ENFORCE YOUR OWN REQUIREMENTS?]. We can commit to briefing the committee on what our plan is to place more PMN information on the website. We can commit to posting PMNs in the Federal Register every month. We can in fact commit to placing PMNs, the exemptions (TMEs), and notices of commencement in the Federal Register each month. We should be doing this anyway, but this is specifically what we can provide monthly [NOTE THAT YOU ARE CURRENTLY 3-6 MONTHS BEHND IN POSTING ANYTHING. GIVEN THE 90 DAY DEADLINE FOR PMN REVIEW, THE DEADLINES HIGHLIGHTED ABOVE FOR PUBLIC POSTING REALLY NEED TO BE THE DEADLINES]:

- PMNs/SNUNs/MCANs: Case number, amendment number and version, date received, manufacturer (if not CBI), use (specific or generic if CBI), chemical substance (specific AND CAS NUMBER IF NOT CBI, or generic name if CBI).
- TME information: Case, Submission type, Version, Received date, Manufacturer, Use, Chemical substance.
- NOC information: Case, Received date, Commencement date, If amendment and type of amendment (amendment to generic name, specific name, technical contact information, etc.), chemical substance.

- EPA'S UNDERLYING RISK ASSESSMENT DOCUMENTS THAT SUPPORT EACH "NOT LIKELY TO PRESENT AN UNREASONABLE RISK" DETERMINATION EPA MAKES ON PMNS, AT THE SAME TIME THAT THE DETERMINATION IS COMMUNICATED TO THE PMN SUBMITTER AND POSTED ON EPA'S WEBSITE.
- EPA CAREER STAFF'S "INTERIM RECOMMENDATION" ON EACH PMN SUBSTANCE UNDERGOING REVIEW.

2. **Section 5 framework:** EPA released a framework on how it would implement section 5 about a year ago, and held a public meeting and received written comments on it. While EPA appears to have subsequently made changes to the manner in which it is evaluating new chemicals, it has never modified or re-published this framework document to reflect those changes. We would like EPA to commit to publicly release a revised section 5 framework document by ~~1/15/19~~ 1/31/19 [THIS GIVES YOU 60 DAYS PER BELOW] that includes EPA's legal justifications for it, and take additional public comments on it.

From RJ:
We can also discuss a standard operating procedure we are probably 60 days out from finalizing on making public more material substantiating the not likely determinations. We can write to commit to brief the committee on that procedure when it's ready to be released. On the framework, we can provide a letter as well or briefing on how we are evaluating new chemicals and could commit to holding another public meeting on that. The framework was described in the document as a work in progress when issued [UNDERSTOOD, BUT IN THE SAME WAY A PROPOSED RULE THEN INCORPORATES COMMENTS AND IS RELEASED IN FINAL FORM, THAT NEEDS TO HAPPEN ON THEFRAMEWORK ALSO. IT ISN'T ENOUGH TO BRIEF THE COMMITTEE, THOUGH THAT IS ALWAYS APPRECIATED. CAN YOU COMMIT TO PUBLISH THE NEXT VERSION OF THE FRAMEWORK BY 1/31/19, INCLUDE LEGAL JUSTIFICATION FOR WHATEVER IT SAYS, HOLD A PUBLIC MEETING AND TAKE ADDITIONAL PUBLIC COMMENTS, AND BRIEF THE COMMITTEE. I ALSO ASSUME THAT THE NEW DOCUMENT WILL INCLUDE THE 'NOT LIKELY' INFORMATION YOU REFERENCED BUT THAT WON'T BE ALL IT INCLUDES. I DIDN'T EDIT THE WORDS ABOVE OTHER THAN THE DATE BECAUSE IT WASN'T 100% CLEAR TO ME THAT WE WERE TALKING ABOUT THE SAME DOCUMENT.

3. **CBI substantiation**– Section 14(c)(3) of new TSCA requires submitters of information to substantiate CBI claims. In addition, recognizing EPA's responsibility to weed out unwarranted CBI claims, section 14(g)(1)(A) requires EPA to review and either approve or deny CBI claims within 90 days of receipt. Under section 14(g)(1)(C), this review process must address all CBI claims for chemical identity and a representative subset of other claims comprising at least 25 percent of the total submitted. It is hard to see whether all of those things are happening, because so much of the PMN submittals and EPA's review thereof are redacted. Could EPA commit to issuing a report by July 1, 2019 that describes its efforts to comply with the CBI requirements in sections 14(c)(3) and 14(g)(1), and seek public comment and recommendations for improved management and review of CBI claims?

From RJ: We can commit to provide a report or letter or whatever the form on how we are handling CBI requirements WE DO WANT A REPORT ON THIS AS DESCRIBED ABOVE, BUT I NOTE THAT SECTION 26(j)(1) REQUIRES THAT EACH CBI CLAIM DETERMINATION HAS TO BE MADE PUBLIC, AND EPA HAS YET TO MAKE A SINGLE ONE PUBLIC. SAME WITH UNIQUE IDENTIFIERS. A REPORT ON WHAT YOU ARE DOING AND WHEN YOU WILL IMPLEMENT THE LAW IS THE MOST MINIMAL THING WE COULD ASK FOR IN THIS SPACE. AT THE VERY LEAST, THE REPORT SHOULD BE DETAILING THE NUMBER OF CLAIMS MADE, NUMBER OF DECISIONS MADE, INCLUDE COMMITMENTS FOR HOW AND WHEN THESE DECISIONS WILL BE PUBLICLY DOCUMENTED ON SOME TRACKING DATABASE, AND SO FORTH.

4. **CBI re-substantiation -** new TSCA says that "[t]he Administrator may require any person that has claimed protection for information from disclosure under this section, whether before, on, or after the date of enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act, to reassert and substantiate or re-substantiate the claim in accordance with this section— (A) after the chemical substance is designated as a high-priority substance under section 6(b) …" 15 USC 2613(f)(1). We would like EPA to commit to undertake re-substantiation of CBI claims for chemical substances undergoing REs, and make public any information for which the CBI claim(s) are no longer valid before the draft RE is published for comment.

From RJ: and we can in the same response commit to reviewing CBI claims for chemicals in RE's. Are you simply talking about the first ten though? We will review the claims but we also will issue the RE's for the first ten in February too in a very similar fashion to PV29.
THIS SHOULD INCLUDE ALL CHEMICALS THAT ARE UNDERGOING RES, INCLUDING THE FIRST TEN. PERHAPS FOR THE FIRST TEN, IT COULD BE SOONER THAN 45 DAYS BEFORE THE END OF THE COMMENT PERIOD ON THE RE, AND FOR FUTURE CHEMICALS UNDERGOING RES, IT COULD BE BEFORE THE SCOPE OF THE RE IS PUBLISHED (SO WOULD GIVE 6 MONTHS BTW PRIORTIZING AND PUBLISHING THE SCOPE)? AS PART OF RESUBSTANTIATION, EPA SHOULD BE MAKING THE DETERMINATIONS PUBLIC AS WELL AS ANY INFORMATION THAT NO LONGER QUALIFIES FOR CBI PROTECTION.

5. **Systematic review** – OCSPP has developed its own systematic review document even though ORD's has been largely blessed by the NAS. We'd like the OCSPP version to be withdrawn and/or not used until it is reviewed by NAS, and NAS feedback incorporated.

WE TALKED ABOUT SAB REVIEW AND I DON'T THINK THIS WORKS. NAS HAS DONE REVIEWS OF SIMILAR PROTOCOLS NOT JUST FOR ORD BUT FOR NIEHS, UCSF AND OTHERS. THIS ONE IS A HIGH PRIORITY.

6. **PFAS SNUR** – EPA proposed its PFAS SNUR in 2015, and EPA has repeatedly said it is revising it to reflect new TSCA but planned to finalize it. We'd like a commitment that it be finalized by a date certain and assurance that its scope has not changed from what was proposed. My guess is this is in the mix on your PFAS management plan and that we could begin conversation on this item by reviewing the language you're currently using In that document and seeing if that language can be sent to TC in a letter.

From RJ: The PFAS SNUR is referenced in the upcoming report as well so that is very doable to commit to.
DISCUSSED SOLUTION THAT IS ANALOGOUS TO THE ONE FOR THE PFAS CERCLA DESIGNATION

7. **PFAS information -** EPA has acknowledged that it lacks information about many PFAS chemicals. We would like EPA to commit to use EPA's authority under TSCA Section 8(a)(2) to require PFAS manufacturers and processors to submit information concerning the production, use, and impacts of PFAS chemicals. My guess is this is in the mix on your PFAS management plan and that we could begin conversation on this item by reviewing the language you're currently using In that document and seeing if that language can be sent to TC in a letter. If there are other ways to get this information (section 4 orders, for example), we are definitely open.

8. **Comment period and peer review of risk evaluations:** We would like a 120 day comment period for the rest of the first 10 REs. They're the first REs to be conducted under the new law and many of them will be released for public comment simultaneously, which will be difficult for commenters to handle. We would also like to ensure that CSAC is properly set up for a separate peer review of each of the REs, and can suggest some measures that could help with that. These include augmenting the CSAC with chemical-specific expertise if necessary (and allow the public to suggest new chemical-specific reviewers as it has in other similar situations), ensuring that CSAC members reviewing particular REs do not have conflicts of interest associated with the particular chemical, providing separate CSAC peer review documents for each RE so that the public can understand the nature of the CSAC input, and respond in each final RE to public comments and peer reviewer input. If needed, EPA has the additional 6 month extension TSCA provided in which to take these measures, which I know is non-ideal, but these are the first ten and probably need more attention.

YOU NOTED THE CONCERN ASSOCIATED WITH DOUBLING THE PLANNED 60 DAY REVIEW TIMEFRAME, AND I AGREED TO THINK ABOUT SOME MIDDLE GROUND. HOW ABOUT SOMETHING LIKE THIS

- NO LESS THAN 90 DAYS
- STAGGER THE RELEASES SUCH THAT EPA WOULD RELEASE NO MORE THAN 3 RES AT A TIME AND WITH AT LEAST 30 DAYS BETWEEN RELEASES;
- EPA WILL CONSIDER REQUESTS FROM STAKEHOLDERS ASKING FOR AN EXTENSION AND MAY PROVIDE MORE TIME WHEN JUSTIFIED (E.G., TIME FOR ADDITIONAL ANALYSIS OR ACCESS TO MORE INFORMATION TO COMMENT EFFECTIVELY)

9. **Agricultural Worker Protection Standard (WPS) rule and the Certification of Pesticide Applicators (CPA) rule** – withdraw the proposed modifications to these rules (we believe you already offered to do this and that's basically what the Senate did in PRIA)

From RJ: The WPS and certified use and designated representative provision at OMB can be withdrawn and we can write back on that as well.

10. **Ethylene oxide** – no specific request here, but I'm aware of your ongoing dialogue with the Duckworth (and other) offices on this so I'm flagging it as a potential issue of interest.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 27, 2018 1:29 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

Attached is a new letter concerning the science rule and SAB.

We have a suggestion on PFAS which you may be more interested in, maybe not.

On the other list, here are items which we can write back to do:

We can place PMNs and associated documents on EPA's website but can't commit to within 15 days because the CBI comb through takes longer than that. We can commit to briefing the committee on what our plan is to place more PMN information on the website. We can commit to posting PMNs in the Federal Register every month. We can in fact commit to placing PMNs, the exemptions (TMEs), and notices of commencement in the Federal Register each month. We should be doing this anyway, but this is specifically what we can provide monthly:

- PMNs/SNUNs/MCANs: Case number, amendment number and version, date received, manufacturer (if not CBI), use (specific or generic if CBI), chemical substance (specific or generic name if CBI).
- TME information: Case, Submission type, Version, Received date, Manufacturer, Use, Chemical substance.
- NOC information: Case, Received date, Commencement date, If amendment and type of amendment (amendment to generic name, specific name, technical contact information, etc.), chemical substance.

We can also discuss a standard operating procedure we are probably 60 days out from finalizing on making public more material substantiating the not likely determinations. We can write to commit to brief the committee on that procedure when it's ready to be released. On the framework, we can provide a letter as well or briefing on how we are evaluating new chemicals and could commit to holding another public meeting on that. The framework was described in the document as a work in progress when issued.

I can understand the CBI claims and who that's important to in particular. We can commit to provide a report or letter or whatever the form on how we are handling CBI requirements and we can in the same response commit to reviewing CBI claims for chemicals in RE's. Are you simply talking about the first ten though? We will review the claims but we also will issue the RE's for the first ten in February too in a very similar fashion to PV29. The PFAS SNUR is referenced in the upcoming report as well so that is very doable to commit to.

The WPS and certified use and designated representative provision at OMB can be withdrawn and we can write back on that as well.

There may be some more substance to provide on these, but this is about as far as we are able to go on that list. I'm glad to talk about other things on that list, but I'm a best offer kind of a guy without too much effort to low ball and offer. I want to offer what I really think we can do, so that's what this represents.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Tuesday, November 27, 2018 11:45 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

Thanks! – want to send us what you are proposing back on PFAS and CH2O and SAB as edits to the same letter? On SAB, I think we are fine with the 8 reappointments, the text we sent you about career staff advice, and depending on the call tomorrow we may want to add some document production (forward-looking, a commitment to provide some materials in the future, not before confirmation or a hotline etc), but do not expect to have new requests on policy on the advisory committee front. Happy to work to resolve a final letter text today and then start socializing this to folks.

We are headed in to talk to TC right now but can make time this afternoon if you want to talk through logistics, Dunn, or anything else.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 27, 2018 11:37 AM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

We can accept that edit.

I am strengthening the PFAS answer presently. I need to get some answer concerning formaldehyde so that everyone understands the procedure moving forward, but we can agree to IRIS processing of the chemical.

Finally, I have responses to the list of items concerning Alex, however, we need to have a conversation about it and what happens to all this if Peter and Chad can't get confirmed.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Tuesday, November 27, 2018 9:59 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

The Wehrum letter committed to the future denial of a rulemaking petition before it actually did so, among other commitments made. But in lieu of the first suggested edit, how about this one, which is intended to mirror a commitment to a policy but not specify a rulemaking outcome in a different part of the letter?

Let us know when you want to talk to figure the rest (formaldehyde and PFAS in particular) out. Happy to also share what I'm thinking in terms of process and what we will do to pave the way assuming we get to a good place on the substance.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, November 26, 2018 9:04 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re: Peter Wright

We didn't propose doing credit for exporting ethanol.

Ryan Jackson
Chief of Staff
U.S. EPA
202-564-6999

On Nov 26, 2018, at 7:52 PM, Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov> wrote:

> Why not? You did exactly that for Wehrum/Ernst didn't you?
>
> Sent from my iPhone
>
> On Nov 26, 2018, at 7:42 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> > We cannot put in a letter that the final rule will say something in particular. We cannot accept that last edit.
> >
> > ---
> >
> > **From:** Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
> > **Sent:** Wednesday, November 21, 2018 3:21 PM
> > **To:** Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
> > **Cc:** Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
> > **Subject:** RE: Peter Wright

Ryan – thanks for the response. We are definitely making progress.

First of all, just to respond to the Goo/SAB/ERRDA issue, the Goo memo explicitly refers to the **pre**-proposal stage, so we continue to think you are out of compliance with ERRDA. There is case law on this point that I imagine your lawyers are well aware of. I think the additions you made to the letter regarding SAB input and the need to re-propose may render this a moot point. Here is the rest (minus FARM)-

1. **Secret science** – added a very minor suggested tweak, and continue to wonder about the RIA. This rule will have impacts on other rules EPA promulgates, so it isn't entirely fair to say that the RIA isn't needed because this rule is only about EPA administration costs. I'd just ask that you think about that one again. But this letter is coming along and we appreciate it.

2. **Formaldehyde** – nothing new here, just waiting for you to get back to us on the pending request.

3. **SAB** – Re-appointing the 8 is very helpful - thanks. Happy to talk to the person you recommend we talk to as well, especially after you and he reviews what I'm including below.

   We want to talk further about process, but are willing to drop the proposal that you abandon the EPA grants conflict of interests thing (which we hate, so abandoning it is an accommodation on our part). When we talk about process, it isn't just about the EPA grants conflict of interest. It's about how recommendations are made for who to appoint. You have 7 SAB members that you're in the process of re-appointing, and a bunch of pending nominees for these slots. Historically, as nominees were being considered, EPA career staff would look at who was leaving and what needs SAB had in the coming year. So, for example, if all 7 departing people were industry people, one would expect the career staff to recognize that the SAB balance would argue for the appointment of new industry people and they would prepare options for new nominees that would be mostly or all industry people. If two of the 7 departing people were the SAB's only epidemiologists, and career staff knew that in the next year the SAB had a ton of epidemiology to do, they would prepare options for new nominees that would ensure the SAB retained its epidemiology capacity. Career staff would send decision-makers some document(s) that described who was leaving, what capacity was being lost, and recommend options for new appointees that addressed concerns that SAB retain diverse and qualified members and maintain core capacity. This Administration seems to have abandoned that process at least for some advisory committees. We'd like you to return to it. Note that decision-makers can choose not to accept the career staff recommendations, but those decision-makers should at least have the benefit of career staff input.

   Perhaps you could also include in a commitment letter on this that "EPA will follow its past practice of obtaining information and recommendations from EPA's career staff to ensure that new appointees to EPA's scientific advisory committees are independent, well-qualified, free of conflicts of interest, come from diverse technical and professional backgrounds and possess expertise in areas that the agency anticipates to be relevant in planned or anticipated reviews."

4. **PFAS** – nothing new here, just let us know what that language looks like

5. **TA** – thanks – had a brief call with the staff and sent some follow-up questions in writing. I'd really appreciate fast turnaround, and I tried hard to make them easy questions.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 20, 2018 7:25 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

I think this email is the latest among us. Now, the draft science policy letter is attached. It received the highest level of review. To follow up on the SAB issues, Tom Brennan is the director of the SAB and has been involved in the last two rounds of selections as director. Prior to that, Tom was the deputy for Zarba. He can answer any questions regarding conflict policy, and I can place him on the phone next week.

From: Jackson, Ryan
Sent: Monday, November 19, 2018 7:20 PM
To: 'Freedhoff, Michal (EPW)' <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

So just a couple of points of initial feedback. The draft science policy letter is being reviewed presently. However, for ERDDA compliance we follow the attached.

On the SAB, eight members 3 year terms expired October 1, 2018 and are eligible for reappointment. Those members are Dr. Ken Ramos (Medicine Toxicology) who chairs the Chemical Assessment Advisory Committee, Dr. Jay Turner (Air Quality Engineer) who chairs the Scientific and Technical Achievement Awards Panel, Dr. Sue Marty (Toxicology), Dr. Susan Felter (Toxicology), Dr. Tara Sabo Atwood (Ecotoxicology), Dr. Kenneth Portier (Statistics), Dr. Thomas Parkerton (Ecotoxicology), Dr. Robert Mace (Hydrology). We plan to reappoint them all. Also, on not following our rules, I really have no idea what you are talking about. Other than receiving grants, the conflicts of interest rules are the same. We have given board members notice now in two application processes.

Finally, page 11 of the opinion says that regardless of a proposed or final rule addressing EPCRA that reporting from animal waste is not required under EPCRA due to the FARM Act. That's why I say it caught our attention. In this case, the FARM Act was not enacted at the time. Administrator Pruitt issued guidance relying on the agricultural exemption from reporting. That is and would be a very broad exemption (which is also discussed in the case). The recent proposal we issued doesn't rely on the agricultural exemption. We believe a rulemaking based on that is too broad. We wanted to simply address animal waste emissions. Any kind of tank spill, other emissions, discharge to

water, etc are all reportable under EPCRA. An agricultural exemption for that would be inappropriate and probably not supportable. Additionally, as I mentioned we are taking down the agricultural exemption guidance anyway as too broad. That is a policy win for you too.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Monday, November 19, 2018 2:32 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Thanks Ryan

We appreciate the constructive engagement, and have a few thoughts to share in response.

First of all, on McIntosh – we are working to resolve the hold and will let you know if we run into problems. We ran that hotline without doing proactive member outreach because we had socialized it in advance with our LAs, and McIntosh is not a high-profile nominee. The hold is from an off-EPW Member we could not have anticipated. Hopefully it will be fine.

On Wright, we know there is a lot of on and off Committee interest in him, as well as widespread environmental NGO opposition to him. Assuming we get to a good resolution with you, we'll need to treat a potential hotline on him differently than we did for McIntosh, and spend more time proactively describing and selling the package. We would be working in good faith towards a voice vote and would actively help resolve problems if they arise.

Now to your points below:

1. **Secret science** – will look forward to reviewing the next draft. Just as a matter of interest and by way of example, unfortunately, lots of workers were exposed to PCBs and asbestos in the 1950s. It isn't exactly an experiment anyone wants to repeat, but is a way to explain the concern we have about older studies.
2. **Formaldehyde** – The problem with a TSCA-RE-only approach is that OW, OAR and/or OLEM can use an IRIS RA to inform future efforts in their programs because IRIS gets you a toxicity evaluation, including a reference dose/concentration. A TSCA RE doesn't get you that (which doesn't mean a TSCA RE is not useful – just saying they are different products that are used for different purposes). Appreciate your receptivity here. As I understand the normal 7-step IRIS process, it would be a 30-day EPA review, then a 60-day intra-agency review, then a 60-90 day public review, then back to NAS, and could thus in theory be completed in just over a year. What we want is for the formaldehyde IRIS assessment to be immediately freed up to follow the IRIS process/timelines that are normal. So a letter saying that, and committing to inform TC if any step takes longer than normal, could be one way to go? We can review text in advance as with other efforts.

3. **SAB** – Happy to look at your list. It isn't just the conflict of interest part of the process that we have issue with, but also the manner in which nominees are selected for qualifications and balance that is not being followed
4. **PFAS** – let us know what that language looks like
5. **TA** – thanks
6. **FARM court case** – I am not the subject matter expert on this, but I think you may be making our point for us. That court decision relied on EPA guidance that was not an accurate description of the FARM Act , which is why we were so unhappy with the way EPA was describing the FARM Act.

Thanks again
Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Sunday, November 18, 2018 10:16 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

I can understand initial holds because we are EPA. However, the general perspective is that we plan to answer Republican and Democratic letters. We have, and we will and more. If there's something a member would like, it may take time but we will try to comply. In other words, we want to cooperate with them, but I need to have program directors here to do that.

There's a lot of people who work for Ford. Saying that Chad is responsible for all things Ford is the same as the NYT trying to say that Peter is responsible for all things Dow which also was successfully shot down in that article by Region 5 attorneys and staff who worked with Peter while at Dow. Chad was the director of global environmental policy for Ford when this situation was uncovered meaning he was working on Ford issues in Europe and South America. He never worked on this issue. If he had though, it would have been a good thing for Ford and the community because he would have solved it.

On the letter, we can accept most the suggestions.

- We agree to incorporate sending the proposal to the SAB to review. It would be helpful. We don't believe we have an ERDDA problem. EPA complies with ERDDA outlined in the Goo Memo. Unfortunately, I'm at home so I will send in the morning.
- We can incorporate your changes on retroactivity. The text we provided we believed not only said that but provided the exact language in the proposed rule to illustrate that.
- We can incorporate your changes on PII. However, I don't think it's good for us to rely on a study from the 1950s.
- We can incorporate your changes on the top of the second page on providing legal authority, however, I'm not sure how we will conduct an RIA on internal agency procedures. We don't have an obligation to do that, and I'm not sure

how to assess costs within EPA. Additionally, we don't imply. We either say it or not.

- We can incorporate your changes concerning compliance with other laws, although I don't know if we will use those cites and I would have to check the cites. There's one reference that the Clean Air Act requires agencies to do something instead of simply referencing EPA, but I would imagine that's subject to come clean up.

I can send a final draft tomorrow.

On formaldehyde, if you want an IRIS inter-agency process to happen on this which we have no control over, I can agree to that but I need to check with others here. Although Lautenberg allows 3.5 years it doesn't have to take that long. We can conduct a very public risk evaluation for the conditions of use which includes all foreseeable uses in the judgment of the Administrator so yes we can evaluate for all uses. The result of that risk evaluation is regulation. The result of an IRIS review is a nice binder for the shelf which is part of the problem with that program. Additionally, this IRIS study on formaldehyde is something which has been ongoing for about 10 years and has until recently been criticized by the NAS and Congressional appropriations report language for its prior iterations. So yes, let me get back with you as soon as I'm able with probably an acceptance of this one too. We don't believe this is the way to approach a review of formaldehyde.

On the SAB, we are applying the same conflicts of interest rules we have always applied with the exception that if you are receiving a grant from EPA you unable to serve on the SAB. However, the specific offer was that there are 8 SAB members which have completed their first term. We propose reappointing all 8. I can provide their names tomorrow.

On PFAS, I need to check if we can lift the current draft language to send, but if we can we will accept this.

Finally, we can make a couple staff available to talk about off cycle and air conditioning credits for an hour? Let me know when works to do that. Also, I'm slow on getting a very recent federal district court case to you. It's in the 9th Circuit so maybe it doesn't matter on appeal, but the 9th Circuit is a big place. Regardless, we noticed it.

However, THE question I'm going to get when I take all this back is what do we get for doing this especially with word of a hold on Chad especially because we do have a problem with some of these requests. We need to have a telephone discussion of what this does.

Thanks.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Friday, November 16, 2018 11:28 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Ryan

Thanks for this response and for talking through some of the related issues with MF yesterday. Before sharing our response to the Wright-related matters, I wanted to let you know that we are trying to address the hold on Chad McIntosh, which as I mentioned last night, relates to this, and the hold was not lodged by a MI Senator. The fact that we have a hold on McIntosh is illustrative of the challenges EPA faces when asking to confirm any nominees through UC. We will keep you posted. We understand that there is also a blanket hold on ALL nominees for all agencies, but there is nothing we can do on that and assume it will work itself out before sine die. In the meantime, here is our response to the Wright-related matters. As always, we are happy to discuss.

1. **Secret science** Thank you for your effort to memorialize in part the conversations we have had with you, and that TC and AW have had, on this matter. We know your draft letter was a good-faith effort. However, there were some inaccuracies and misunderstandings associated with your draft. Attached is our redline, which you should read on a PC because we tried to explain in comment boxes the reasons for our suggested edits.

2. **Formaldehyde** It does not work for us to move this request into a TSCA RE. That would add 3.5 additional years to an already years-long expensive effort, would not result in a useful product for the non-OCSPP program offices. Moreover, even if you DID consider all conditions of use, you would violate your own (illegal) TSCA rules, and more years-worth of litigation would ensue. What we want is for the IRIS risk assessment for formaldehyde to continue to be processed using the normal IRIS procedures (which I believe were actually written by Nancy Beck when she was at OMB), without additional delay. I do not believe there is middle ground on this request, but if you feel creative, let us know.

3. **Science panels** What we are looking for is a return to your normal procedures (including for how conflicts of interest are assessed) for appointments and reappointments. These procedures are documented in writing at EPA, but EPA is not following them. I understand you mentioned the potential for a compromise involving some specific re-appointments. I would be interested in additional specificity (names, what panel, etc) on that so we can better respond to that offer.

4. **PFAS/CERCLA** We are glad that this is within the scope of your PFAS action plan, and know that it would need to be undertaken by rulemaking and thus could not be completed before the end of the Congress. Could AW make a written commitment to Senator Carper that this will occur and provide a rough timeframe for the NPRM and final agency action? We can edit draft letter language quickly.

5. **FARM** We understand that our staff and yours will engage substantively in coming days/weeks. As part of the conversation RJ and MF had yesterday, she also flagged more systemic concerns about the manner in which the agency engages with us. To that end, I've flagged for both of you, repeatedly, a TA request on cars I submitted about 3 weeks ago that Mandy has told EPA career staff they do not have permission to undertake. I'd like that call to occur early next week. Note that I do not consider this a 'give' on your part – I consider the

provision of TA to be the normal manner in which EPA has historically done its job.

Thanks very much

Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, October 22, 2018 11:29 AM
To: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: Peter Wright

To provide a specific update on this and overall update, we are updating and clarifying text for this answer. I'm anticipating getting some final language or simply thumbs up from our program office shortly. I also will provide an update to the EPCRA 304 site on the cites used.

On the accidental releases terminology, our program offices chose that term to distinguish a one-time, inadvertent release from a "continuous release" that "occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes." 40 CFR 302.8(b). There's different reporting requirements under CERCLA 103(f)(2) and EPCRA 304 for continuous releases versus a temporary or accidental or one time one. That's the distinction they report to me they are attempting to make.

On science transparency rules, you may have noticed that the unified regulatory agenda places it further out because of the anticipated time involved on this. The attached draft is an example of what we could provide to answer some specific and overall questions from the Senate about our timing, thoughts, and any path forward.

The formaldehyde study might have a pathway ahead which would be better than sending the study through intra-agency review, but I hope to have an answer on that soon.

On the science boards, there's a track record of board members leaving or not getting reappointed. However, it's not easy to determine why. Maybe they didn't apply or maybe they did. We have reappointed some and accepted new applicants in other cases and can provide that information. We can also provide the nominating individuals too. Some self nominate, but others come from other sources if that's of interest.

Finally, on CERCLA eligibility, we are in the process of putting together our PFAS strategy based on the 6 townhalls and record which closed 3 weeks ago. This is within that process. But also, this will require rulemaking which is not entirely within our control and for this will take a while. Something to get this request narrowed would be worth talking about, I think.

From: Repko, Mary Frances (EPW) [mailto:mary_frances_repko@epw.senate.gov]
Sent: Friday, October 5, 2018 5:47 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE:

Ryan,

We are glad you took down the guidance link from the website, and that is helpful. But there are a few more issues with what the agency's website says now that the guidance is down.

The site says:

EPCRA Reporting Requirements

Do I need to submit an EPCRA report?
No. Based on the criteria for EPCRA section 304 release reporting, air emissions from animal waste (including decomposing animal waste) at a farm do not need to be reported under EPCRA.
Furthermore, the statute excludes farms that only use substances in "routine agricultural operations" from reporting releases of hazardous substances under EPCRA section 304. For more information, please see: EPCRA Q&A.

- While you don't have a link to the guidance doc, the website refers to it by citing the specific criteria under 304. It would be better if the website language were more simple:

  No. The EPA has interpreted the "routine agricultural operations" exemption under EPCRA section 304 to not require reporting from farms. For more information, please see: EPCRA Q&A.

- Also, the website's link to EPCRA 304 talks about accidental releases. That's not a word used in the statute, and certainly EPCRA reporting isn't limited to just accidental releases, but rather to any release that isn't federally permitted and that doesn't fall into one of the exemption categories in the statute.

- Finally, you need to update the links to the CFR on the EPCRA 304 page, since what is linked to is now out of date, having been modified by the CFR changes made to reflect the recent vacature order by the DC Circuit of the 2008 rule.

Hope that's clear,
MF

-----Original Message-----
From: Freedhoff, Michal (EPW)
Sent: Wednesday, October 3, 2018 8:03 PM

To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re:

Thanks!

Sent from my iPhone

> On Oct 3, 2018, at 6:40 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> We'll have the changes to the FARM Act website posted within the next 30 minutes.
>
>
>
>
>
>
>
> Ryan Jackson
> Chief of Staff
> U.S. EPA
> 202-564-6999
>

Message

From: Norman Anderson [norman@cg-la.com]
Sent: 12/6/2018 4:06:01 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: Ryan Jackson

Ryan,

Thank you - and apologies for the delay in responding, but I was traveling overseas this week and got discombobulated.

As it happens, I just had breakfast with the CEO of the Texas High Speed Rail project. His story is horrific. They have already spent $48 million on regulatory and permitting, and because of federal government approval delays this looks to be headed toward $100 million, which would kill the project.

He loves the EPA - this is in the bowels of DOT. I wanted to bring this to your attention, in case Administrator Wheeler wants to raise this with President Trump. In addition, on the off chance that you or the Administrator have time today, the CEO is available at 1pm. He could explain this to you in 15 minutes.

Best, Norman

On Mon, Dec 3, 2018 at 5:42 PM Jackson, Ryan <jackson.ryan@epa.gov> wrote:

> It was a pleasure to meet and talk with you the other day. I wanted to provide you my information.
>
> Thank you,
>
> Ryan.
>
> Ryan Jackson
>
> Chief of Staff
>
> U.S. Environmental Protection Agency
>
> (202) 564-6999

--

Norman F. Anderson
Chairman & CEO
CG/LA Infrastructure, Inc.
P: 202.776.0990
E: norman@cg-la.com
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Message

From: John Blount [john.blount@ervinhillstrategy.com]
Sent: 12/18/2018 3:07:29 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Follow up

I am writing to thank you for the meeting with Robert Finnegan of Tethys. Just checking in to see where EPA is on their marketing petition for exemption from the RFS obligation as discussed.

Thank you

John

John Blount
SVP, Global Government Affairs
Ervin | Hill Strategy
410 First Street, SE
Suite 300
Washington, D.C. 20003
Ex. 6

Message

From: Ex. 6
Sent: 12/10/2018 4:31:13 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Office of Research and Development
Attachments: Bio 2018.pdf

Dear Mr. Jackson,

I met last week with Richard Yamada, who suggested I reach out to you in regards to the position of Administrative Assistant for the Office of Research and Development at the EPA. Ex. 6

Ex. 6

I have an extensive involvement with science and environmental issues. I have worked on and passed a number of pieces of environmental legislation as a state representative in areas ranging from low level radiation to stormwater and fracking. Earlier this year I was the go to person for Congressman Roskam when the ethylene oxide issue at the Sterigenics plant went public. Last week I presented on science-based decision making at the Council of State Governments national conference in Kentucky.

My resume is attached and I look forward to hearing from you. I can also be reached on my cell phone Ex. 6 Ex. 6

Sincerely,

Ex. 6

Ex. 6

Ex. 6

Message

From: Grace White [grace.white@aticup.com]
Sent: 12/7/2018 11:02:47 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: RE: CSCMP EDGE 2018 - Attendees Info

Hi,

I hope you are the right person to discuss about **CSCMP EDGE 2018 - Council of Supply Chain Management Professionals** Attendees Email info?

CSCMP EDGE 2018 - Council of Supply Chain Management Professionals of 1,500+ attendees with complete details and verified e-addresses.

List will be provided for unlimited usage.

Interested? Email me back, I'd love to provide more information on this.

Thank you.

Regards,

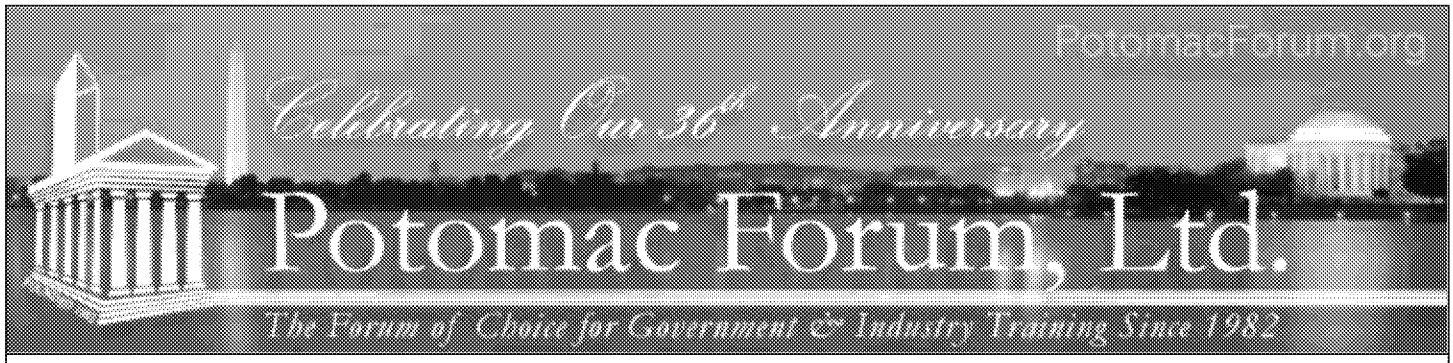
Grace White

Demand Generation Executive.

If you do not wish to receive future emails from us, please reply as "opt-out"

Message

From: Engaging Supervising & Managing the New Government Workforce [NewGovWorkplace@PotomacForumEvent.org]
Sent: 11/21/2018 3:31:39 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] Register - Managing the New Gov Workforce & Improve Engagement



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Director, Strategic Issues Team
GAO

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Mika Cross
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Thevee Gray
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Former Director of Customer Service and
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2800 Eisenhower Avenue , Alexandria , Virginia, 22314 , USA

Message

From: Jeff Harris [jeff.harris@duke.edu]
Sent: 11/29/2018 12:59:33 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Staff Briefing - Securing America's Energy Infrastructure

Staff Briefing - Securing America's Energy Infrastructure

Dear Ryan,

As a federal employee, we want to invite you to this exclusive conversation on America's energy infrastructure. It is a unique chance to ask questions of and network with experts in their field in a private setting.

Will you be able to join us?

Jeff
Director, Duke in DC

Beyond Talking Points: Energy Security

Duke in DC invites you to learn more about America's energy infrastructure. Have your questions answered about how the federal government currently addresses our most pressing challenges and how to go forward.

RSVP

Monday, December 3, 2018
8:45am - 12:00pm

Jennifer Chen
Senior Counsel, Federal Energy Policy | Duke University's Nicholas School for Environmental Policy Solutions

Aaron Cutler
Partner, Hogan Lovells | Fmr. Senior Policy Adviser/Counsel, House Committee on Natural Resources

Craig Glazer
Vice President, Federal Government Policy | PJM Interconnection

Michael Goggin
Vice President | Grid Strategies

Kate Konschnik
Director, Climate and Energy Program | Duke University's Nicholas School for Environmental Policy Solutions

Barry Lawson

Senior Director, Regulatory Affairs | National Rural Electric Cooperative Association

Jeanette Pablo

General Counsel, Senior Associate | Energy Futures Initiative

Clifford Sikora

Partner | Troutman Sanders

The security of our energy production and storage in the United States has taken center stage in recent months, with the Trump Administration invoking national security concerns to save uneconomic coal and nuclear plants and the news reports threats to the energy grid from foreign hackers. With a rapidly changing power sector and growing threats of cyber warfare and extreme weather loom, vulnerabilities in our energy infrastructure must be accurately identified and addressed. Congress should work with Federal agencies to oversee methods of ensuring energy security that keeps pace with threats and harnesses the capabilities of newer grid technologies and resources.

Join Duke in DC for Beyond Talking Points*, a quarterly seminar series exposing government officials from Capitol Hill and the administration to in-depth discussions on critical issues facing America and the world.*

Breakfast will be provided.

1201 Pennsylvania Ave.
Suite 500
Washington, DC 20004

If you have questions or concerns, feel free to reach out to the Director of Duke in DC Jeff Harris at jeff.harris@duke.edu.

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Message

From: Joanna Slaney [jslaney@edf.org]
Sent: 12/7/2018 3:36:32 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Phone call on methylene chloride proposed rule
Attachments: ATT00001.txt

Hi Ryan,

Can we find a time for a brief call on the methylene chloride proposed rule? I'm available today, if you have any time.

Thanks,
Joanna

Joanna Slaney
Legislative Director, Health

Environmental Defense Fund
1875 Connecticut Ave, NW, Suite 600
Washington, D.C. 20009
T 202-572-3509
Ex. 6
jslaney@edf.org

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Message

From: Clarke, Carlisle (Appropriations) [Carlisle_Clarke@appro.senate.gov]
Sent: 12/4/2018 3:46:29 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: FW: Reception Invitation for Chip Morgan
Attachments: ATT00001.txt

Hey man,

You gonna be able to join us next Tuesday? Gonna be a good time

Carlisle

From: Chip Morgan Reception <morganreceptionreply@gmail.com>
Sent: Thursday, November 29, 2018 5:31 PM
To: morganreceptionreply@gmail.com
Subject: Reception Invitation for Chip Morgan

Attached is an invitation to attend a reception in honor of Chip Morgan of Delta Council to be held Tuesday, December 11, 2018, from 5:00 pm to 7:00 pm in the Kennedy Caucus Room of the Russell Senate Office Building.
Please indicate your attendance by replying to this email address, MorganReceptionReply@gmail.com.

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Message

From: Luke Tomanelli [luke.tomanelli@bayer.com]
Sent: 11/29/2018 7:50:38 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Bayer Announcement
Attachments: Press Release_english.docx

Hi Ryan,

I wanted to follow up with one more item, and that is the attached press release announcing a number of significant restructuring and efficiency measures that Bayer is taking around the world. As always, we are happy to answer any questions that you may have.

Best regards,

Luke Tomanelli
Dep Dir Federal Relations & Policy

Bayer: Science For A Better Life

Bayer Corporation
Bayer Corp-CGR-USGR
801 Pennsylvania Avenue, NW
Suite 745
20004 Washington D.C., United States

Office: 202-756-3782
Ex. 6
E-mail: luke.tomanelli@bayer.com

Message

From: Environmental Law360 [news-q2@law360.com]
Sent: 12/6/2018 9:06:30 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] Gov't Urges High Court To Rebuff Osage Wind Farm Petition

ENVIRONMENTAL.

The Data-Driven Lawyer

Meet the 2018 award winners and get insights into their innovative practices.

Thursday, December 6, 2018

TOP NEWS

Gov't Urges High Court To Rebuff Osage Wind Farm Petition

The solicitor general has urged the U.S. Supreme Court to deny a bid by Oklahoma wind farm developers seeking to overturn a Tenth Circuit decision that said a mineral lease from the Osage Nation and federal approval were required for the project, stating that the tribe had a right to intervene and appeal because they would have been bound by the district court's adverse judgment. Read full article »

Wyoming Looks To Take Yellowstone Grizzly Fight To 9th Circ.

Wyoming will turn to the Ninth Circuit to challenge a September ruling that threw out the U.S. Fish and Wildlife Service's decision to remove Endangered Species Act protections for the Yellowstone population of grizzly bear, the state told a Montana federal court Wednesday. Read full article »

NY, NJ Want In On EPA Smog Inaction Suits At DC Circ.

New Jersey, New York state and New York City have asked the D.C. Circuit for permission to intervene in litigation over the U.S. Environmental Protection Agency's refusal to grant petitions by fellow East Coast states seeking to reduce air pollution from inland sources. Read full article »

PG&E Caused Worst Fire In Calif. History, Suit Says

Pacific Gas & Electric on Wednesday was hit with a proposed class action in California state court alleging that it knew its electrical infrastructure was old and unsafe and that it caused the deadliest and most destructive wildfire in the Golden State's history. Read full article »

Texas Panel Lets Hurricane Harvey 'Takings' Suit Proceed

A Texas appellate court has partially sided with Houston-area homeowners suing the San Jacinto River Authority over damage to their homes in the

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wake of Hurricane Harvey, holding that their "takings" claims can proceed, but other claims must be refiled in a county court at law rather than a state district court. Read full article »

SERIES SPOTLIGHT

Data-Driven Lawyer: Kilpatrick Townsend's Kate Gaudry

Kilpatrick Townsend's Kate Gaudry has used data analytics to supercharge her patent prosecution practice, uncover winning strategies for portfolio management and expose a secretive U.S. Patent and Trademark Office program, earning her a spot on our 2018 list of Data-Driven Lawyers. Read full article »

ENFORCEMENT

EPA Dings Calif. For Years-Late Air Quality Plan

The U.S. Environmental Protection Agency admonished California on Wednesday for the continued delay of years-overdue plans to clean up the air in the San Joaquin Valley, one of the nation's smoggiest regions. Read full article »

Gov't, Ill. Ask For Approval On Phillips 66 Refinery Deal

The federal government and Illinois on Tuesday asked a federal court to sign off on a consent decree they proposed with Phillips 66 and WRB Refining LP that requires emissions reductions at the Wood River Refinery, addresses lead paint issues and assesses a $475,000 penalty. Read full article »

LITIGATION

Landowner Denied Bid For Axed NJ Pollution Cleanup Grant

A New Jersey developer's application for an environmental cleanup grant wasn't complete enough to be grandfathered in after the state Legislature eliminated funding for the program, a New Jersey appeals court ruled on Wednesday. Read full article »

Argentina Drags Peru To WTO Over Biodiesel Tariffs

Argentina brought a new World Trade Organization case against Peru on Wednesday, alleging the country violated a number of international rules when it applied remedial tariffs on Argentina's biodiesel imports in 2016. Read full article »

Cleanup Probe Triggers Defense Coverage, City Tells 9th Circ.

A Washington city urged the Ninth Circuit Wednesday to rule that the expenses it has incurred to investigate pollution at a landfill are defense costs under its insurance policies with Travelers and are therefore not subject to policy limits, arguing that a lower court erroneously limited the city's potential coverage by classifying the expenses as damages. Read full article »

Motorcoach Co. Must Face Fraud Suit Over Bus Startup

A California federal judge shot down Bus and Coach America Corp.'s attempt to escape securities fraud claims that its executives duped investors into buying stock in a fledgling company dealing in electric-powered buses, ruling the startup need not be a party in the case for it to proceed. Read full article »

EXPERT ANALYSIS

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COMPANIES

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Burberry Group
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California State Teachers Employees' Retirement System
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Coach Am Group Holdings Corp.
Credit Suisse Group AG
DTE Energy Co.
Deloitte Touche
Devon Energy Corp.
Dominion Energy Inc.
Dow Chemical Co.
Enel SpA
FirstEnergy Corp.

A Closer Look At New Calif. Pension Fund Climate Law

Landmark California legislation going into effect in January requires the two largest pension funds in the U.S. to publicly report on their climate-related financial risks, which should result in more widespread adoption of financial disclosure recommendations from the Financial Stability Board, say attorneys with CKR Law LLP. Read full article »

A Comparison Of This Year's Carbon Tax Proposals: Part 1

Four carbon pricing policy plans garnered attention in 2018, including the first bipartisan federal carbon tax proposal in eight years. In the first installment of this two-part series assessing the potential impacts on emissions, energy markets and the economy, Noah Kaufman of Columbia University's Center for Global Energy Policy looks at the similarities and differences. Read full article »

LEGAL INDUSTRY

Weil, Covington Unveil Associate Bonuses

Weil Gotshal & Manges LLP and Covington & Burling LLP have both announced their end-of-year bonus scales for associates, according to Above The Law. Read full article »

Debevoise Rolls Out New Associate Feedback Program

Debevoise & Plimpton LLP has launched a new informal feedback program designed to give evaluations and training to young associates in the U.S. on an ongoing basis, outside of the context of a more traditional annual review, the firm announced Tuesday. Read full article »

Robert Shapiro Faces Deposition Over LegalZoom Claims

Courtroom star Robert Shapiro will have to answer deposition questions about ads in which he claimed to have “created” LegalZoom.com, a San Francisco arbiter said Tuesday. Read full article »

Kerr & Wagstaffe Closes As Rent Rises, Attys Form New Firms

The partners of San Francisco litigation boutique Kerr & Wagstaffe LLP have shuttered the law firm after 20 years in business as its rent was set to double, and two new firms — one with four partners and no associates — will form in its wake. Read full article »

Sen.'s Bid To Protect Mueller Again Delays Vote On Judges

Once again, the Senate Judiciary Committee has canceled a Thursday meeting and delayed votes on Third, Fourth, Sixth and Ninth Circuit judicial nominees as a standoff with Sen. Jeff Flake, R-Ariz., over an unrelated bill to protect the Mueller investigation continues. Read full article »

Progressives Aim To Pack The Courts Post-Kavanaugh

A group of progressive activists gathered Wednesday evening to discuss how to reform the Supreme Court now that conservatives have shored up their majority with two new appointments, including bold strategies such as court-packing and impeaching Justice Brett Kavanaugh if and when Democrats control Congress and the White House. Read full article »

Law Firm Leaders: Arnold & Porter's Richard Alexander

Richard Alexander took the reins as chairman of Arnold & Porter in 2015 and has since steered the law firm through its merger with Kaye Scholer, which

Golden State Warriors
HSBC Holdings PLC
Kinder Morgan Inc.
LegalZoom.com Inc.
LexisNexis Group
NERA Economic Consulting
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PG&E Corporation
PPL Corporation
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Southwestern Energy Co.
The Travelers Companies Inc.
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GOVERNMENT AGENCIES

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California Air Resources Board
California Department of Insurance
California Public Employees' Retirement System
California Public Utilities Commission
Council on Environmental Quality
Equal Employment Opportunity Commission
Financial Stability Board
Fish and Wildlife Service
National Aeronautics and Space Administration
New Jersey Department of Environmental Protection
New Jersey Supreme Court
New York Attorney General's Office
Securities and Exchange Commission
U.S. Attorney's Office
U.S. Department of Justice
U.S. Department of the Interior
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increased the number of attorneys under the leader's watch from 700 to approximately 950. Read full article »

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Message

From: Luke Tomanelli [luke.tomanelli@bayer.com]
Sent: 11/29/2018 7:41:24 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Willis, Sharnett [Willis.Sharnett@epa.gov]
Subject: RE: Meeting Request for Duane Simpson

Thank you Ryan!

Best regards,

Luke Tomanelli
Dep Dir Federal Relations & Policy
_____

Bayer: Science For A Better Life

Bayer Corporation
Bayer Corp-CGR-USGR
801 Pennsylvania Avenue, NW
Suite 745
20004 Washington D.C., United States

Office: 202-756-3782
Ex. 6
E-mail: luke.tomanelli@bayer.com

-----Original Message-----
From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Thursday, November 29, 2018 9:06 AM
To: Luke Tomanelli
Cc: Willis, Sharnett
Subject: Re: Meeting Request for Duane Simpson

Yeah. We'll find a good time.

Ryan Jackson
Chief of Staff
U.S. EPA
202-564-6999

> On Nov 28, 2018, at 8:12 PM, Luke Tomanelli <luke.tomanelli@bayer.com> wrote:
>
> Hi Ryan,
>
> I hope you are well. Duane Simpson - my boss and the new Vice President of Industry and Government Affairs for Bayer Crop Science - and I were hoping to get a few minutes of your time over the next few weeks so that Duane can introduce himself to you and have a brief introductory chat.
>
> Duane previously served as Monsanto's head of state government affairs and is transitioning into his new role now that Bayer's acquisition of Monsanto is complete.
>
> Duane is still based in St. Louis while he transitions to Washington, but he will be in town on the following days and was wondering if you might be available on the afternoon of December 4, any time December 5, the morning of December 6, the afternoon of December 10, or all day on December 11.
>
> Thank you for considering this request. I hope you are enjoying your December and that you have a relaxing holiday break coming up.
>
> Sincerely,
>
> Luke Tomanelli
> Deputy Director - Federal Affairs and Policy
> Bayer U.S.

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 11/27/2018 10:08:56 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]; Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Subject: RE: re - Dunn

OK here is a bit more by way of substantive response

I would like to discuss these additional yellow highlighted items from the original Dunn list.

I tried to put your response in red text below the item so we could keep track of where we are on all of them. I have added to this in CAPS.

Green highlight means I think we are resolved and just need to figure out words for a letter – thank you.

Also though I have not highlighted the ethylene oxide item, I did receive another note about that from Senator Duckworth's staff today and just flag it for you again without specificity.

1. **PMN transparency measures** — EPA has reduced the information that is available to the public as it evaluates PMNs. We would like this remedied by 1/15/19, and would like the following materials be made available:
   - Each PMN and its attachments, all amendments, correspondence with EPA, and other supporting documentation in an electronic docket within 15 days of receipt of the PMN; and publication of the FR notice of receipt required under 5(d) within 30 days of PMN receipt.
   - EPA's underlying risk assessment documents that support each "not likely to present an unreasonable risk" determination EPA makes on PMNs, at the same time that the determination is communicated to the PMN submitter and posted on EPA's website.
   - EPA career staff's "interim recommendation" on each PMN substance undergoing review.

We can place PMNs and associated documents ~~on EPA's website~~ IN ELECTRONIC DOCKETS ON REGULATIONS.GOV [YOUR REGULATIONS REQUIRE THIS] ~~but can't commit to~~ within 15 days ~~because the CBI comb through takes longer than that~~ [WHY IS EPA DOING THE CBI COMB WHEN THE APPLICANTS ARE SUPPOSED TO PROVIDE YOU WITH PUBLICLY RELEASABLE VERSIONS OF THE DOCUMENTS THEY SEND YOU? WHY NOT JUST ENFORCE YOUR OWN REQUIREMENTS?]. We can commit to briefing the committee on what our plan is to place more PMN information on the website. We can commit to posting PMNs in the Federal Register every month. We can in fact commit to placing PMNs, the exemptions (TMEs), and notices of commencement in the Federal Register each month. We should be doing this anyway, but this is specifically what we can provide monthly [NOTE THAT YOU ARE CURRENTLY 3-6 MONTHS BEHND IN POSTING ANYTHING. GIVEN THE 90 DAY DEADLINE FOR PMN REVIEW, THE DEADLINES HIGHLIGHTED ABOVE FOR PUBLIC POSTING REALLY NEED TO BE THE DEADLINES]:

- PMNs/SNUNs/MCANs: Case number, amendment number and version, date received, manufacturer (if not CBI), use (specific or generic if CBI), chemical substance (specific AND CAS NUMBER IF NOT CBI, or generic name if CBI).
- TME information: Case, Submission type, Version, Received date, Manufacturer, Use, Chemical substance.
- NOC information: Case, Received date, Commencement date, If amendment and type of amendment (amendment to generic name, specific name, technical contact information, etc.), chemical substance.
- EPA'S UNDERLYING RISK ASSESSMENT DOCUMENTS THAT SUPPORT EACH "NOT LIKELY TO PRESENT AN UNREASONABLE RISK" DETERMINATION EPA MAKES ON PMNS, AT THE SAME TIME THAT THE DETERMINATION IS COMMUNICATED TO THE PMN SUBMITTER AND POSTED ON EPA'S WEBSITE.
- EPA CAREER STAFF'S "INTERIM RECOMMENDATION" ON EACH PMN SUBSTANCE UNDERGOING REVIEW.

2. **Section 5 framework:** EPA released a framework on how it would implement section 5 about a year ago, and held a public meeting and received written comments on it. While EPA appears to have subsequently made changes to the manner in which it is evaluating new chemicals, it has never modified or re-published this framework document to reflect those changes. We would like EPA to commit to publicly release a revised section 5 framework document by ~~1/15/19~~ 1/31/19 [THIS GIVES YOU 60 DAYS PER BELOW] that includes EPA's legal justifications for it, and take additional public comments on it.

From RJ:
We can also discuss a standard operating procedure we are probably 60 days out from finalizing on making public more material substantiating the not likely determinations. We can write to commit to brief the committee on that procedure when it's ready to be released. On the framework, we can provide a letter as well or briefing on how we are evaluating new chemicals and could commit to holding another public meeting on that. The framework was described in the document as a work in progress when issued [UNDERSTOOD, BUT IN THE SAME WAY A PROPOSED RULE THEN INCORPORATES COMMENTS AND IS RELEASED IN FINAL FORM, THAT NEEDS TO HAPPEN ON THEFRAMEWORK ALSO. IT ISN'T ENOUGH TO BRIEF THE COMMITTEE, THOUGH THAT IS ALWAYS APPRECIATED. CAN YOU COMMIT TO PUBLISH THE NEXT VERSION OF THE FRAMEWORK BY 1/31/19, INCLUDE LEGAL JUSTIFICATION FOR WHATEVER IT SAYS, HOLD A PUBLIC MEETING AND TAKE ADDITIONAL PUBLIC COMMENTS, AND BRIEF THE COMMITTEE. I ALSO ASSUME THAT THE NEW DOCUMENT WILL INCLUDE THE 'NOT LIKELY' INFORMATION YOU REFERENCED BUT THAT WON'T BE ALL IT INCLUDES. I DIDN'T EDIT THE WORDS ABOVE OTHER THAN THE DATE BECAUSE IT WASN'T 100% CLEAR TO ME THAT WE WERE TALKING ABOUT THE SAME DOCUMENT.

3. **CBI substantiation**– Section 14(c)(3) of new TSCA requires submitters of information to substantiate CBI claims. In addition, recognizing EPA's responsibility to weed out unwarranted CBI claims, section 14(g)(1)(A) requires EPA to review and either approve or deny CBI claims within 90 days of receipt. Under section 14(g)(1)(C), this review process must address all CBI claims for chemical identity and a representative subset of other claims comprising at least 25 percent of the total submitted. It is hard to see whether all of those things are happening, because so much of the PMN submittals and EPA's review thereof are redacted. Could EPA commit to issuing a report by July 1, 2019 that describes its efforts to comply with the CBI requirements in sections 14(c)(3) and 14(g)(1), and seek public comment and recommendations for improved management and review of CBI claims?

From RJ: We can commit to provide a report or letter or whatever the form on how we are handling CBI requirements WE DO WANT A REPORT ON THIS AS DESCRIBED ABOVE, BUT I NOTE THAT SECTION 26(j)(1) REQUIRES THAT EACH CBI CLAIM DETERMINATION HAS TO BE MADE PUBLIC, AND EPA HAS YET TO MAKE A SINGLE ONE PUBLIC. SAME WITH UNIQUE IDENTIFIERS. A REPORT ON WHAT YOU ARE DOING AND WHEN YOU WILL IMPLEMENT THE LAW IS THE MOST MINIMAL THING WE COULD ASK FOR IN THIS SPACE. AT THE VERY LEAST, THE REPORT SHOULD BE DETAILING THE NUMBER OF CLAIMS MADE, NUMBER OF DECISIONS MADE, INCLUDE COMMITMENTS FOR HOW AND WHEN THESE DECISIONS WILL BE PUBLICLY DOCUMENTED ON SOME TRACKING DATABASE, AND SO FORTH.

4. **CBI re-substantiation -** new TSCA says that "[t]he Administrator may require any person that has claimed protection for information from disclosure under this section, whether before, on, or after the date of enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act, to reassert and substantiate or re-substantiate the claim in accordance with this section— (A) after the chemical substance is designated as a high-priority substance under section 6(b) …" 15 USC 2613(f)(1). We would like EPA to commit to undertake re-substantiation of CBI claims for chemical substances undergoing REs, and make public any information for which the CBI claim(s) are no longer valid before the draft RE is published for comment.

From RJ: and we can in the same response commit to reviewing CBI claims for chemicals in RE's. Are you simply talking about the first ten though? We will review the claims but we also will issue the RE's for the first ten in February too in a very similar fashion to PV29.
THIS SHOULD INCLUDE ALL CHEMICALS THAT ARE UNDERGOING RES, INCLUDING THE FIRST TEN. PERHAPS FOR THE FIRST TEN, IT COULD BE SOONER THAN 45 DAYS BEFORE THE END OF THE COMMENT PERIOD ON THE RE, AND FOR FUTURE CHEMICALS UNDERGOING RES, IT COULD BE BEFORE THE SCOPE OF THE RE IS PUBLISHED (SO WOULD GIVE 6

MONTHS BTW PRIORTIZING AND PUBLISHING THE SCOPE)? AS PART OF RESUBSTANTIATION, EPA SHOULD BE MAKING THE DETERMINATIONS PUBLIC AS WELL AS ANY INFORMATION THAT NO LONGER QUALIFIES FOR CBI PROTECTION.

5. **State CBI sharing** – states have told me there are deviations from the law in how EPA is sharing CBI with them. I've requested more information and when I get it I will send it your way. This is a placeholder for now.

6. **Worker protections/SNURs** – For 16 recent PMNs, EPA identified the potential for unreasonable health risks to workers but, as a matter of policy, decided not to require workplace protections under section 5(e) orders or SNURs, and deemed the chemicals to be "not likely" to pose an unreasonable risk. This is a departure from the approach EPA has followed under both old and new TSCA. We would like EPA to resume issuing section 5(e) orders and SNURs protecting workers from such risks when they are identified in the Agency's reviews of new chemicals.

7. **Systematic review** – OCSPP has developed its own systematic review document even though ORD's has been largely blessed by the NAS. We'd like the OCSPP version to be withdrawn and/or not used until it is reviewed by NAS, and NAS feedback incorporated.

8. **PFAS SNUR** – EPA proposed its PFAS SNUR in 2015, and EPA has repeatedly said it is revising it to reflect new TSCA but planned to finalize it. We'd like a commitment that it be finalized by a date certain and assurance that its scope has not changed from what was proposed. My guess is this is in the mix on your PFAS management plan and that we could begin conversation on this item by reviewing the language you're currently using In that document and seeing if that language can be sent to TC in a letter.

From RJ: The PFAS SNUR is referenced in the upcoming report as well so that is very doable to commit to.

9. **PFAS information -** EPA has acknowledged that it lacks information about many PFAS chemicals. We would like EPA to commit to use EPA's authority under TSCA Section 8(a)(2) to require PFAS manufacturers and processors to submit information concerning the production, use, and impacts of PFAS chemicals. My guess is this is in the mix on your PFAS management plan and that we could begin conversation on this item by reviewing the language you're currently using In that document and seeing if that language can be sent to TC in a letter. If there are other ways to get this information (section 4 orders, for example), we are definitely open.

10. **MC ban** – We would like the ban on all consumer and most/all commercial uses to be finalized. I understand your challenge is OMB. Perhaps one way to deal with this would be to figure out how AW could communicate the OMB problem more clearly - this will obviously be raised both at the Dunn hearing and at AW's confirmation hearing.

11. **Comment period and peer review of risk evaluations:** We would like a 120 day comment period for the rest of the first 10 REs. They're the first REs to be conducted under the new law and many of them will be released for public comment simultaneously, which will be difficult for commenters to handle. We would also like to ensure that CSAC is properly set up for a separate peer review of each of the REs, and can suggest some measures that could help with that. These include augmenting the CSAC with chemical-specific expertise if necessary (and allow the public to suggest new chemical-specific reviewers as it has in other similar situations), ensuring that CSAC members reviewing particular REs do not have conflicts of interest associated with the particular chemical, providing separate CSAC peer review documents for each RE so that the public can understand the nature of the CSAC input, and respond in each final RE to public comments and peer reviewer input. If needed, EPA has the additional 6 month extension TSCA provided in which to take these measures, which I know is non-ideal, but these are the first ten and probably need more attention.

12. **Agricultural Worker Protection Standard (WPS) rule and the Certification of Pesticide Applicators (CPA) rule** – withdraw the proposed modifications to these rules (we believe you already offered to do this and that's basically what the Senate did in PRIA)

From RJ: The WPS and certified use and designated representative provision at OMB can be withdrawn and we can write back on that as well.

13. **PCB rule** – The Obama Administration sent a proposed rule to OMB that was never published. As I understand it, it basically makes schools remove ancient PCB light fixtures so the PCBs don't rain down on kids' heads anymore. These fixtures are well beyond their useful lifetime. We'd like that rule to be revived and proposed/finalized.

14. **CDR:** EPA received CDR data from industry some time ago and continues to say it will soon publish the CDR. We would like EPA to commit to publish the CDR by 1/15/19, and additionally commit not to revise the CDR rule for the rest of this Administration.

15. **Ethylene oxide** – no specific request here, but I'm aware of your ongoing dialogue with the Duckworth (and other) offices on this so I'm flagging it as a potential issue of interest.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 27, 2018 1:29 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

Attached is a new letter concerning the science rule and SAB.

We have a suggestion on PFAS which you may be more interested in, maybe not.

On the other list, here are items which we can write back to do:

We can place PMNs and associated documents on EPA's website but can't commit to within 15 days because the CBI comb through takes longer than that. We can commit to briefing the committee on what our plan is to place more PMN information on the website. We can commit to posting PMNs in the Federal Register every month. We can in fact commit to placing PMNs, the exemptions (TMEs), and notices of commencement in the Federal Register each month. We should be doing this anyway, but this is specifically what we can provide monthly:

- PMNs/SNUNs/MCANs: Case number, amendment number and version, date received, manufacturer (if not CBI), use (specific or generic if CBI), chemical substance (specific or generic name if CBI).
- TME information: Case, Submission type, Version, Received date, Manufacturer, Use, Chemical substance.
- NOC information: Case, Received date, Commencement date, If amendment and type of amendment (amendment to generic name, specific name, technical contact information, etc.), chemical substance.

We can also discuss a standard operating procedure we are probably 60 days out from finalizing on making public more material substantiating the not likely determinations. We can write to commit to brief the committee on that procedure when it's ready to be released. On the framework, we can provide a letter as well or briefing on how we are evaluating new chemicals and could commit to holding another public meeting on that. The framework was described in the document as a work in progress when issued.

I can understand the CBI claims and who that's important to in particular. We can commit to provide a report or letter or whatever the form on how we are handling CBI requirements and we can in the same response commit to reviewing CBI claims for chemicals in RE's. Are you simply talking about the first ten though? We will review the claims but we

also will issue the RE's for the first ten in February too in a very similar fashion to PV29. The PFAS SNUR is referenced in the upcoming report as well so that is very doable to commit to.

The WPS and certified use and designated representative provision at OMB can be withdrawn and we can write back on that as well.

There may be some more substance to provide on these, but this is about as far as we are able to go on that list. I'm glad to talk about other things on that list, but I'm a best offer kind of a guy without too much effort to low ball and offer. I want to offer what I really think we can do, so that's what this represents.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Tuesday, November 27, 2018 11:45 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

Thanks! – want to send us what you are proposing back on PFAS and CH2O and SAB as edits to the same letter? On SAB, I think we are fine with the 8 reappointments, the text we sent you about career staff advice, and depending on the call tomorrow we may want to add some document production (forward-looking, a commitment to provide some materials in the future, not before confirmation or a hotline etc), but do not expect to have new requests on policy on the advisory committee front. Happy to work to resolve a final letter text today and then start socializing this to folks.

We are headed in to talk to TC right now but can make time this afternoon if you want to talk through logistics, Dunn, or anything else.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 27, 2018 11:37 AM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

We can accept that edit.

I am strengthening the PFAS answer presently. I need to get some answer concerning formaldehyde so that everyone understands the procedure moving forward, but we can agree to IRIS processing of the chemical.

Finally, I have responses to the list of items concerning Alex, however, we need to have a conversation about it and what happens to all this if Peter and Chad can't get confirmed.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Tuesday, November 27, 2018 9:59 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

The Wehrum letter committed to the future denial of a rulemaking petition before it actually did so, among other commitments made. But in lieu of the first suggested edit, how about this one, which is intended to mirror a commitment to a policy but not specify a rulemaking outcome in a different part of the letter?

Let us know when you want to talk to figure the rest (formaldehyde and PFAS in particular) out. Happy to also share what I'm thinking in terms of process and what we will do to pave the way assuming we get to a good place on the substance.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, November 26, 2018 9:04 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re: Peter Wright

We didn't propose doing credit for exporting ethanol.

Ryan Jackson
Chief of Staff
U.S. EPA
202-564-6999

On Nov 26, 2018, at 7:52 PM, Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov> wrote:

> Why not? You did exactly that for Wehrum/Ernst didn't you?
>
> Sent from my iPhone
>
> On Nov 26, 2018, at 7:42 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> > We cannot put in a letter that the final rule will say something in particular. We cannot accept that last edit.
> >
> > ---
> >
> > **From:** Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
> > **Sent:** Wednesday, November 21, 2018 3:21 PM
> > **To:** Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
> > **Cc:** Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
> > **Subject:** RE: Peter Wright

Ryan – thanks for the response. We are definitely making progress.

First of all, just to respond to the Goo/SAB/ERRDA issue, the Goo memo explicitly refers to the **pre**-proposal stage, so we continue to think you are out of compliance with ERRDA. There is case law on this point that I imagine your lawyers are well aware of. I think the additions you made to the letter regarding SAB input and the need to re-propose may render this a moot point. Here is the rest (minus FARM)-

1. **Secret science** – added a very minor suggested tweak, and continue to wonder about the RIA. This rule will have impacts on other rules EPA promulgates, so it isn't entirely fair to say that the RIA isn't needed because this rule is only about EPA administration costs. I'd just ask that you think about that one again. But this letter is coming along and we appreciate it.

2. **Formaldehyde** – nothing new here, just waiting for you to get back to us on the pending request.

3. **SAB** – Re-appointing the 8 is very helpful - thanks. Happy to talk to the person you recommend we talk to as well, especially after you and he reviews what I'm including below.

   We want to talk further about process, but are willing to drop the proposal that you abandon the EPA grants conflict of interests thing (which we hate, so abandoning it is an accommodation on our part). When we talk about process, it isn't just about the EPA grants conflict of interest. It's about how recommendations are made for who to appoint. You have 7 SAB members that you're in the process of re-appointing, and a bunch of pending nominees for these slots. Historically, as nominees were being considered, EPA career staff would look at who was leaving and what needs SAB had in the coming year. So, for example, if all 7 departing people were industry people, one would expect the career staff to recognize that the SAB balance would argue for the appointment of new industry people and they would prepare options for new nominees that would be mostly or all industry people. If two of the 7 departing people were the SAB's only epidemiologists, and career staff knew that in the next year the SAB had a ton of epidemiology to do, they would prepare options for new nominees that would ensure the SAB retained its epidemiology capacity. Career staff would send decision-makers some document(s) that described who was leaving, what capacity was being lost, and recommend options for new appointees that addressed concerns that SAB retain diverse and qualified members and maintain core capacity. This Administration seems to have abandoned that process at least for some advisory committees. We'd like you to return to it. Note that decision-makers can choose not to accept the career staff recommendations, but those decision-makers should at least have the benefit of career staff input.

   Perhaps you could also include in a commitment letter on this that "EPA will follow its past practice of obtaining information and recommendations from EPA's career staff to ensure that new appointees to EPA's scientific advisory committees are independent, well-qualified, free of conflicts of interest, come from diverse technical and professional backgrounds and possess expertise in areas that the agency anticipates to be relevant in planned or anticipated reviews."

4. **PFAS** – nothing new here, just let us know what that language looks like

5. **TA** – thanks – had a brief call with the staff and sent some follow-up questions in writing. I'd really appreciate fast turnaround, and I tried hard to make them easy questions.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 20, 2018 7:25 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

I think this email is the latest among us. Now, the draft science policy letter is attached. It received the highest level of review. To follow up on the SAB issues, Tom Brennan is the director of the SAB and has been involved in the last two rounds of selections as director. Prior to that, Tom was the deputy for Zarba. He can answer any questions regarding conflict policy, and I can place him on the phone next week.

From: Jackson, Ryan
Sent: Monday, November 19, 2018 7:20 PM
To: 'Freedhoff, Michal (EPW)' <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

So just a couple of points of initial feedback. The draft science policy letter is being reviewed presently. However, for ERDDA compliance we follow the attached.

On the SAB, eight members 3 year terms expired October 1, 2018 and are eligible for reappointment. Those members are Dr. Ken Ramos (Medicine Toxicology) who chairs the Chemical Assessment Advisory Committee, Dr. Jay Turner (Air Quality Engineer) who chairs the Scientific and Technical Achievement Awards Panel, Dr. Sue Marty (Toxicology), Dr. Susan Felter (Toxicology), Dr. Tara Sabo Atwood (Ecotoxicology), Dr. Kenneth Portier (Statistics), Dr. Thomas Parkerton (Ecotoxicology), Dr. Robert Mace (Hydrology). We plan to reappoint them all. Also, on not following our rules, I really have no idea what you are talking about. Other than receiving grants, the conflicts of interest rules are the same. We have given board members notice now in two application processes.

Finally, page 11 of the opinion says that regardless of a proposed or final rule addressing EPCRA that reporting from animal waste is not required under EPCRA due to the FARM Act. That's why I say it caught our attention. In this case, the FARM Act was not enacted at the time. Administrator Pruitt issued guidance relying on the agricultural exemption from reporting. That is and would be a very broad exemption (which is also discussed in the case). The recent proposal we issued doesn't rely on the agricultural exemption. We believe a rulemaking based on that is too broad. We wanted to simply

address animal waste emissions. Any kind of tank spill, other emissions, discharge to water, etc are all reportable under EPCRA. An agricultural exemption for that would be inappropriate and probably not supportable. Additionally, as I mentioned we are taking down the agricultural exemption guidance anyway as too broad. That is a policy win for you too.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Monday, November 19, 2018 2:32 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Thanks Ryan

We appreciate the constructive engagement, and have a few thoughts to share in response.

First of all, on McIntosh – we are working to resolve the hold and will let you know if we run into problems. We ran that hotline without doing proactive member outreach because we had socialized it in advance with our LAs, and McIntosh is not a high-profile nominee. The hold is from an off-EPW Member we could not have anticipated. Hopefully it will be fine.

On Wright, we know there is a lot of on and off Committee interest in him, as well as widespread environmental NGO opposition to him. Assuming we get to a good resolution with you, we'll need to treat a potential hotline on him differently than we did for McIntosh, and spend more time proactively describing and selling the package. We would be working in good faith towards a voice vote and would actively help resolve problems if they arise.

Now to your points below:

1. **Secret science** – will look forward to reviewing the next draft. Just as a matter of interest and by way of example, unfortunately, lots of workers were exposed to PCBs and asbestos in the 1950s. It isn't exactly an experiment anyone wants to repeat, but is a way to explain the concern we have about older studies.
2. **Formaldehyde** – The problem with a TSCA-RE-only approach is that OW, OAR and/or OLEM can use an IRIS RA to inform future efforts in their programs because IRIS gets you a toxicity evaluation, including a reference dose/concentration. A TSCA RE doesn't get you that (which doesn't mean a TSCA RE is not useful – just saying they are different products that are used for different purposes). Appreciate your receptivity here. As I understand the normal 7-step IRIS process, it would be a 30-day EPA review, then a 60-day intra-agency review, then a 60-90 day public review, then back to NAS, and could thus in theory be completed in just over a year. What we want is for the formaldehyde IRIS assessment to be immediately freed up to follow the IRIS process/timelines that are normal. So a letter saying that, and committing to

inform TC if any step takes longer than normal, could be one way to go? We can review text in advance as with other efforts.

3. **SAB** – Happy to look at your list. It isn't just the conflict of interest part of the process that we have issue with, but also the manner in which nominees are selected for qualifications and balance that is not being followed
4. **PFAS** – let us know what that language looks like
5. **TA** – thanks
6. **FARM court case** – I am not the subject matter expert on this, but I think you may be making our point for us. That court decision relied on EPA guidance that was not an accurate description of the FARM Act , which is why we were so unhappy with the way EPA was describing the FARM Act.

Thanks again
Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Sunday, November 18, 2018 10:16 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

I can understand initial holds because we are EPA. However, the general perspective is that we plan to answer Republican and Democratic letters. We have, and we will and more. If there's something a member would like, it may take time but we will try to comply. In other words, we want to cooperate with them, but I need to have program directors here to do that.

There's a lot of people who work for Ford. Saying that Chad is responsible for all things Ford is the same as the NYT trying to say that Peter is responsible for all things Dow which also was successfully shot down in that article by Region 5 attorneys and staff who worked with Peter while at Dow. Chad was the director of global environmental policy for Ford when this situation was uncovered meaning he was working on Ford issues in Europe and South America. He never worked on this issue. If he had though, it would have been a good thing for Ford and the community because he would have solved it.

On the letter, we can accept most the suggestions.

- We agree to incorporate sending the proposal to the SAB to review. It would be helpful. We don't believe we have an ERDDA problem. EPA complies with ERDDA outlined in the Goo Memo. Unfortunately, I'm at home so I will send in the morning.
- We can incorporate your changes on retroactivity. The text we provided we believed not only said that but provided the exact language in the proposed rule to illustrate that.
- We can incorporate your changes on PII. However, I don't think it's good for us to rely on a study from the 1950s.

- We can incorporate your changes on the top of the second page on providing legal authority, however, I'm not sure how we will conduct an RIA on internal agency procedures. We don't have an obligation to do that, and I'm not sure how to assess costs within EPA. Additionally, we don't imply. We either say it or not.
- We can incorporate your changes concerning compliance with other laws, although I don't know if we will use those cites and I would have to check the cites. There's one reference that the Clean Air Act requires agencies to do something instead of simply referencing EPA, but I would imagine that's subject to come clean up.

I can send a final draft tomorrow.

On formaldehyde, if you want an IRIS inter-agency process to happen on this which we have no control over, I can agree to that but I need to check with others here. Although Lautenberg allows 3.5 years it doesn't have to take that long. We can conduct a very public risk evaluation for the conditions of use which includes all foreseeable uses in the judgment of the Administrator so yes we can evaluate for all uses. The result of that risk evaluation is regulation. The result of an IRIS review is a nice binder for the shelf which is part of the problem with that program. Additionally, this IRIS study on formaldehyde is something which has been ongoing for about 10 years and has until recently been criticized by the NAS and Congressional appropriations report language for its prior iterations. So yes, let me get back with you as soon as I'm able with probably an acceptance of this one too. We don't believe this is the way to approach a review of formaldehyde.

On the SAB, we are applying the same conflicts of interest rules we have always applied with the exception that if you are receiving a grant from EPA you unable to serve on the SAB. However, the specific offer was that there are 8 SAB members which have completed their first term. We propose reappointing all 8. I can provide their names tomorrow.

On PFAS, I need to check if we can lift the current draft language to send, but if we can we will accept this.

Finally, we can make a couple staff available to talk about off cycle and air conditioning credits for an hour? Let me know when works to do that. Also, I'm slow on getting a very recent federal district court case to you. It's in the 9th Circuit so maybe it doesn't matter on appeal, but the 9th Circuit is a big place. Regardless, we noticed it.

However, THE question I'm going to get when I take all this back is what do we get for doing this especially with word of a hold on Chad especially because we do have a problem with some of these requests. We need to have a telephone discussion of what this does.

Thanks.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Friday, November 16, 2018 11:28 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW)

<Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Ryan

Thanks for this response and for talking through some of the related issues with MF yesterday. Before sharing our response to the Wright-related matters, I wanted to let you know that we are trying to address the hold on Chad McIntosh, which as I mentioned last night, relates to this, and the hold was not lodged by a MI Senator. The fact that we have a hold on McIntosh is illustrative of the challenges EPA faces when asking to confirm any nominees through UC. We will keep you posted. We understand that there is also a blanket hold on ALL nominees for all agencies, but there is nothing we can do on that and assume it will work itself out before sine die. In the meantime, here is our response to the Wright-related matters. As always, we are happy to discuss.

1. **Secret science** Thank you for your effort to memorialize in part the conversations we have had with you, and that TC and AW have had, on this matter. We know your draft letter was a good-faith effort. However, there were some inaccuracies and misunderstandings associated with your draft. Attached is our redline, which you should read on a PC because we tried to explain in comment boxes the reasons for our suggested edits.

2. **Formaldehyde** It does not work for us to move this request into a TSCA RE. That would add 3.5 additional years to an already years-long expensive effort, would not result in a useful product for the non-OCSPP program offices. Moreover, even if you DID consider all conditions of use, you would violate your own (illegal) TSCA rules, and more years-worth of litigation would ensue. What we want is for the IRIS risk assessment for formaldehyde to continue to be processed using the normal IRIS procedures (which I believe were actually written by Nancy Beck when she was at OMB), without additional delay. I do not believe there is middle ground on this request, but if you feel creative, let us know.

3. **Science panels** What we are looking for is a return to your normal procedures (including for how conflicts of interest are assessed) for appointments and reappointments. These procedures are documented in writing at EPA, but EPA is not following them. I understand you mentioned the potential for a compromise involving some specific re-appointments. I would be interested in additional specificity (names, what panel, etc) on that so we can better respond to that offer.

4. **PFAS/CERCLA** We are glad that this is within the scope of your PFAS action plan, and know that it would need to be undertaken by rulemaking and thus could not be completed before the end of the Congress. Could AW make a written commitment to Senator Carper that this will occur and provide a rough timeframe for the NPRM and final agency action? We can edit draft letter language quickly.

5. **FARM** We understand that our staff and yours will engage substantively in coming days/weeks. As part of the conversation RJ and MF had yesterday, she also flagged more systemic concerns about the manner in which the agency engages with us. To that end, I've flagged for both of you, repeatedly, a TA request on cars I submitted about 3 weeks ago that Mandy has told EPA career

staff they do not have permission to undertake. I'd like that call to occur early next week. Note that I do not consider this a 'give' on your part – I consider the provision of TA to be the normal manner in which EPA has historically done its job.

Thanks very much

Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, October 22, 2018 11:29 AM
To: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: Peter Wright

To provide a specific update on this and overall update, we are updating and clarifying text for this answer. I'm anticipating getting some final language or simply thumbs up from our program office shortly. I also will provide an update to the EPCRA 304 site on the cites used.

On the accidental releases terminology, our program offices chose that term to distinguish a one-time, inadvertent release from a "continuous release" that "occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes." 40 CFR 302.8(b). There's different reporting requirements under CERCLA 103(f)(2) and EPCRA 304 for continuous releases versus a temporary or accidental or one time one. That's the distinction they report to me they are attempting to make.

On science transparency rules, you may have noticed that the unified regulatory agenda places it further out because of the anticipated time involved on this. The attached draft is an example of what we could provide to answer some specific and overall questions from the Senate about our timing, thoughts, and any path forward.

The formaldehyde study might have a pathway ahead which would be better than sending the study through intra-agency review, but I hope to have an answer on that soon.

On the science boards, there's a track record of board members leaving or not getting reappointed. However, it's not easy to determine why. Maybe they didn't apply or maybe they did. We have reappointed some and accepted new applicants in other cases and can provide that information. We can also provide the nominating individuals too. Some self nominate, but others come from other sources if that's of interest.

Finally, on CERCLA eligibility, we are in the process of putting together our PFAS strategy based on the 6 townhalls and record which closed 3 weeks ago. This is within that process. But also, this will require rulemaking which is not entirely within our control and for this will take a while. Something to get this request narrowed would be worth talking about, I think.

From: Repko, Mary Frances (EPW) [mailto:mary_frances_repko@epw.senate.gov]
Sent: Friday, October 5, 2018 5:47 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE:

Ryan,

We are glad you took down the guidance link from the website, and that is helpful. But there are a few more issues with what the agency's website says now that the guidance is down.

The site says:

EPCRA Reporting Requirements

Do I need to submit an EPCRA report?
No. Based on the criteria for EPCRA section 304 release reporting, air emissions from animal waste (including decomposing animal waste) at a farm do not need to be reported under EPCRA.
Furthermore, the statute excludes farms that only use substances in "routine agricultural operations" from reporting releases of hazardous substances under EPCRA section 304. For more information, please see: EPCRA Q&A.

- While you don't have a link to the guidance doc, the website refers to it by citing the specific criteria under 304. It would be better if the website language were more simple:

  No. The EPA has interpreted the "routine agricultural operations" exemption under EPCRA section 304 to not require reporting from farms. For more information, please see: EPCRA Q&A.

- Also, the website's link to EPCRA 304 talks about accidental releases. That's not a word used in the statute, and certainly EPCRA reporting isn't limited to just accidental releases, but rather to any release that isn't federally permitted and that doesn't fall into one of the exemption categories in the statute.

- Finally, you need to update the links to the CFR on the EPCRA 304 page, since what is linked to is now out of date, having been modified by the CFR changes made to reflect the recent vacature order by the DC Circuit of the 2008 rule.

Hope that's clear,
MF

-----Original Message-----
From: Freedhoff, Michal (EPW)
Sent: Wednesday, October 3, 2018 8:03 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re:

Thanks!

Sent from my iPhone

> On Oct 3, 2018, at 6:40 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> We'll have the changes to the FARM Act website posted within the next 30 minutes.
>
>
>
>
>
>
>
> Ryan Jackson
> Chief of Staff
> U.S. EPA
> 202-564-6999
>

Message

From: Engaging Supervising & Managing the New Government Workforce [NewGovWorkforce&PMA@PotomacForumEvent.org]
Sent: 12/4/2018 3:02:26 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM] Next Tuesday: Register-Managing the New Gov Workforce & Improve Engagement

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Jason Briefel
Executive Director
Senior Executives Association (SEA)

--

Robert Goldenkoff
Director, Strategic Issues
GAO

Confirmed Speakers

Mika Cross
Award Winning Federal Workforce Expert

Dr. Ray M. Crawford, Jr.
Chief of Staff
Executive Level Outreach
Office of Federal Student Aid
United States Department of Education

Thevee Gray
Personnel Psychologist
United States Department of Agriculture

Chris Armstrong
Veritas Culture
Former Culture Executive
United States Intelligence Community Agencies

Vince Brantley
Veritas Culture
Former Culture Executive
Defense Intelligence Agency (DIA)

Erica M. Roberts
Training Director, Customer Experience Expert,
and Employee Engagement Strategist
Former Director of Customer Service and Customer Service Program
United States Department of Labor (DOL)

Alex Harrington
Senior Special Advisor
Talent Management Division
United States Customs and Border Protection (CBP)

Robert Goldenkoff
Director, Strategic Issues Team
Government Accountability Office (GAO)

Barbara H. Irwin
Founder and President
HR Advisors Group

Micheal Lawyer
Special Assistant to the Chief Human Capital Officer,
Department of Housing and Urban Development (HUD)

Loren Kargbo
Talent Acquisition Lead
U.S. Department of Commerce
Enterprise Services
(Awaiting Agency Approval)

Darryl E. Peek II
Senior Manager, Strategy
Salesforce Public Sector North America
(Former DHS Executive)

Overview:
The president's management agenda provides a long-term vision for rebuilding public trust in government by tackling systemic barriers to reform, including an ineffective personnel management system and outdated technology infrastructure. The goals are threefold: deliver on agency missions, provide superior service to the public, and eliminate waste.

Experienced Human Capital Executives and Leadership Experts will share their insight and experience in developing and implementing long and short-term workforce management practices that will achieve implementing

the PMA vision and develop the next generation of Federal government leaders.

This workshop will provide you with practical, easy to implement tools and resources to help your agency develop an innovative hiring strategy that brings on the right talent with the right skills, empower employees, align skills and competencies with mission requirements and modernize your workplace for the digital age while understanding how best to improve performance, increase accountability and enhance mission efficacy through effective recruitment and retention.

What You Will Learn:
- Identify the competencies needed as a successful supervisor to maximize employee performance and how to avoid common pitfalls to managing performance and conduct in the modern workplace

- Optimize your strategy for recruiting, hiring, training and rewarding the Future Federal Workforce by bringing in the next generation of workers and retaining top talent; training (and retraining) personnel to forecast for future mission requirements, develop leaders across all levels of the organization and to enhance performance across the organization.

- Adopt promising practices that drive positive outcomes by leveraging the Federal Employee Viewpoint Survey Results into actionable steps to cultivate an inclusive, high-performing culture designed to retain top talent and maximize employee potential and performance

- Optimize employee recognition programs designed to recognize, reward and retain top performers;

- Build your toolkit for cultivating a culture of engagement and accountability designed to achieve enhanced organizational and individual performance

- Workforce & Engagement and Cross Agency Priorities and the President's Management Agenda

Who Should Attend:
- Federal supervisors and managers
- Federal HR Executives, managers and staff
- Anyone responsible for implementing Agency restructuring plans
- Federal employees or members of employee affinity groups
- Communications practitioners responsible for leading change management and internal communications campaigns
- IGs and Staff

- Federal CXOs responsible for the President's Management Agenda
- Industry Partners who support the government

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This email was sent by: **Potomac Forum, Ltd.**
2800 Eisenhower Avenue , Alexandria , Virginia, 22314 , USA

Message

From: Esri Developer Outreach Team [newsletter@esri.com]
Sent: 11/21/2018 3:05:31 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Explore the 3D Capabilities on the Web using the ArcGIS API for JavaScript

View email in web browser

GeoDev Webinar Series

Hello Ryan:

The Developer Outreach Team is proud to announce that we are continuing our GeoDev webinar series! This is a webinar series produced by developers for developers. We would love to invite you to join us for our next one.

On Wednesday, November 28th, we will be hosting our next GeoDev webinar, "An Introduction to 3D on the Web with the ArcGIS API for JavaScript." In this webinar users will discover the 3D capabilities of the web using ArcGIS API for JavaScript. In a first step, we'll talk about the basics of 3D GIS. Then we will focus on how to use the API to implement apps using core concepts: web scenes, cameras and animations, layers, and symbology. In a third part, we will create a small web application using 3D specific techniques like elevation modes for layers, 3D styling like edge rendering or environment settings.

We invite you to join us and look forward to your attendance!

Sincerely,
The Developer Outreach Team

Register Now

Webinar Details

An Introduction to 3D on the Web with the ArcGIS API for JavaScript

Wednesday, November 28
9:00 a.m.-10:00 a.m. (PDT)

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Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 11/16/2018 5:59:56 PM
To: Lyons, Troy [lyons.troy@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]; Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]; Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Subject: RE: Peter Wright

I don't think I have clarity into which items we disagree on. Are you stating that none of these issues work and that you're not prepared to continue the conversation on any of them?

As for the TA call, I need it next week. It was requested in October. Senator Carper has flagged this issue for AW as being a high priority numerous times, as have I to each of you. You have also impressed upon us the time-sensitivity associated with decision-making on this topic. Happy to let Senator Carper know that even a simple phone call with your technical staff on one of his top priorities is beyond EPA's capacity to satisfy, if that is the message you'd like me to convey. Let me know.

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Lyons, Troy <lyons.troy@epa.gov>
Sent: Friday, November 16, 2018 12:54 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Subject: RE: Peter Wright

Senator Carper said in the meeting with Administrator Wheeler that we could work on the items and find alternatives if need be. Given that we disagree on several of the items progress—what else can be done in place of those requests? Peter is a doable nominee by the end of the year. What are other options to get him over the goal line?

On the TA call—permission was never denied to provide TA. We have always been responsive in satisfying requests for TA from both the minority and majority. This is simply a resource issue as the staff who would do the TA is up to their eyeballs reviewing comments. We will work towards getting you your TA call once our technical folks have the capacity.

From: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Sent: Friday, November 16, 2018 11:28 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Ryan

Thanks for this response and for talking through some of the related issues with MF yesterday. Before sharing our response to the Wright-related matters, I wanted to let you know that we are trying to address the hold on Chad McIntosh, which as I mentioned last night, relates to this, and the hold was not lodged by a MI Senator. The fact that we have a hold on McIntosh is illustrative of the challenges EPA faces when asking to confirm any nominees through UC. We will keep you posted. We understand that there is also a blanket hold on ALL nominees for all agencies, but there is

nothing we can do on that and assume it will work itself out before sine die. In the meantime, here is our response to the Wright-related matters. As always, we are happy to discuss.

1. **Secret science** Thank you for your effort to memorialize in part the conversations we have had with you, and that TC and AW have had, on this matter. We know your draft letter was a good-faith effort. However, there were some inaccuracies and misunderstandings associated with your draft. Attached is our redline, which you should read on a PC because we tried to explain in comment boxes the reasons for our suggested edits.

2. **Formaldehyde** It does not work for us to move this request into a TSCA RE. That would add 3.5 additional years to an already years-long expensive effort, would not result in a useful product for the non-OCSPP program offices. Moreover, even if you DID consider all conditions of use, you would violate your own (illegal) TSCA rules, and more years-worth of litigation would ensue. What we want is for the IRIS risk assessment for formaldehyde to continue to be processed using the normal IRIS procedures (which I believe were actually written by Nancy Beck when she was at OMB), without additional delay. I do not believe there is middle ground on this request, but if you feel creative, let us know.

3. **Science panels** What we are looking for is a return to your normal procedures (including for how conflicts of interest are assessed) for appointments and reappointments. These procedures are documented in writing at EPA, but EPA is not following them. I understand you mentioned the potential for a compromise involving some specific re-appointments. I would be interested in additional specificity (names, what panel, etc) on that so we can better respond to that offer.

4. **PFAS/CERCLA** We are glad that this is within the scope of your PFAS action plan, and know that it would need to be undertaken by rulemaking and thus could not be completed before the end of the Congress. Could AW make a written commitment to Senator Carper that this will occur and provide a rough timeframe for the NPRM and final agency action? We can edit draft letter language quickly.

5. **FARM** We understand that our staff and yours will engage substantively in coming days/weeks. As part of the conversation RJ and MF had yesterday, she also flagged more systemic concerns about the manner in which the agency engages with us. To that end, I've flagged for both of you, repeatedly, a TA request on cars I submitted about 3 weeks ago that Mandy has told EPA career staff they do not have permission to undertake. I'd like that call to occur early next week. Note that I do not consider this a 'give' on your part – I consider the provision of TA to be the normal manner in which EPA has historically done its job.

Thanks very much

Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, October 22, 2018 11:29 AM
To: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: Peter Wright

To provide a specific update on this and overall update, we are updating and clarifying text for this answer. I'm anticipating getting some final language or simply thumbs up from our program office shortly. I also will provide an update to the EPCRA 304 site on the cites used.

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On science transparency rules, you may have noticed that the unified regulatory agenda places it further out because of the anticipated time involved on this. The attached draft is an example of what we could provide to answer some specific and overall questions from the Senate about our timing, thoughts, and any path forward.

The formaldehyde study might have a pathway ahead which would be better than sending the study through intra-agency review, but I hope to have an answer on that soon.

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Finally, on CERCLA eligibility, we are in the process of putting together our PFAS strategy based on the 6 townhalls and record which closed 3 weeks ago. This is within that process. But also, this will require rulemaking which is not entirely within our control and for this will take a while. Something to get this request narrowed would be worth talking about, I think.

From: Repko, Mary Frances (EPW) [mailto:mary_frances_repko@epw.senate.gov]
Sent: Friday, October 5, 2018 5:47 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE:

Ryan,

We are glad you took down the guidance link from the website, and that is helpful. But there are a few more issues with what the agency's website says now that the guidance is down.

The site says:

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Do I need to submit an EPCRA report?
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Furthermore, the statute excludes farms that only use substances in "routine agricultural operations" from reporting releases of hazardous substances under EPCRA section 304. For more information, please see: EPCRA Q&A.

- While you don't have a link to the guidance doc, the website refers to it by citing the specific criteria under 304. It would be better if the website language were more simple:

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- Finally, you need to update the links to the CFR on the EPCRA 304 page, since what is linked to is now out of date, having been modified by the CFR changes made to reflect the recent vacature order by the DC Circuit of the 2008 rule.

Hope that's clear,
MF

-----Original Message-----
From: Freedhoff, Michal (EPW)
Sent: Wednesday, October 3, 2018 8:03 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re:

Thanks!

Sent from my iPhone

> On Oct 3, 2018, at 6:40 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> We'll have the changes to the FARM Act website posted within the next 30 minutes.
>
>
>
>
>
>
>
> Ryan Jackson
> Chief of Staff
> U.S. EPA
> 202-564-6999
>

Message

From: Rickman, Gregg (Rounds) [Gregg_Rickman@rounds.senate.gov]
Sent: 12/6/2018 7:35:46 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Johnston, Mark (Rounds) [Mark_Johnston@rounds.senate.gov]
Subject: RE: EPA's WOTUS proposal

Thanks so much and congratulations!! We appreciate anything you can send us to help the Senator understand this better.

Gregg Rickman
Legislative Director
U.S. Senator Mike Rounds (SD)
502 Hart Building
202-224-5842

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Thursday, December 6, 2018 2:33 PM
To: Rickman, Gregg (Rounds) <Gregg_Rickman@rounds.senate.gov>
Cc: Johnston, Mark (Rounds) <Mark_Johnston@rounds.senate.gov>
Subject: Re: EPA's WOTUS proposal

Of course we can. I'm actually not out of town. Ex. 6
Ex. 6 But of course we can do this. Un momento.

Ryan Jackson
Chief of Staff
U.S. EPA
202-564-6999

On Dec 6, 2018, at 10:06 AM, Rickman, Gregg (Rounds) <Gregg_Rickman@rounds.senate.gov> wrote:

> Ryan, I hope all is well. I understand you are out of town but Sen. Rounds has asked me to see if you could help. We heard last night that he is being requested to attend the agency's event Tuesday on WOTUS. We were also sent a short set of talking points on it but he is specifically asking for much more concrete details before he can make a decision. Rest assured that we will not let out any of the

details, but he needs to understand what this is about. If you have any questions, you can call me direct at Ex. 6 or reach me by email. Thanks so much for your help.

Gregg

Gregg Rickman
Legislative Director
U.S. Senator Mike Rounds (SD)
502 Hart Building
202-224-5842

<image009.png><image010.png><image011.png> <image012.jpg>

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 11/16/2018 4:27:46 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]
CC: Lyons, Troy [lyons.troy@epa.gov]; Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Subject: RE: Peter Wright
Attachments: Secret Science letterEPWeditstoEPA.docx

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Dear Senator Carper,

I appreciate your interest in the U.S. Environmental Protection Agency (EPA) proposed rule, "Strengthening Transparency in Regulatory Science," and the opportunity to respond to some of your concerns.

The intent of the proposed rule is to establish procedures for strengthening the transparency and reproducibility of scientific information underlying significant EPA actions. Specifically, the proposal seeks to ensure that the data and models underlying EPA regulatory science are "publicly available in a manner sufficient for validation and analysis."[1] The proposal was designed to enhance existing policies on scientific transparency and public access to data in a way that builds public trust and understanding of EPA's regulatory decision making.

Since the rule was proposed in April 2018, EPA has received a variety of public feedback that require careful consideration. EPA held a public hearing on July 17, 2018 in Washington, D.C. that ~~lasted~~ hosted nearly 100 speakers, including members of Congress. During the 108-day public comment period, EPA also received over 597,000 written comments, of which over 9,200 are individual, unique comments.[2] EPA, with contractor assistance, is currently in the process of reviewing the unique comments and preparing a summary of those comments to inform the agency's internal regulatory development workgroup's next steps.

While EPA has received a host of questions on the proposal that are still under thoughtful consideration, I want to address some of the more prevalent questions related to the applicability of the rule and protections for personal information. In the first instance, the proposed rule ~~would~~ could be read to apply ~~prospectively, not~~ retroactively to scientific studies that pre-date the proposal. ~~As clearly stated in the rule, "[t]his proposed regulation is intended to apply prospectively to final regulations that are determined to be 'significant regulatory actions' pursuant to E.O. 12866."[3]~~ However, that is not EPA's intention. Accordingly, I commit that EPA will not apply the rule retroactively to studies and science that pre-date the rule. In regard to questions about protection of personal information, nothing in the text of the proposal would compel disclosure of confidential or private information. In fact, the proposed rule reinforces existing legal and ethical protections of such information. The proposal states, "[w]here the Agency is making data or models publicly available, it shall do so in a fashion that is consistent with law, protects privacy, confidentiality, confidential business information, and is sensitive to national and homeland security."[4] I commit to ensure that in instances in which EPA has determined that disclosing a study's underlying data may implicitly or explicitly identify such information, it will not publicly disclose the data, but will nevertheless fully consider the study during the rule development process.

---

[1] 83 Fed. Reg. 18871, April 30, 2018.

[2] [HYPERLINK "https://www.regulations.gov/document?D=EPA-HQ-OA-2018-0259-0001"]

~~[3] 83 Fed. Reg. 18871, April 30, 2018~~

[4] 83 Fed. Reg. 18873, April 30, 2018

Commented [FM(1]: How does EPA propose to cure the ERDDA/SAB problem? If the ERDDA failure can only be cured by re-proposal, why not just commit to re-propose in this letter?

Under 42 USC§ 4365 (c)(1) (ERDDA), when EPA submits a rule or other regulatory document to any other Federal agency for review and comment, it must also submit it to its Science Advisory Board, along with the relevant scientific and other information on which the proposed rule is based. EPA and the SAB have adopted procedures to implement this statutory requirement, whereby EPA provides SAB with a description of planned major actions not yet proposed. Here, no notice of the proposed rule or any of its underlying materials was provided to the SAB before it was sent to OMB or published in the Federal Register.

Commented [FM(2]: Can EPA commit to what AW told TC – namely, that the final rule will not apply retroactively or retrospectively in lieu of quoting what seems to be a select quote from the NPRM?

While the rule does contain the language quoted in the draft letter, it also states: "EPA seeks comment on how the prospective or retrospective application of the provisions for dose response data and models or pivotal regulatory science could inadvertently introduce bias regarding the timeliness and quality of the scientific information available."

The rule also says, "The Agency's offices should be guided by this policy to the maximum extent practicable during ongoing regulatory action, even where such research has already been generated, solicited, or obtained."

The rule also says: "EPA seeks comment on the manner in which this proposed rule should apply to [NAAQS] previous record."

Commented [FM(3]: Added language to ensure that data isn't excluded when legal, financial or logistical barriers exist to making it publicly available.

Note that the concern is not that EPA would publicly disclose the information, but that the barrier to identifying and redacting such information would lead to its exclusion from the materials used as the basis for a rulemaking.

Here is an example of the concern: What about a study that relies on old info – like a PCB study on workers from the 1950s. How could that data be obtained or made public? What would the costs associated with a) determining whether the data exists and b) making it electronically available and redacted or c) deciding not to include the study, be? Since it would obviously be less cost and time intensive to simply exclude such a study, how can we be sure that option c) won't be utilized every time it is too difficult to figure out other options?

Given the scope and volume of public comments, the Agency's review process cannot be rushed, and EPA has a significant amount of work ahead to fully consider and develop any final action. As with all rulemakings issued by EPA, any final action must be based on our statutory authority and a robust, sound record. Where EPA determines further analyses, ~~or~~ information or legal authority is needed to support a particular final action, the Agency will issue a supplemental notice seeking further public comment. As I implied during a recent telephone conversation with you, I expect to issue a supplemental notice with an accompanying public comment period for this rulemaking before it is finalized. That notice will include the following:

- A Regulatory Impact Analysis (RIA) or a detailed explanation of why EPA has determined that an RIA is not necessary, including analysis to support EPA's belief that "the benefits of this proposed rule justify the costs" in light of the potential costs to the Agency associated with identifying, redacting and publishing studies and the potential costs to researchers associated with having to bring their work into compliance with the rule if it were implemented.
- A specific legal analysis of the statutory provisions that provide EPA with the authority to promulgate the rule, as well as any case law that EPA relied~~s~~ upon to support the rule. The supplemental notice will also address comments filed in response to the original proposal that question whether the proposal is consistent with all provisions of all statutes that EPA administers.

I commit that as the EPA moves forward with its consideration of this proposal, the Agency will ensure that it has complied with all applicable laws, including the Administrative Procedure Act and all of EPA's organic statutes, as well as executive orders, that govern the rule-making process. Further, I commit that the Agency's implementation and use of this rule will comply with the Administrative Procedure Act and Clean Air Act[5], which requires agencies to consider[6] and respond[7] to all significant information presented to them ~~it~~ pursuant to a rulemaking, as well as statutes that mandate the use of the best available science, such as the Toxic Substances Control Act[8] and Safe Drinking Water Act[9].

I appreciate your interest in this proposed rule, and commit to working with your office to provide as much information and briefings as we can provide, and to keep your office fully updated concerning this rulemaking.

Commented [FM(4]: Along with above SAB/ERDDA deficiency, this text addresses the only option available to cure the procedural shortcuts AW and TC discussed on the phone.

Commented [FM(5]: These bullets further expand upon the legal deficiencies of the proposed rule.

Commented [FM(6]: The text included in the draft letter commits to follow the APA when PROMULGATING the rule. The text we've added ensures that EPA will comply with the APA, the procedural provisions of the CAA, EOs and the rest of EPA's organic statutes when promulgating AND implementing the rule.

[5] Clean Air Act §307(d)(3) and (6)
[6] 5 U.S.C. §553
[7] Home Box Office, Inc. v. F.C.C., 567 F.2d 9, 35–36 (D.C. Cir. 1977)
[8] 15 U.S.C. 2625(h)
[9] 42 U.S.C. § 300g-1(b)(3)(A)

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 11/21/2018 9:09:29 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]
CC: Lyons, Troy [lyons.troy@epa.gov]
Subject: RE: Peter Wright

Thanks – we wrote you an oversight letter about a failure to do that for last year's CASAC nominees, so I am glad to hear that perhaps things have changed. Yes – will send you the TA in just a few. Also have a Dunn email teed up to send shortly.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Wednesday, November 21, 2018 3:54 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

We should set up a call with Tom Brennan. What you are describing is what we did just a couple of weeks ago to put together recommendations for Wheeler for next week. The staff of SAB sat down with David Dunlap and me and that's exactly what we did. I will place us all on an email to get that set up. In fact, we agree to your red text.

Will you send me your TA questions?

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Wednesday, November 21, 2018 3:21 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Ryan – thanks for the response. We are definitely making progress.

First of all, just to respond to the Goo/SAB/ERRDA issue, the Goo memo explicitly refers to the **pre**-proposal stage, so we continue to think you are out of compliance with ERRDA. There is case law on this point that I imagine your lawyers are well aware of. I think the additions you made to the letter regarding SAB input and the need to re-propose may render this a moot point. Here is the rest (minus FARM)-

1. **Secret science** – added a very minor suggested tweak, and continue to wonder about the RIA. This rule will have impacts on other rules EPA promulgates, so it isn't entirely fair to say that the RIA isn't needed because this rule is only about EPA administration costs. I'd just ask that you think about that one again. But this letter is coming along and we appreciate it.

2. **Formaldehyde** – nothing new here, just waiting for you to get back to us on the pending request.

3. **SAB** – Re-appointing the 8 is very helpful - thanks. Happy to talk to the person you recommend we talk to as well, especially after you and he reviews what I'm including below.

We want to talk further about process, but are willing to drop the proposal that you abandon the EPA grants conflict of interests thing (which we hate, so abandoning it is an accommodation on our part). When we talk about process, it isn't just about the EPA grants conflict of interest. It's about how recommendations are made for who to appoint. You have 7 SAB members that you're in the process of re-appointing, and a bunch of pending nominees for these slots. Historically, as nominees were being considered, EPA career staff would look at who was leaving and what needs SAB had in the coming year. So, for example, if all 7 departing people were industry people, one would expect the career staff to recognize that the SAB balance would argue for the appointment of new industry people and they would prepare options for new nominees that would be mostly or all industry people. If two of the 7 departing people were the SAB's only epidemiologists, and career staff knew that in the next year the SAB had a ton of epidemiology to do, they would prepare options for new nominees that would ensure the SAB retained its epidemiology capacity. Career staff would send decision-makers some document(s) that described who was leaving, what capacity was being lost, and recommend options for new appointees that addressed concerns that SAB retain diverse and qualified members and maintain core capacity. This Administration seems to have abandoned that process at least for some advisory committees. We'd like you to return to it. Note that decision-makers can choose not to accept the career staff recommendations, but those decision-makers should at least have the benefit of career staff input.

Perhaps you could also include in a commitment letter on this that "EPA will follow its past practice of obtaining information and recommendations from EPA's career staff to ensure that new appointees to EPA's scientific advisory committees are independent, well-qualified, free of conflicts of interest, come from diverse technical and professional backgrounds and possess expertise in areas that the agency anticipates to be relevant in planned or anticipated reviews."

4. **PFAS** – nothing new here, just let us know what that language looks like

5. **TA** – thanks – had a brief call with the staff and sent some follow-up questions in writing. I'd really appreciate fast turnaround, and I tried hard to make them easy questions.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 20, 2018 7:25 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

I think this email is the latest among us. Now, the draft science policy letter is attached. It received the highest level of review. To follow up on the SAB issues, Tom Brennan is the director of the SAB and has been involved in the last two rounds of selections as director. Prior to that, Tom was the deputy for Zarba. He can answer any questions regarding conflict policy, and I can place him on the phone next week.

From: Jackson, Ryan
Sent: Monday, November 19, 2018 7:20 PM
To: 'Freedhoff, Michal (EPW)' <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

So just a couple of points of initial feedback. The draft science policy letter is being reviewed presently. However, for ERDDA compliance we follow the attached.

On the SAB, eight members 3 year terms expired October 1, 2018 and are eligible for reappointment. Those members are Dr. Ken Ramos (Medicine Toxicology) who chairs the Chemical Assessment Advisory Committee, Dr. Jay Turner (Air Quality Engineer) who chairs the Scientific and Technical Achievement Awards Panel, Dr. Sue Marty (Toxicology), Dr. Susan Felter (Toxicology), Dr. Tara Sabo Atwood (Ecotoxicology), Dr. Kenneth Portier (Statistics), Dr. Thomas Parkerton (Ecotoxicology), Dr. Robert Mace (Hydrology). We plan to reappoint them all. Also, on not following our rules, I really have no idea what you are talking about. Other than receiving grants, the conflicts of interest rules are the same. We have given board members notice now in two application processes.

Finally, page 11 of the opinion says that regardless of a proposed or final rule addressing EPCRA that reporting from animal waste is not required under EPCRA due to the FARM Act. That's why I say it caught our attention. In this case, the FARM Act was not enacted at the time. Administrator Pruitt issued guidance relying on the agricultural exemption from reporting. That is and would be a very broad exemption (which is also discussed in the case). The recent proposal we issued doesn't rely on the agricultural exemption. We believe a rulemaking based on that is too broad. We wanted to simply address animal waste emissions. Any kind of tank spill, other emissions, discharge to water, etc are all reportable under EPCRA. An agricultural exemption for that would be inappropriate and probably not supportable. Additionally, as I mentioned we are taking down the agricultural exemption guidance anyway as too broad. That is a policy win for you too.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Monday, November 19, 2018 2:32 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Thanks Ryan

We appreciate the constructive engagement, and have a few thoughts to share in response.

First of all, on McIntosh – we are working to resolve the hold and will let you know if we run into problems. We ran that hotline without doing proactive member outreach because we had socialized it in advance with our LAs, and McIntosh is not a high-profile nominee. The hold is from an off-EPW Member we could not have anticipated. Hopefully it will be fine.

On Wright, we know there is a lot of on and off Committee interest in him, as well as widespread environmental NGO opposition to him. Assuming we get to a good resolution with you, we'll need to treat a potential hotline on him differently than we did for McIntosh, and spend more time proactively describing and selling the package. We would be working in good faith towards a voice vote and would actively help resolve problems if they arise.

Now to your points below:

1. **Secret science** – will look forward to reviewing the next draft. Just as a matter of interest and by way of example, unfortunately, lots of workers were exposed to PCBs and asbestos in the 1950s. It isn't exactly an experiment anyone wants to repeat, but is a way to explain the concern we have about older studies.
2. **Formaldehyde** – The problem with a TSCA-RE-only approach is that OW, OAR and/or OLEM can use an IRIS RA to inform future efforts in their programs because IRIS gets you a toxicity evaluation, including a reference dose/concentration. A TSCA RE doesn't get you that (which doesn't mean a TSCA RE is not useful – just saying they are different products that are used for different purposes). Appreciate your receptivity here. As I

understand the normal 7-step IRIS process, it would be a 30-day EPA review, then a 60-day intra-agency review, then a 60-90 day public review, then back to NAS, and could thus in theory be completed in just over a year. What we want is for the formaldehyde IRIS assessment to be immediately freed up to follow the IRIS process/timelines that are normal. So a letter saying that, and committing to inform TC if any step takes longer than normal, could be one way to go? We can review text in advance as with other efforts.

3. **SAB** – Happy to look at your list. It isn't just the conflict of interest part of the process that we have issue with, but also the manner in which nominees are selected for qualifications and balance that is not being followed
4. **PFAS** – let us know what that language looks like
5. **TA** – thanks
6. **FARM court case** – I am not the subject matter expert on this, but I think you may be making our point for us. That court decision relied on EPA guidance that was not an accurate description of the FARM Act , which is why we were so unhappy with the way EPA was describing the FARM Act.

Thanks again
Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Sunday, November 18, 2018 10:16 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

I can understand initial holds because we are EPA. However, the general perspective is that we plan to answer Republican and Democratic letters. We have, and we will and more. If there's something a member would like, it may take time but we will try to comply. In other words, we want to cooperate with them, but I need to have program directors here to do that.

There's a lot of people who work for Ford. Saying that Chad is responsible for all things Ford is the same as the NYT trying to say that Peter is responsible for all things Dow which also was successfully shot down in that article by Region 5 attorneys and staff who worked with Peter while at Dow. Chad was the director of global environmental policy for Ford when this situation was uncovered meaning he was working on Ford issues in Europe and South America. He never worked on this issue. If he had though, it would have been a good thing for Ford and the community because he would have solved it.

On the letter, we can accept most the suggestions.

- We agree to incorporate sending the proposal to the SAB to review. It would be helpful. We don't believe we have an ERDDA problem. EPA complies with ERDDA outlined in the Goo Memo. Unfortunately, I'm at home so I will send in the morning.
- We can incorporate your changes on retroactivity. The text we provided we believed not only said that but provided the exact language in the proposed rule to illustrate that.
- We can incorporate your changes on PII. However, I don't think it's good for us to rely on a study from the 1950s.
- We can incorporate your changes on the top of the second page on providing legal authority, however, I'm not sure how we will conduct an RIA on internal agency procedures. We don't have an obligation to do that, and I'm not sure how to assess costs within EPA. Additionally, we don't imply. We either say it or not.

- We can incorporate your changes concerning compliance with other laws, although I don't know if we will use those cites and I would have to check the cites. There's one reference that the Clean Air Act requires agencies to do something instead of simply referencing EPA, but I would imagine that's subject to come clean up.

I can send a final draft tomorrow.

On formaldehyde, if you want an IRIS inter-agency process to happen on this which we have no control over, I can agree to that but I need to check with others here. Although Lautenberg allows 3.5 years it doesn't have to take that long. We can conduct a very public risk evaluation for the conditions of use which includes all foreseeable uses in the judgment of the Administrator so yes we can evaluate for all uses. The result of that risk evaluation is regulation. The result of an IRIS review is a nice binder for the shelf which is part of the problem with that program. Additionally, this IRIS study on formaldehyde is something which has been ongoing for about 10 years and has until recently been criticized by the NAS and Congressional appropriations report language for its prior iterations. So yes, let me get back with you as soon as I'm able with probably an acceptance of this one too. We don't believe this is the way to approach a review of formaldehyde.

On the SAB, we are applying the same conflicts of interest rules we have always applied with the exception that if you are receiving a grant from EPA you unable to serve on the SAB. However, the specific offer was that there are 8 SAB members which have completed their first term. We propose reappointing all 8. I can provide their names tomorrow.

On PFAS, I need to check if we can lift the current draft language to send, but if we can we will accept this.

Finally, we can make a couple staff available to talk about off cycle and air conditioning credits for an hour? Let me know when works to do that. Also, I'm slow on getting a very recent federal district court case to you. It's in the 9th Circuit so maybe it doesn't matter on appeal, but the 9th Circuit is a big place. Regardless, we noticed it.

However, THE question I'm going to get when I take all this back is what do we get for doing this especially with word of a hold on Chad especially because we do have a problem with some of these requests. We need to have a telephone discussion of what this does.

Thanks.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Friday, November 16, 2018 11:28 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Ryan

Thanks for this response and for talking through some of the related issues with MF yesterday. Before sharing our response to the Wright-related matters, I wanted to let you know that we are trying to address the hold on Chad McIntosh, which as I mentioned last night, relates to this, and the hold was not lodged by a MI Senator. The fact that we have a hold on McIntosh is illustrative of the challenges EPA faces when asking to confirm any nominees through UC. We will keep you posted. We understand that there is also a blanket hold on ALL nominees for all agencies, but there is nothing we can do on that and assume it will work itself out before sine die. In the meantime, here is our response to the Wright-related matters. As always, we are happy to discuss.

1. **Secret science** Thank you for your effort to memorialize in part the conversations we have had with you, and that TC and AW have had, on this matter. We know your draft letter was a good-faith effort. However, there were some inaccuracies and misunderstandings associated with your draft. Attached is our redline, which you should read on a PC because we tried to explain in comment boxes the reasons for our suggested edits.

2. **Formaldehyde** It does not work for us to move this request into a TSCA RE. That would add 3.5 additional years to an already years-long expensive effort, would not result in a useful product for the non-OCSPP program offices. Moreover, even if you DID consider all conditions of use, you would violate your own (illegal) TSCA rules, and more years-worth of litigation would ensue. What we want is for the IRIS risk assessment for formaldehyde to continue to be processed using the normal IRIS procedures (which I believe were actually written by Nancy Beck when she was at OMB), without additional delay. I do not believe there is middle ground on this request, but if you feel creative, let us know.

3. **Science panels** What we are looking for is a return to your normal procedures (including for how conflicts of interest are assessed) for appointments and reappointments. These procedures are documented in writing at EPA, but EPA is not following them. I understand you mentioned the potential for a compromise involving some specific re-appointments. I would be interested in additional specificity (names, what panel, etc) on that so we can better respond to that offer.

4. **PFAS/CERCLA** We are glad that this is within the scope of your PFAS action plan, and know that it would need to be undertaken by rulemaking and thus could not be completed before the end of the Congress. Could AW make a written commitment to Senator Carper that this will occur and provide a rough timeframe for the NPRM and final agency action? We can edit draft letter language quickly.

5. **FARM** We understand that our staff and yours will engage substantively in coming days/weeks. As part of the conversation RJ and MF had yesterday, she also flagged more systemic concerns about the manner in which the agency engages with us. To that end, I've flagged for both of you, repeatedly, a TA request on cars I submitted about 3 weeks ago that Mandy has told EPA career staff they do not have permission to undertake. I'd like that call to occur early next week. Note that I do not consider this a 'give' on your part – I consider the provision of TA to be the normal manner in which EPA has historically done its job.

Thanks very much

Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, October 22, 2018 11:29 AM
To: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: Peter Wright

To provide a specific update on this and overall update, we are updating and clarifying text for this answer. I'm anticipating getting some final language or simply thumbs up from our program office shortly. I also will provide an update to the EPCRA 304 site on the cites used.

On the accidental releases terminology, our program offices chose that term to distinguish a one-time, inadvertent release from a "continuous release" that "occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes." 40 CFR 302.8(b). There's different reporting requirements under CERCLA 103(f)(2) and EPCRA 304 for continuous releases versus a temporary or accidental or one time one. That's the distinction they report to me they are attempting to make.

On science transparency rules, you may have noticed that the unified regulatory agenda places it further out because of the anticipated time involved on this. The attached draft is an example of what we could provide to answer some specific and overall questions from the Senate about our timing, thoughts, and any path forward.

The formaldehyde study might have a pathway ahead which would be better than sending the study through intra-agency review, but I hope to have an answer on that soon.

On the science boards, there's a track record of board members leaving or not getting reappointed. However, it's not easy to determine why. Maybe they didn't apply or maybe they did. We have reappointed some and accepted new applicants in other cases and can provide that information. We can also provide the nominating individuals too. Some self nominate, but others come from other sources if that's of interest.

Finally, on CERCLA eligibility, we are in the process of putting together our PFAS strategy based on the 6 townhalls and record which closed 3 weeks ago. This is within that process. But also, this will require rulemaking which is not entirely within our control and for this will take a while. Something to get this request narrowed would be worth talking about, I think.

From: Repko, Mary Frances (EPW) [mailto:mary_frances_repko@epw.senate.gov]
Sent: Friday, October 5, 2018 5:47 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE:

Ryan,

We are glad you took down the guidance link from the website, and that is helpful. But there are a few more issues with what the agency's website says now that the guidance is down.

The site says:

EPCRA Reporting Requirements

Do I need to submit an EPCRA report?
No. Based on the criteria for EPCRA section 304 release reporting, air emissions from animal waste (including decomposing animal waste) at a farm do not need to be reported under EPCRA.
Furthermore, the statute excludes farms that only use substances in "routine agricultural operations" from reporting releases of hazardous substances under EPCRA section 304. For more information, please see: EPCRA Q&A.

- While you don't have a link to the guidance doc, the website refers to it by citing the specific criteria under 304. It would be better if the website language were more simple:

  No. The EPA has interpreted the "routine agricultural operations" exemption under EPCRA section 304 to not require reporting from farms. For more information, please see: EPCRA Q&A.

- Also, the website's link to EPCRA 304 talks about accidental releases. That's not a word used in the statute, and certainly EPCRA reporting isn't limited to just accidental releases, but rather to any release that isn't federally permitted and that doesn't fall into one of the exemption categories in the statute.

- Finally, you need to update the links to the CFR on the EPCRA 304 page, since what is linked to is now out of date, having been modified by the CFR changes made to reflect the recent vacature order by the DC Circuit of the 2008 rule.

Hope that's clear,
MF

-----Original Message-----
From: Freedhoff, Michal (EPW)
Sent: Wednesday, October 3, 2018 8:03 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re:

Thanks!

Sent from my iPhone

> On Oct 3, 2018, at 6:40 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> We'll have the changes to the FARM Act website posted within the next 30 minutes.
>
>
>
>
>
>
>
> Ryan Jackson
> Chief of Staff
> U.S. EPA
> 202-564-6999
>

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 11/27/2018 2:58:50 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]
Subject: RE: Peter Wright
Attachments: 11-27-18Secret Science letterEPAtoEPW11-20-18EPWEDITS.docx

The Wehrum letter committed to the future denial of a rulemaking petition before it actually did so, among other commitments made. But in lieu of the first suggested edit, how about this one, which is intended to mirror a commitment to a policy but not specify a rulemaking outcome in a different part of the letter?

Let us know when you want to talk to figure the rest (formaldehyde and PFAS in particular) out. Happy to also share what I'm thinking in terms of process and what we will do to pave the way assuming we get to a good place on the substance.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, November 26, 2018 9:04 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re: Peter Wright

We didn't propose doing credit for exporting ethanol.

Ryan Jackson
Chief of Staff
U.S. EPA
202-564-6999

On Nov 26, 2018, at 7:52 PM, Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov> wrote:

> Why not? You did exactly that for Wehrum/Ernst didn't you?
>
> Sent from my iPhone
>
> On Nov 26, 2018, at 7:42 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> > We cannot put in a letter that the final rule will say something in particular. We cannot accept that last edit.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Wednesday, November 21, 2018 3:21 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Ryan – thanks for the response. We are definitely making progress.

First of all, just to respond to the Goo/SAB/ERRDA issue, the Goo memo explicitly refers to the **pre**-proposal stage, so we continue to think you are out of compliance with ERRDA. There is case law on this point that I imagine your lawyers are well aware of. I think the additions you made to the letter regarding SAB input and the need to re-propose may render this a moot point. Here is the rest (minus FARM)-

1. **Secret science** – added a very minor suggested tweak, and continue to wonder about the RIA. This rule will have impacts on other rules EPA promulgates, so it isn't entirely fair to say that the RIA isn't needed because this rule is only about EPA administration costs. I'd just ask that you think about that one again. But this letter is coming along and we appreciate it.

2. **Formaldehyde** – nothing new here, just waiting for you to get back to us on the pending request.

3. **SAB** – Re-appointing the 8 is very helpful - thanks. Happy to talk to the person you recommend we talk to as well, especially after you and he reviews what I'm including below.

   We want to talk further about process, but are willing to drop the proposal that you abandon the EPA grants conflict of interests thing (which we hate, so abandoning it is an accommodation on our part). When we talk about process, it isn't just about the EPA grants conflict of interest. It's about how recommendations are made for who to appoint. You have 7 SAB members that you're in the process of re-appointing, and a bunch of pending nominees for these slots. Historically, as nominees were being considered, EPA career staff would look at who was leaving and what needs SAB had in the coming year. So, for example, if all 7 departing people were industry people, one would expect the career staff to recognize that the SAB balance would argue for the appointment of new industry people and they would prepare options for new nominees that would be mostly or all industry people. If two of the 7 departing people were the SAB's only epidemiologists, and career staff knew that in the next year the SAB had a ton of epidemiology to do, they would prepare options for new nominees that would ensure the SAB retained its epidemiology capacity. Career staff would send decision-makers some document(s) that described who was leaving, what capacity was being lost, and recommend options for new appointees that addressed concerns that SAB retain diverse and qualified members and maintain core capacity. This Administration seems to have abandoned that process at least for some advisory committees. We'd like you to return to it. Note that decision-makers can choose not to accept the career staff recommendations, but those decision-makers should at least have the benefit of career staff input.

Perhaps you could also include in a commitment letter on this that "EPA will follow its past practice of obtaining information and recommendations from EPA's career staff to ensure that new appointees to EPA's scientific advisory committees are independent, well-qualified, free of conflicts of interest, come from diverse technical and professional backgrounds and possess expertise in areas that the agency anticipates to be relevant in planned or anticipated reviews."

4. **PFAS** – nothing new here, just let us know what that language looks like

5. **TA** – thanks – had a brief call with the staff and sent some follow-up questions in writing. I'd really appreciate fast turnaround, and I tried hard to make them easy questions.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 20, 2018 7:25 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

I think this email is the latest among us. Now, the draft science policy letter is attached. It received the highest level of review. To follow up on the SAB issues, Tom Brennan is the director of the SAB and has been involved in the last two rounds of selections as director. Prior to that, Tom was the deputy for Zarba. He can answer any questions regarding conflict policy, and I can place him on the phone next week.

From: Jackson, Ryan
Sent: Monday, November 19, 2018 7:20 PM
To: 'Freedhoff, Michal (EPW)' <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

So just a couple of points of initial feedback. The draft science policy letter is being reviewed presently. However, for ERDDA compliance we follow the attached.

On the SAB, eight members 3 year terms expired October 1, 2018 and are eligible for reappointment. Those members are Dr. Ken Ramos (Medicine Toxicology) who chairs the Chemical Assessment Advisory Committee, Dr. Jay Turner (Air Quality Engineer) who chairs the Scientific and Technical Achievement Awards Panel, Dr. Sue Marty (Toxicology), Dr. Susan Felter (Toxicology), Dr. Tara Sabo Atwood (Ecotoxicology), Dr. Kenneth Portier (Statistics), Dr. Thomas Parkerton (Ecotoxicology), Dr. Robert Mace (Hydrology). We plan to reappoint them all. Also, on not following our rules, I really have no idea what you are talking about. Other than receiving grants, the conflicts of interest rules are the same. We have given board members notice now in two application processes.

Finally, page 11 of the opinion says that regardless of a proposed or final rule addressing EPCRA that reporting from animal waste is not required under EPCRA due to the FARM Act. That's why I say it caught our attention. In this case, the FARM Act was not enacted at the time. Administrator Pruitt issued guidance relying on the agricultural exemption from reporting. That is and would be a very broad exemption (which is also discussed in the case). The recent proposal we issued doesn't rely on the agricultural exemption. We believe a rulemaking based on that is too broad. We wanted to simply address animal waste emissions. Any kind of tank spill, other emissions, discharge to water, etc are all reportable under EPCRA. An agricultural exemption for that would be inappropriate and probably not supportable. Additionally, as I mentioned we are taking down the agricultural exemption guidance anyway as too broad. That is a policy win for you too.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Monday, November 19, 2018 2:32 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Thanks Ryan

We appreciate the constructive engagement, and have a few thoughts to share in response.

First of all, on McIntosh – we are working to resolve the hold and will let you know if we run into problems. We ran that hotline without doing proactive member outreach because we had socialized it in advance with our LAs, and McIntosh is not a high-profile nominee. The hold is from an off-EPW Member we could not have anticipated. Hopefully it will be fine.

On Wright, we know there is a lot of on and off Committee interest in him, as well as widespread environmental NGO opposition to him. Assuming we get to a good resolution with you, we'll need to treat a potential hotline on him differently than we did for McIntosh, and spend more time proactively describing and selling the package. We would be working in good faith towards a voice vote and would actively help resolve problems if they arise.

Now to your points below:

1. **Secret science** – will look forward to reviewing the next draft. Just as a matter of interest and by way of example, unfortunately, lots of workers were exposed to PCBs and asbestos in the 1950s. It isn't exactly an experiment anyone wants to repeat, but is a way to explain the concern we have about older studies.
2. **Formaldehyde** – The problem with a TSCA-RE-only approach is that OW, OAR and/or OLEM can use an IRIS RA to inform future efforts in their programs because IRIS gets you a toxicity evaluation, including a reference dose/concentration. A TSCA RE doesn't get you that (which doesn't mean a

TSCA RE is not useful – just saying they are different products that are used for different purposes). Appreciate your receptivity here. As I understand the normal 7-step IRIS process, it would be a 30-day EPA review, then a 60-day intra-agency review, then a 60-90 day public review, then back to NAS, and could thus in theory be completed in just over a year. What we want is for the formaldehyde IRIS assessment to be immediately freed up to follow the IRIS process/timelines that are normal. So a letter saying that, and committing to inform TC if any step takes longer than normal, could be one way to go? We can review text in advance as with other efforts.

3. **SAB** – Happy to look at your list. It isn't just the conflict of interest part of the process that we have issue with, but also the manner in which nominees are selected for qualifications and balance that is not being followed
4. **PFAS** – let us know what that language looks like
5. **TA** – thanks
6. **FARM court case** – I am not the subject matter expert on this, but I think you may be making our point for us. That court decision relied on EPA guidance that was not an accurate description of the FARM Act , which is why we were so unhappy with the way EPA was describing the FARM Act.

Thanks again
Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Sunday, November 18, 2018 10:16 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

I can understand initial holds because we are EPA. However, the general perspective is that we plan to answer Republican and Democratic letters. We have, and we will and more. If there's something a member would like, it may take time but we will try to comply. In other words, we want to cooperate with them, but I need to have program directors here to do that.

There's a lot of people who work for Ford. Saying that Chad is responsible for all things Ford is the same as the NYT trying to say that Peter is responsible for all things Dow which also was successfully shot down in that article by Region 5 attorneys and staff who worked with Peter while at Dow. Chad was the director of global environmental policy for Ford when this situation was uncovered meaning he was working on Ford issues in Europe and South America. He never worked on this issue. If he had though, it would have been a good thing for Ford and the community because he would have solved it.

On the letter, we can accept most the suggestions.

- We agree to incorporate sending the proposal to the SAB to review. It would be helpful. We don't believe we have an ERDDA problem. EPA complies with ERDDA outlined in the Goo Memo. Unfortunately, I'm at home so I will send in the morning.

- We can incorporate your changes on retroactivity. The text we provided we believed not only said that but provided the exact language in the proposed rule to illustrate that.
- We can incorporate your changes on PII. However, I don't think it's good for us to rely on a study from the 1950s.
- We can incorporate your changes on the top of the second page on providing legal authority, however, I'm not sure how we will conduct an RIA on internal agency procedures. We don't have an obligation to do that, and I'm not sure how to assess costs within EPA. Additionally, we don't imply. We either say it or not.
- We can incorporate your changes concerning compliance with other laws, although I don't know if we will use those cites and I would have to check the cites. There's one reference that the Clean Air Act requires agencies to do something instead of simply referencing EPA, but I would imagine that's subject to come clean up.

I can send a final draft tomorrow.

On formaldehyde, if you want an IRIS inter-agency process to happen on this which we have no control over, I can agree to that but I need to check with others here. Although Lautenberg allows 3.5 years it doesn't have to take that long. We can conduct a very public risk evaluation for the conditions of use which includes all foreseeable uses in the judgment of the Administrator so yes we can evaluate for all uses. The result of that risk evaluation is regulation. The result of an IRIS review is a nice binder for the shelf which is part of the problem with that program. Additionally, this IRIS study on formaldehyde is something which has been ongoing for about 10 years and has until recently been criticized by the NAS and Congressional appropriations report language for its prior iterations. So yes, let me get back with you as soon as I'm able with probably an acceptance of this one too. We don't believe this is the way to approach a review of formaldehyde.

On the SAB, we are applying the same conflicts of interest rules we have always applied with the exception that if you are receiving a grant from EPA you unable to serve on the SAB. However, the specific offer was that there are 8 SAB members which have completed their first term. We propose reappointing all 8. I can provide their names tomorrow.

On PFAS, I need to check if we can lift the current draft language to send, but if we can we will accept this.

Finally, we can make a couple staff available to talk about off cycle and air conditioning credits for an hour? Let me know when works to do that. Also, I'm slow on getting a very recent federal district court case to you. It's in the 9th Circuit so maybe it doesn't matter on appeal, but the 9th Circuit is a big place. Regardless, we noticed it.

However, THE question I'm going to get when I take all this back is what do we get for doing this especially with word of a hold on Chad especially because we do have a problem with some of these requests. We need to have a telephone discussion of what this does.

Thanks.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Friday, November 16, 2018 11:28 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Ryan

Thanks for this response and for talking through some of the related issues with MF yesterday. Before sharing our response to the Wright-related matters, I wanted to let you know that we are trying to address the hold on Chad McIntosh, which as I mentioned last night, relates to this, and the hold was not lodged by a MI Senator. The fact that we have a hold on McIntosh is illustrative of the challenges EPA faces when asking to confirm any nominees through UC. We will keep you posted. We understand that there is also a blanket hold on ALL nominees for all agencies, but there is nothing we can do on that and assume it will work itself out before sine die. In the meantime, here is our response to the Wright-related matters. As always, we are happy to discuss.

1. **Secret science** Thank you for your effort to memorialize in part the conversations we have had with you, and that TC and AW have had, on this matter. We know your draft letter was a good-faith effort. However, there were some inaccuracies and misunderstandings associated with your draft. Attached is our redline, which you should read on a PC because we tried to explain in comment boxes the reasons for our suggested edits.

2. **Formaldehyde** It does not work for us to move this request into a TSCA RE. That would add 3.5 additional years to an already years-long expensive effort, would not result in a useful product for the non-OCSPP program offices. Moreover, even if you DID consider all conditions of use, you would violate your own (illegal) TSCA rules, and more years-worth of litigation would ensue. What we want is for the IRIS risk assessment for formaldehyde to continue to be processed using the normal IRIS procedures (which I believe were actually written by Nancy Beck when she was at OMB), without additional delay. I do not believe there is middle ground on this request, but if you feel creative, let us know.

3. **Science panels** What we are looking for is a return to your normal procedures (including for how conflicts of interest are assessed) for appointments and reappointments. These procedures are documented in writing at EPA, but EPA is not following them. I understand you mentioned the potential for a compromise involving some specific re-appointments. I would be interested in additional specificity (names, what panel, etc) on that so we can better respond to that offer.

4. **PFAS/CERCLA** We are glad that this is within the scope of your PFAS action plan, and know that it would need to be undertaken by rulemaking and thus could not be completed before the end of the Congress. Could AW make a written commitment to Senator Carper that this will occur and provide a rough timeframe for the NPRM and final agency action? We can edit draft letter language quickly.

5. **FARM** We understand that our staff and yours will engage substantively in coming days/weeks. As part of the conversation RJ and MF had yesterday, she also flagged more systemic concerns about the manner in which the agency engages with us. To that end, I've flagged for both of you, repeatedly, a TA request on cars I submitted about 3 weeks ago that Mandy has told EPA career staff they do not have permission to undertake. I'd like that call to occur early next week. Note that I do not consider this a 'give' on your part – I consider the provision of TA to be the normal manner in which EPA has historically done its job.

Thanks very much

Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, October 22, 2018 11:29 AM
To: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: Peter Wright

To provide a specific update on this and overall update, we are updating and clarifying text for this answer. I'm anticipating getting some final language or simply thumbs up from our program office shortly. I also will provide an update to the EPCRA 304 site on the cites used.

On the accidental releases terminology, our program offices chose that term to distinguish a one-time, inadvertent release from a "continuous release" that "occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes." 40 CFR 302.8(b). There's different reporting requirements under CERCLA 103(f)(2) and EPCRA 304 for continuous releases versus a temporary or accidental or one time one. That's the distinction they report to me they are attempting to make.

On science transparency rules, you may have noticed that the unified regulatory agenda places it further out because of the anticipated time involved on this. The attached draft is an example of what we could provide to answer some specific and overall questions from the Senate about our timing, thoughts, and any path forward.

The formaldehyde study might have a pathway ahead which would be better than sending the study through intra-agency review, but I hope to have an answer on that soon.

On the science boards, there's a track record of board members leaving or not getting reappointed. However, it's not easy to determine why. Maybe they didn't apply or maybe they did. We have reappointed some and accepted new applicants in other cases and can provide that information. We can also provide the nominating individuals too. Some self nominate, but others come from other sources if that's of interest.

Finally, on CERCLA eligibility, we are in the process of putting together our PFAS strategy based on the 6 townhalls and record which closed 3 weeks ago. This is within that process. But also, this will require rulemaking which is not entirely within our control and for this will take a while. Something to get this request narrowed would be worth talking about, I think.

From: Repko, Mary Frances (EPW) [mailto:mary_frances_repko@epw.senate.gov]
Sent: Friday, October 5, 2018 5:47 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE:

Ryan,

We are glad you took down the guidance link from the website, and that is helpful. But there are a few more issues with what the agency's website says now that the guidance is down.

The site says:

EPCRA Reporting Requirements

Do I need to submit an EPCRA report?
No. Based on the criteria for EPCRA section 304 release reporting, air emissions from animal waste (including decomposing animal waste) at a farm do not need to be reported under EPCRA.
Furthermore, the statute excludes farms that only use substances in "routine agricultural operations" from reporting releases of hazardous substances under EPCRA section 304. For more information, please see: EPCRA Q&A.

- While you don't have a link to the guidance doc, the website refers to it by citing the specific criteria under 304. It would be better if the website language were more simple:

  No. The EPA has interpreted the "routine agricultural operations" exemption under EPCRA section 304 to not require reporting from farms. For more information, please see: EPCRA Q&A.

- Also, the website's link to EPCRA 304 talks about accidental releases. That's not a word used in the statute, and certainly EPCRA reporting isn't limited to just accidental releases, but rather to any release that isn't federally permitted and that doesn't fall into one of the exemption categories in the statute.

- Finally, you need to update the links to the CFR on the EPCRA 304 page, since what is linked to is now out of date, having been modified by the CFR changes made to reflect the recent vacature order by the DC Circuit of the 2008 rule.

Hope that's clear,
MF

-----Original Message-----
From: Freedhoff, Michal (EPW)
Sent: Wednesday, October 3, 2018 8:03 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re:

Thanks!

Sent from my iPhone

> On Oct 3, 2018, at 6:40 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> We'll have the changes to the FARM Act website posted within the next 30 minutes.
>
>
>
>
>
>
>
> Ryan Jackson
> Chief of Staff
> U.S. EPA
> 202-564-6999
>

Dear Senator Carper,

I appreciate your interest in the U.S. Environmental Protection Agency (EPA) proposed rule, "Strengthening Transparency in Regulatory Science," and the opportunity to respond to some of your concerns.

The intent of the proposed rule is to establish procedures for strengthening the transparency and reproducibility of scientific information underlying significant EPA actions. Specifically, the proposal seeks to ensure that the data and models underlying EPA regulatory science are "publicly available in a manner sufficient for validation and analysis."[1] The proposal was designed to enhance existing policies on scientific transparency and public access to data in a way that builds public trust and understanding of EPA's regulatory decision making. As I am sure you will agree, under the principles of community right to know, it is important for the EPA to make public the scientific information we use in our rulemaking process.

Since the rule was proposed in April 2018, EPA has received a variety of public feedback that require careful consideration. EPA held a public hearing on July 17, 2018 in Washington, D.C. that hosted nearly 100 speakers, including members of Congress. During the 108-day public comment period, EPA also received over 597,000 written comments, of which over 9,200 are individual, unique comments.[2] EPA, with contractor assistance, is currently in the process of reviewing the unique comments and preparing a summary of those comments to inform the agency's internal regulatory development workgroup's next steps which will include review of the proposal by EPA's Science Advisory Board.

While EPA has received a host of questions on the proposal that are still under thoughtful consideration, I want to address some of the more prevalent questions related to the applicability of the rule and protections for personal information. In the first instance, any reading of the proposed rule should not be understood to apply to scientific studies that pre-date the proposal. Although EPA has received many public comments, consistent with the proposal, we believe it is the best policy to not apply the rule retroactively to studies and science which pre-date the rule. In regard to questions about protection of personal information, nothing in the text of the proposal would compel disclosure of confidential or private information. In fact, the proposed rule reinforces existing legal and ethical protections of such information. The proposal states, "[w]here the Agency is making data or models publicly available, it shall do so in a fashion that is consistent with law, protects privacy, confidentiality, confidential business information, and is sensitive to national and homeland security."[3] I commit to a policy that ensures that in instances in which EPA has determined that disclosing a study's underlying data may implicitly or explicitly identify such information, it will not publicly disclose the data, but will nevertheless fully consider the study during the rule development process.

Given the scope and volume of public comments, the Agency's review process cannot be rushed, and EPA has a significant amount of work ahead to fully consider and develop any final action. As with all

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[1] 83 Fed. Reg. 18871, April 30, 2018.

[2] [HYPERLINK "https://www.regulations.gov/document?D=EPA-HQ-OA-2018-0259-0001"]

[3] 83 Fed. Reg. 18873, April 30, 2018

rulemakings issued by EPA, any final action must be based on our statutory authority and a robust, sound record. Where EPA determines further analyses, information or legal authority is needed to support a particular final action, the Agency will issue a supplemental notice seeking further public comment. Based on our preliminary analysis of the comments reviewed, I expect that EPA will need to issue one or more supplemental notices and solicitations of comment. This future process will likely include a specific legal analysis of the statutory provisions that provide EPA with the authority to take action in this area as well as an analysis of relevant case law that EPA relied upon to support the rule. The supplemental notice will also address comments filed in response to the original proposal that question whether the proposal is consistent with all provisions of all statutes that EPA administers.

I commit that as the EPA moves forward with its consideration of this proposal, the Agency will ensure that it has complied with all applicable laws, including the Administrative Procedure Act and all of EPA's organic statutes, as well as executive orders, that govern the rule-making process. Further, I commit that the Agency's implementation and use of this rule will comply with the Administrative Procedure Act and Clean Air Act[4], which require agencies to consider[5] and respond[6] to all significant information presented to them pursuant to a rulemaking, as well as statutes that mandate the use of the best available science, such as the Toxic Substances Control Act[7] and Safe Drinking Water Act[8].

I appreciate your interest in this proposed rule, and commit to working with your office to provide as much information and briefings as we can provide, and to keep your office fully updated concerning this rulemaking.

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[4] 42 U.S.C. §4607(d)(3) and (6)
[5] 5 U.S.C. §553
[6] *Home Box Office, Inc. v. F.C.C.*, 567 F.2d 9, 35–36 (D.C. Cir. 1977)
[7] 15 U.S.C. 2625(h)
[8] 42 U.S.C. § 300g-1(b)(3)(A)

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 11/21/2018 8:21:15 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]
CC: Lyons, Troy [lyons.troy@epa.gov]; Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Subject: RE: Peter Wright
Attachments: Secret Science letterEPAtoEPW11-20-18EPWEDITS.docx

Ryan – thanks for the response. We are definitely making progress.

First of all, just to respond to the Goo/SAB/ERRDA issue, the Goo memo explicitly refers to the **pre**-proposal stage, so we continue to think you are out of compliance with ERRDA. There is case law on this point that I imagine your lawyers are well aware of. I think the additions you made to the letter regarding SAB input and the need to re-propose may render this a moot point. Here is the rest (minus FARM)-

1. **Secret science** – added a very minor suggested tweak, and continue to wonder about the RIA. This rule will have impacts on other rules EPA promulgates, so it isn't entirely fair to say that the RIA isn't needed because this rule is only about EPA administration costs. I'd just ask that you think about that one again. But this letter is coming along and we appreciate it.

2. **Formaldehyde** – nothing new here, just waiting for you to get back to us on the pending request.

3. **SAB** – Re-appointing the 8 is very helpful - thanks. Happy to talk to the person you recommend we talk to as well, especially after you and he reviews what I'm including below.

   We want to talk further about process, but are willing to drop the proposal that you abandon the EPA grants conflict of interests thing (which we hate, so abandoning it is an accommodation on our part). When we talk about process, it isn't just about the EPA grants conflict of interest. It's about how recommendations are made for who to appoint. You have 7 SAB members that you're in the process of re-appointing, and a bunch of pending nominees for these slots. Historically, as nominees were being considered, EPA career staff would look at who was leaving and what needs SAB had in the coming year. So, for example, if all 7 departing people were industry people, one would expect the career staff to recognize that the SAB balance would argue for the appointment of new industry people and they would prepare options for new nominees that would be mostly or all industry people. If two of the 7 departing people were the SAB's only epidemiologists, and career staff knew that in the next year the SAB had a ton of epidemiology to do, they would prepare options for new nominees that would ensure the SAB retained its epidemiology capacity. Career staff would send decision-makers some document(s) that described who was leaving, what capacity was being lost, and recommend options for new appointees that addressed concerns that SAB retain diverse and qualified members and maintain core capacity. This Administration seems to have abandoned that process at least for some advisory committees. We'd like you to return to it. Note that decision-makers can choose not to accept the career staff recommendations, but those decision-makers should at least have the benefit of career staff input.

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4. **PFAS** – nothing new here, just let us know what that language looks like

5. **TA** – thanks – had a brief call with the staff and sent some follow-up questions in writing. I'd really appreciate fast turnaround, and I tried hard to make them easy questions.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 20, 2018 7:25 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

I think this email is the latest among us. Now, the draft science policy letter is attached. It received the highest level of review. To follow up on the SAB issues, Tom Brennan is the director of the SAB and has been involved in the last two rounds of selections as director. Prior to that, Tom was the deputy for Zarba. He can answer any questions regarding conflict policy, and I can place him on the phone next week.

From: Jackson, Ryan
Sent: Monday, November 19, 2018 7:20 PM
To: 'Freedhoff, Michal (EPW)' <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

So just a couple of points of initial feedback. The draft science policy letter is being reviewed presently. However, for ERDDA compliance we follow the attached.

On the SAB, eight members 3 year terms expired October 1, 2018 and are eligible for reappointment. Those members are Dr. Ken Ramos (Medicine Toxicology) who chairs the Chemical Assessment Advisory Committee, Dr. Jay Turner (Air Quality Engineer) who chairs the Scientific and Technical Achievement Awards Panel, Dr. Sue Marty (Toxicology), Dr. Susan Felter (Toxicology), Dr. Tara Sabo Atwood (Ecotoxicology), Dr. Kenneth Portier (Statistics), Dr. Thomas Parkerton (Ecotoxicology), Dr. Robert Mace (Hydrology). We plan to reappoint them all. Also, on not following our rules, I really have no idea what you are talking about. Other than receiving grants, the conflicts of interest rules are the same. We have given board members notice now in two application processes.

Finally, page 11 of the opinion says that regardless of a proposed or final rule addressing EPCRA that reporting from animal waste is not required under EPCRA due to the FARM Act. That's why I say it caught our attention. In this case, the FARM Act was not enacted at the time. Administrator Pruitt issued guidance relying on the agricultural exemption from reporting. That is and would be a very broad exemption (which is also discussed in the case). The recent proposal we issued doesn't rely on the agricultural exemption. We believe a rulemaking based on that is too broad. We wanted to simply address animal waste emissions. Any kind of tank spill, other emissions, discharge to water, etc are all reportable under EPCRA. An agricultural exemption for that would be inappropriate and probably not supportable. Additionally, as I mentioned we are taking down the agricultural exemption guidance anyway as too broad. That is a policy win for you too.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Monday, November 19, 2018 2:32 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>

Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Thanks Ryan

We appreciate the constructive engagement, and have a few thoughts to share in response.

First of all, on McIntosh – we are working to resolve the hold and will let you know if we run into problems. We ran that hotline without doing proactive member outreach because we had socialized it in advance with our LAs, and McIntosh is not a high-profile nominee. The hold is from an off-EPW Member we could not have anticipated. Hopefully it will be fine.

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Now to your points below:

1. **Secret science** – will look forward to reviewing the next draft. Just as a matter of interest and by way of example, unfortunately, lots of workers were exposed to PCBs and asbestos in the 1950s. It isn't exactly an experiment anyone wants to repeat, but is a way to explain the concern we have about older studies.
2. **Formaldehyde** – The problem with a TSCA-RE-only approach is that OW, OAR and/or OLEM can use an IRIS RA to inform future efforts in their programs because IRIS gets you a toxicity evaluation, including a reference dose/concentration. A TSCA RE doesn't get you that (which doesn't mean a TSCA RE is not useful – just saying they are different products that are used for different purposes). Appreciate your receptivity here. As I understand the normal 7-step IRIS process, it would be a 30-day EPA review, then a 60-day intra-agency review, then a 60-90 day public review, then back to NAS, and could thus in theory be completed in just over a year. What we want is for the formaldehyde IRIS assessment to be immediately freed up to follow the IRIS process/timelines that are normal. So a letter saying that, and committing to inform TC if any step takes longer than normal, could be one way to go? We can review text in advance as with other efforts.
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Thanks again
Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Sunday, November 18, 2018 10:16 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

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On the letter, we can accept most the suggestions.

- We agree to incorporate sending the proposal to the SAB to review. It would be helpful. We don't believe we have an ERDDA problem. EPA complies with ERDDA outlined in the Goo Memo. Unfortunately, I'm at home so I will send in the morning.
- We can incorporate your changes on retroactivity. The text we provided we believed not only said that but provided the exact language in the proposed rule to illustrate that.
- We can incorporate your changes on PII. However, I don't think it's good for us to rely on a study from the 1950s.
- We can incorporate your changes on the top of the second page on providing legal authority, however, I'm not sure how we will conduct an RIA on internal agency procedures. We don't have an obligation to do that, and I'm not sure how to assess costs within EPA. Additionally, we don't imply. We either say it or not.
- We can incorporate your changes concerning compliance with other laws, although I don't know if we will use those cites and I would have to check the cites. There's one reference that the Clean Air Act requires agencies to do something instead of simply referencing EPA, but I would imagine that's subject to come clean up.

I can send a final draft tomorrow.

On formaldehyde, if you want an IRIS inter-agency process to happen on this which we have no control over, I can agree to that but I need to check with others here. Although Lautenberg allows 3.5 years it doesn't have to take that long. We can conduct a very public risk evaluation for the conditions of use which includes all foreseeable uses in the judgment of the Administrator so yes we can evaluate for all uses. The result of that risk evaluation is regulation. The result of an IRIS review is a nice binder for the shelf which is part of the problem with that program. Additionally, this IRIS study on formaldehyde is something which has been ongoing for about 10 years and has until recently been criticized by the NAS and Congressional appropriations report language for its prior iterations. So yes, let me get back with you as soon as I'm able with probably an acceptance of this one too. We don't believe this is the way to approach a review of formaldehyde.

On the SAB, we are applying the same conflicts of interest rules we have always applied with the exception that if you are receiving a grant from EPA you unable to serve on the SAB. However, the specific offer was that there are 8 SAB members which have completed their first term. We propose reappointing all 8. I can provide their names tomorrow.

On PFAS, I need to check if we can lift the current draft language to send, but if we can we will accept this.

Finally, we can make a couple staff available to talk about off cycle and air conditioning credits for an hour? Let me know when works to do that. Also, I'm slow on getting a very recent federal district court case to you. It's in the 9th Circuit so maybe it doesn't matter on appeal, but the 9th Circuit is a big place. Regardless, we noticed it.

However, THE question I'm going to get when I take all this back is what do we get for doing this especially with word of a hold on Chad especially because we do have a problem with some of these requests. We need to have a telephone discussion of what this does.

Thanks.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Friday, November 16, 2018 11:28 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Ryan

Thanks for this response and for talking through some of the related issues with MF yesterday. Before sharing our response to the Wright-related matters, I wanted to let you know that we are trying to address the hold on Chad McIntosh, which as I mentioned last night, relates to this, and the hold was not lodged by a MI Senator. The fact that we have a hold on McIntosh is illustrative of the challenges EPA faces when asking to confirm any nominees through UC. We will keep you posted. We understand that there is also a blanket hold on ALL nominees for all agencies, but there is nothing we can do on that and assume it will work itself out before sine die. In the meantime, here is our response to the Wright-related matters. As always, we are happy to discuss.

1. **Secret science** Thank you for your effort to memorialize in part the conversations we have had with you, and that TC and AW have had, on this matter. We know your draft letter was a good-faith effort. However, there were some inaccuracies and misunderstandings associated with your draft. Attached is our redline, which you should read on a PC because we tried to explain in comment boxes the reasons for our suggested edits.

2. **Formaldehyde** It does not work for us to move this request into a TSCA RE. That would add 3.5 additional years to an already years-long expensive effort, would not result in a useful product for the non-OCSPP program offices. Moreover, even if you DID consider all conditions of use, you would violate your own (illegal) TSCA rules, and more years-worth of litigation would ensue. What we want is for the IRIS risk assessment for formaldehyde to continue to be processed using the normal IRIS procedures (which I believe were actually written by Nancy Beck when she was at OMB), without additional delay. I do not believe there is middle ground on this request, but if you feel creative, let us know.

3. **Science panels** What we are looking for is a return to your normal procedures (including for how conflicts of interest are assessed) for appointments and reappointments. These procedures are documented in writing at EPA, but EPA is not following them. I understand you mentioned the potential for a compromise involving some specific re-appointments. I would be interested in additional specificity (names, what panel, etc) on that so we can better respond to that offer.

4. **PFAS/CERCLA** We are glad that this is within the scope of your PFAS action plan, and know that it would need to be undertaken by rulemaking and thus could not be completed before the end of the Congress. Could AW make a written commitment to Senator Carper that this will occur and provide a rough timeframe for the NPRM and final agency action? We can edit draft letter language quickly.

5. **FARM** We understand that our staff and yours will engage substantively in coming days/weeks. As part of the conversation RJ and MF had yesterday, she also flagged more systemic concerns about the manner in which the agency engages with us. To that end, I've flagged for both of you, repeatedly, a TA request on cars I submitted about 3 weeks ago that Mandy has told EPA career staff they do not have permission to undertake. I'd like that call to occur early next week. Note that I do not consider this a 'give' on your part – I consider the provision of TA to be the normal manner in which EPA has historically done its job.

Thanks very much

Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, October 22, 2018 11:29 AM
To: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: Peter Wright

To provide a specific update on this and overall update, we are updating and clarifying text for this answer. I'm anticipating getting some final language or simply thumbs up from our program office shortly. I also will provide an update to the EPCRA 304 site on the cites used.

On the accidental releases terminology, our program offices chose that term to distinguish a one-time, inadvertent release from a "continuous release" that "occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes." 40 CFR 302.8(b). There's different reporting requirements under CERCLA 103(f)(2) and EPCRA 304 for continuous releases versus a temporary or accidental or one time one. That's the distinction they report to me they are attempting to make.

On science transparency rules, you may have noticed that the unified regulatory agenda places it further out because of the anticipated time involved on this. The attached draft is an example of what we could provide to answer some specific and overall questions from the Senate about our timing, thoughts, and any path forward.

The formaldehyde study might have a pathway ahead which would be better than sending the study through intra-agency review, but I hope to have an answer on that soon.

On the science boards, there's a track record of board members leaving or not getting reappointed. However, it's not easy to determine why. Maybe they didn't apply or maybe they did. We have reappointed some and accepted new applicants in other cases and can provide that information. We can also provide the nominating individuals too. Some self nominate, but others come from other sources if that's of interest.

Finally, on CERCLA eligibility, we are in the process of putting together our PFAS strategy based on the 6 townhalls and record which closed 3 weeks ago. This is within that process. But also, this will require rulemaking which is not entirely within our control and for this will take a while. Something to get this request narrowed would be worth talking about, I think.

From: Repko, Mary Frances (EPW) [mailto:mary_frances_repko@epw.senate.gov]
Sent: Friday, October 5, 2018 5:47 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE:

Ryan,

We are glad you took down the guidance link from the website, and that is helpful. But there are a few more issues with what the agency's website says now that the guidance is down.

The site says:

EPCRA Reporting Requirements

Do I need to submit an EPCRA report?
No. Based on the criteria for EPCRA section 304 release reporting, air emissions from animal waste (including decomposing animal waste) at a farm do not need to be reported under EPCRA.
Furthermore, the statute excludes farms that only use substances in "routine agricultural operations" from reporting releases of hazardous substances under EPCRA section 304. For more information, please see: EPCRA Q&A.

- While you don't have a link to the guidance doc, the website refers to it by citing the specific criteria under 304. It would be better if the website language were more simple:

  No. The EPA has interpreted the "routine agricultural operations" exemption under EPCRA section 304 to not require reporting from farms. For more information, please see: EPCRA Q&A.

- Also, the website's link to EPCRA 304 talks about accidental releases. That's not a word used in the statute, and certainly EPCRA reporting isn't limited to just accidental releases, but rather to any release that isn't federally permitted and that doesn't fall into one of the exemption categories in the statute.

- Finally, you need to update the links to the CFR on the EPCRA 304 page, since what is linked to is now out of date, having been modified by the CFR changes made to reflect the recent vacature order by the DC Circuit of the 2008 rule.

Hope that's clear,
MF

-----Original Message-----
From: Freedhoff, Michal (EPW)
Sent: Wednesday, October 3, 2018 8:03 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re:

Thanks!

Sent from my iPhone

> On Oct 3, 2018, at 6:40 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> We'll have the changes to the FARM Act website posted within the next 30 minutes.
>
>
>
>
>
>
>
> Ryan Jackson

> Chief of Staff
> U.S. EPA
> 202-564-6999
>

Dear Senator Carper,

I appreciate your interest in the U.S. Environmental Protection Agency (EPA) proposed rule, "Strengthening Transparency in Regulatory Science," and the opportunity to respond to some of your concerns.

The intent of the proposed rule is to establish procedures for strengthening the transparency and reproducibility of scientific information underlying significant EPA actions. Specifically, the proposal seeks to ensure that the data and models underlying EPA regulatory science are "publicly available in a manner sufficient for validation and analysis."[1] The proposal was designed to enhance existing policies on scientific transparency and public access to data in a way that builds public trust and understanding of EPA's regulatory decision making. As I am sure you will agree, under the principles of community right to know, it is important for the EPA to make public the scientific information we use in our rulemaking process.

Since the rule was proposed in April 2018, EPA has received a variety of public feedback that require careful consideration. EPA held a public hearing on July 17, 2018 in Washington, D.C. that hosted nearly 100 speakers, including members of Congress. During the 108-day public comment period, EPA also received over 597,000 written comments, of which over 9,200 are individual, unique comments.[2] EPA, with contractor assistance, is currently in the process of reviewing the unique comments and preparing a summary of those comments to inform the agency's internal regulatory development workgroup's next steps which will include review of the proposal by EPA's Science Advisory Board.

While EPA has received a host of questions on the proposal that are still under thoughtful consideration, I want to address some of the more prevalent questions related to the applicability of the rule and protections for personal information. In the first instance, any reading of the proposed rule should not be understood to apply to scientific studies that pre-date the proposal. Although EPA has received many public comments, consistent with the proposal, we believe it is the best policy to not apply the rule retroactively to studies and science which pre-date the rule, and the final rule will reflect that policy. In regard to questions about protection of personal information, nothing in the text of the proposal would compel disclosure of confidential or private information. In fact, the proposed rule reinforces existing legal and ethical protections of such information. The proposal states, "[w]here the Agency is making data or models publicly available, it shall do so in a fashion that is consistent with law, protects privacy, confidentiality, confidential business information, and is sensitive to national and homeland security."[3] I commit to ensure that in instances in which EPA has determined that disclosing a study's underlying data may implicitly or explicitly identify such information, it will not publicly disclose the data, but will nevertheless fully consider the study during the rule development process.

Given the scope and volume of public comments, the Agency's review process cannot be rushed, and EPA has a significant amount of work ahead to fully consider and develop any final action. As with all

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[1] 83 Fed. Reg. 18871, April 30, 2018.

[2] [HYPERLINK "https://www.regulations.gov/document?D=EPA-HQ-OA-2018-0259-0001"]

[3] 83 Fed. Reg. 18873, April 30, 2018

rulemakings issued by EPA, any final action must be based on our statutory authority and a robust, sound record. Where EPA determines further analyses, information or legal authority is needed to support a particular final action, the Agency will issue a supplemental notice seeking further public comment. Based on our preliminary analysis of the comments reviewed, I expect that EPA will need to issue one or more supplemental notices and solicitations of comment. This future process will likely include a specific legal analysis of the statutory provisions that provide EPA with the authority to take action in this area as well as an analysis of relevant case law that EPA relied upon to support the rule. The supplemental notice will also address comments filed in response to the original proposal that question whether the proposal is consistent with all provisions of all statutes that EPA administers.

I commit that as the EPA moves forward with its consideration of this proposal, the Agency will ensure that it has complied with all applicable laws, including the Administrative Procedure Act and all of EPA's organic statutes, as well as executive orders, that govern the rule-making process. Further, I commit that the Agency's implementation and use of this rule will comply with the Administrative Procedure Act and Clean Air Act[4], which require agencies to consider[5] and respond[6] to all significant information presented to them pursuant to a rulemaking, as well as statutes that mandate the use of the best available science, such as the Toxic Substances Control Act[7] and Safe Drinking Water Act[8].

I appreciate your interest in this proposed rule, and commit to working with your office to provide as much information and briefings as we can provide, and to keep your office fully updated concerning this rulemaking.

---

[4] 42 U.S.C. §4607(d)(3) and (6)
[5] 5 U.S.C. §553
[6] *Home Box Office, Inc. v. F.C.C.*, 567 F.2d 9, 35–36 (D.C. Cir. 1977)
[7] 15 U.S.C. 2625(h)
[8] 42 U.S.C. § 300g-1(b)(3)(A)

Message

From: Brent Fewell [brent.fewell@earthandwatergroup.com]
Sent: 11/15/2018 6:29:30 PM
To: Dickerson, Aaron [dickerson.aaron@epa.gov]; Penman, Crystal [Penman.Crystal@epa.gov]
CC: Jackson, Ryan [jackson.ryan@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]
Subject: Request for Meeting with NAWC leadership
Attachments: ATT00001.txt

Hi Aaron/Crystal,

I'm circling back on a possible joint meeting with Acting Administrator Wheeler and Assistant Administrator Ross, early in the new year. I appreciate it may be difficult to align schedules, but thought if worth requesting nonetheless in the event stars (and schedules) align. NAWC representatives would include Rob Powelson, President and CEO, and David Stanton, President, Suez NA and NAWC board chair. Rob and David would welcome the opportunity to introduce themselves and engage with EPA leadership, among other things, alignment of NAWC and EPA priorities and opportunities to address aging infrastructure and supporting communities with sustainable water provisions.

If aligning schedules with the Acting Administrator gets too complicated, we'd be very pleased to meet with David Ross and his leadership team. The following days work best for Rob and David, who would be traveling to DC for the meeting.

Wednesday, January 9th
Friday, January 11th
Friday, January 18th
Mon-Wed, Jan 21-23

Many thanks for your assistance in helping schedule a meeting.

Brent

Brent Fewell, Esq. | Earth & Water Law Group
1455 Pennsylvania Ave., NW, Suite 400, Washington, DC 20004
(202) 280-6362 (o) Ex. 6 www.earthandwatergroup.com

LinkedIn

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Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 11/19/2018 8:48:38 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]
Subject: RE: Peter Wright

I'm just trying to understand process because I don't - no blame attached to the question. With a rule, OMB has to agree to take it before you send it. Is it like that? Or can you send it to inter-agency and it just may be that the agencies ignore you?

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, November 19, 2018 3:40 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re: Peter Wright

I'm saying interagency is out of my control. I'm blaming no one. I'm stating fact.

Ryan Jackson
Chief of Staff
U.S. EPA
202-564-6999

On Nov 19, 2018, at 3:37 PM, Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov> wrote:

> Just so I understand - On IRIS, I think the next step to be conducted is the internal EPA review, which you can clearly do on your own. After that, you're saying that OMB has to agree in order to proceed further and EPA can't just share it w agency counterparts?
>
> Michal Ilana Freedhoff, Ph.D.
> Director of Oversight
> Committee on Environment and Public Works Democratic Staff
>
> ---
>
> **From:** Jackson, Ryan <jackson.ryan@epa.gov>
> **Sent:** Monday, November 19, 2018 3:30 PM
> **To:** Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
> **Cc:** Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
> **Subject:** Re: Peter Wright

Just to get back with you really quickly. My point is that interagency requires an OMB process like a rule making.

Ryan Jackson
Chief of Staff
U.S. EPA
202-564-6999

On Nov 19, 2018, at 2:32 PM, Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov> wrote:

Thanks Ryan

We appreciate the constructive engagement, and have a few thoughts to share in response.

First of all, on McIntosh – we are working to resolve the hold and will let you know if we run into problems. We ran that hotline without doing proactive member outreach because we had socialized it in advance with our LAs, and McIntosh is not a high-profile nominee. The hold is from an off-EPW Member we could not have anticipated. Hopefully it will be fine.

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Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Sunday, November 18, 2018 10:16 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
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- We can incorporate your changes on PII. However, I don't think it's good for us to rely on a study from the 1950s.

- We can incorporate your changes on the top of the second page on providing legal authority, however, I'm not sure how we will conduct an RIA on internal agency procedures. We don't have an obligation to do that, and I'm not sure how to assess costs within EPA. Additionally, we don't imply. We either say it or not.
- We can incorporate your changes concerning compliance with other laws, although I don't know if we will use those cites and I would have to check the cites. There's one reference that the Clean Air Act requires agencies to do something instead of simply referencing EPA, but I would imagine that's subject to come clean up.

I can send a final draft tomorrow.

On formaldehyde, if you want an IRIS inter-agency process to happen on this which we have no control over, I can agree to that but I need to check with others here. Although Lautenberg allows 3.5 years it doesn't have to take that long. We can conduct a very public risk evaluation for the conditions of use which includes all foreseeable uses in the judgment of the Administrator so yes we can evaluate for all uses. The result of that risk evaluation is regulation. The result of an IRIS review is a nice binder for the shelf which is part of the problem with that program. Additionally, this IRIS study on formaldehyde is something which has been ongoing for about 10 years and has until recently been criticized by the NAS and Congressional appropriations report language for its prior iterations. So yes, let me get back with you as soon as I'm able with probably an acceptance of this one too. We don't believe this is the way to approach a review of formaldehyde.

On the SAB, we are applying the same conflicts of interest rules we have always applied with the exception that if you are receiving a grant from EPA you unable to serve on the SAB. However, the specific offer was that there are 8 SAB members which have completed their first term. We propose reappointing all 8. I can provide their names tomorrow.

On PFAS, I need to check if we can lift the current draft language to send, but if we can we will accept this.

Finally, we can make a couple staff available to talk about off cycle and air conditioning credits for an hour? Let me know when works to do that. Also, I'm slow on getting a very recent federal district court case to you. It's in the 9th Circuit so maybe it doesn't matter on appeal, but the 9th Circuit is a big place. Regardless, we noticed it.

However, THE question I'm going to get when I take all this back is what do we get for doing this especially with word of a hold on Chad especially because we do have a problem with some of these requests. We need to have a telephone discussion of what this does.

Thanks.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Friday, November 16, 2018 11:28 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW)

<Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Ryan

Thanks for this response and for talking through some of the related issues with MF yesterday. Before sharing our response to the Wright-related matters, I wanted to let you know that we are trying to address the hold on Chad McIntosh, which as I mentioned last night, relates to this, and the hold was not lodged by a MI Senator. The fact that we have a hold on McIntosh is illustrative of the challenges EPA faces when asking to confirm any nominees through UC. We will keep you posted. We understand that there is also a blanket hold on ALL nominees for all agencies, but there is nothing we can do on that and assume it will work itself out before sine die. In the meantime, here is our response to the Wright-related matters. As always, we are happy to discuss.

1. **Secret science** Thank you for your effort to memorialize in part the conversations we have had with you, and that TC and AW have had, on this matter. We know your draft letter was a good-faith effort. However, there were some inaccuracies and misunderstandings associated with your draft. Attached is our redline, which you should read on a PC because we tried to explain in comment boxes the reasons for our suggested edits.

2. **Formaldehyde** It does not work for us to move this request into a TSCA RE. That would add 3.5 additional years to an already years-long expensive effort, would not result in a useful product for the non-OCSPP program offices. Moreover, even if you DID consider all conditions of use, you would violate your own (illegal) TSCA rules, and more years-worth of litigation would ensue. What we want is for the IRIS risk assessment for formaldehyde to continue to be processed using the normal IRIS procedures (which I believe were actually written by Nancy Beck when she was at OMB), without additional delay. I do not believe there is middle ground on this request, but if you feel creative, let us know.

3. **Science panels** What we are looking for is a return to your normal procedures (including for how conflicts of interest are assessed) for appointments and reappointments. These procedures are documented in writing at EPA, but EPA is not following them. I understand you mentioned the potential for a compromise involving some specific re-appointments. I would be interested in additional specificity (names, what panel, etc) on that so we can better respond to that offer.

4. **PFAS/CERCLA** We are glad that this is within the scope of your PFAS action plan, and know that it would need to be undertaken by rulemaking and thus could not be completed before the end of the Congress. Could AW make a written commitment to Senator Carper that this will occur and provide a rough timeframe for the NPRM and final agency action? We can edit draft letter language quickly.

5. **FARM** We understand that our staff and yours will engage substantively in coming days/weeks. As part of the conversation RJ and MF had yesterday, she also flagged more systemic concerns about the manner in which the agency engages with us. To that end, I've flagged for both of you, repeatedly, a TA request on cars I submitted about 3 weeks ago that Mandy has told EPA career

staff they do not have permission to undertake. I'd like that call to occur early next week. Note that I do not consider this a 'give' on your part – I consider the provision of TA to be the normal manner in which EPA has historically done its job.

Thanks very much

Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, October 22, 2018 11:29 AM
To: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: Peter Wright

To provide a specific update on this and overall update, we are updating and clarifying text for this answer. I'm anticipating getting some final language or simply thumbs up from our program office shortly. I also will provide an update to the EPCRA 304 site on the cites used.

On the accidental releases terminology, our program offices chose that term to distinguish a one-time, inadvertent release from a "continuous release" that "occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes." 40 CFR 302.8(b). There's different reporting requirements under CERCLA 103(f)(2) and EPCRA 304 for continuous releases versus a temporary or accidental or one time one. That's the distinction they report to me they are attempting to make.

On science transparency rules, you may have noticed that the unified regulatory agenda places it further out because of the anticipated time involved on this. The attached draft is an example of what we could provide to answer some specific and overall questions from the Senate about our timing, thoughts, and any path forward.

The formaldehyde study might have a pathway ahead which would be better than sending the study through intra-agency review, but I hope to have an answer on that soon.

On the science boards, there's a track record of board members leaving or not getting reappointed. However, it's not easy to determine why. Maybe they didn't apply or maybe they did. We have reappointed some and accepted new applicants in other cases and can provide that information. We can also provide the nominating individuals too. Some self nominate, but others come from other sources if that's of interest.

Finally, on CERCLA eligibility, we are in the process of putting together our PFAS strategy based on the 6 townhalls and record which closed 3 weeks ago. This is within that process. But also, this will require rulemaking which is not entirely within our control and for this will take a while. Something to get this request narrowed would be worth talking about, I think.

From: Repko, Mary Frances (EPW) [mailto:mary_frances_repko@epw.senate.gov]
Sent: Friday, October 5, 2018 5:47 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE:

Ryan,

We are glad you took down the guidance link from the website, and that is helpful. But there are a few more issues with what the agency's website says now that the guidance is down.

The site says:

EPCRA Reporting Requirements

Do I need to submit an EPCRA report?
No. Based on the criteria for EPCRA section 304 release reporting, air emissions from animal waste (including decomposing animal waste) at a farm do not need to be reported under EPCRA.
Furthermore, the statute excludes farms that only use substances in "routine agricultural operations" from reporting releases of hazardous substances under EPCRA section 304. For more information, please see: EPCRA Q&A.

- While you don't have a link to the guidance doc, the website refers to it by citing the specific criteria under 304. It would be better if the website language were more simple:

  No. The EPA has interpreted the "routine agricultural operations" exemption under EPCRA section 304 to not require reporting from farms. For more information, please see: EPCRA Q&A.

- Also, the website's link to EPCRA 304 talks about accidental releases. That's not a word used in the statute, and certainly EPCRA reporting isn't limited to just accidental releases, but rather to any release that isn't federally permitted and that doesn't fall into one of the exemption categories in the statute.

- Finally, you need to update the links to the CFR on the EPCRA 304 page, since what is linked to is now out of date, having been modified by the CFR changes made to reflect the recent vacature order by the DC Circuit of the 2008 rule.

Hope that's clear,
MF

-----Original Message-----
From: Freedhoff, Michal (EPW)
Sent: Wednesday, October 3, 2018 8:03 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re:

Thanks!

Sent from my iPhone

> On Oct 3, 2018, at 6:40 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> We'll have the changes to the FARM Act website posted within the next 30 minutes.
>
>
>
>
>
>
>
> Ryan Jackson
> Chief of Staff
> U.S. EPA
> 202-564-6999
>

Message

From: Brent Fewell [brent.fewell@earthandwatergroup.com]
Sent: 11/8/2018 1:19:17 PM
To: Wheeler, Andrew [wheeler.andrew@epa.gov]
CC: Dickerson, Aaron [dickerson.aaron@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]; Molina, Michael [molina.michael@epa.gov]
Subject: Request for Meeting with Rob Powelson
Attachments: ATT00001.txt

Hi Andrew,

I'm reaching out to see if you'd be willing to meet with Rob Powelson, who as you may know recently departed FERC take the reins of the National Association of Water Companies. The meeting would be introductory in nature. Rob is still located in Philadelphia, so he would be traveling to DC and could be available the following dates if they work for you, December 6, 11, 18, 19.

Chris Franklin, CEO of Aqua America, would also likely be joining. It would be great to have Dave Ross join the meeting as well, if he's available. Rob has not had not met Dave yet and is still meeting key water leaders during this transition period.

Many thanks for your consideration.

Brent

Brent Fewell, Esq. | Earth & Water Law Group
1455 Pennsylvania Ave., NW, Suite 400, Washington, DC 20004
(202) 280-6362 (o) Ex. 6 www.earthandwatergroup.com

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Message

From: Natasha John [njohn@nnwo.org]
Sent: 10/26/2018 4:11:13 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Meeting request for Next week on EPA tribal issues

Hi Ryan,

I hope you are doing well. You may remember me from being on the Oklahoma State Society board during Jennifer Bowman's Presidency.

I wanted to reach out to see if you have any availability next week to talk about EPA and tribal issues.

Thanks,
Natasha John

--
Natasha John, M.A.
Government and Legislative Affairs Associate
Navajo Nation Washington Office
Office: 202-682-7390
Direct: 202-847-4804
Ex. 6
njohn@nnwo.org

Message

From: Zukewich, Melissa A. [MAZukewi@scj.com]
on behalf of Semrau, Kelly M. [KMSemrau@scj.com]
Sent: 10/31/2018 1:57:12 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: SC Johnson Signs Groundbreaking International Commitment to Tackle the Plastic Pollution Crisis

Dear Ryan,

I'm delighted to share with you steps SC Johnson announced this week to further our progress to reduce plastic waste and boost plastic recycling and reuse. We are proud to help lead the charge to end the global ocean plastic crisis and create a circular economy for plastics.

SC Johnson has a longstanding commitment to preserving the environment and we have been working to improve the sustainability and circularity of our plastic products for more than a decade. Yet collection and recycling practices aren't currently keeping up with plastic use. That's why we believe it's so important to make sure plastic is managed responsibly throughout its lifecycle, and we're taking steps to help.

At the 2018 Our Ocean Conference in Indonesia on Monday, our Chairman and CEO, Fisk Johnson, joined Dame Ellen MacArthur and Erik Solheim of the United Nations Environment Programme to sign The New Plastics Economy Global Commitment. The Commitment's goal is to address the root causes of plastic pollution and give companies a common vision for creating a circular economy for plastics.

In support of the Commitment, SC Johnson announced we will triple the amount of post-consumer recycled (PCR) plastic content in SC Johnson packaging by 2025. We also shared details of the progress we've already made, including eliminating 9.5 million kilograms of materials from our packaging since 2011.

We also announced that we're partnering with Plastic Bank to open eight new recycling centers in Indonesia. Each center will have a minimum capacity of 100 metric tons of plastic per year and is expected to provide opportunities for hundreds of local waste collectors. The program will also educate the local community about the growing threat of plastic pollution and opportunities to recycle locally. We're thrilled that through this program, we can help keep plastic out of the ocean while providing social and financial benefits to local families.

At SC Johnson, we work every day to live up to our long-standing commitment to do what's right for people and the planet. From our comprehensive ingredient selection program, to our investments to fight deforestation, to our ongoing efforts to minimize our footprint, we take seriously the responsibility of leaving the world better for future generations.

I'm excited about our initiatives to reduce plastic pollution. I look forward to sharing more about them as our efforts progress.

Sincerely,

Kelly M. Semrau
Senior Vice President – Global Corporate Affairs, Communication & Sustainability

Message

From: Blue Prism [contact@blueprism.info]
Sent: 3/26/2019 1:07:46 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Blue Prism World - One week till this one of a kind RPA event

Hi Ryan,

We are all fired up here at Blue Prism and getting ready to welcome you to our flagship event Blue Prism World. After months of planning we are looking forward to putting on a great event

for you packed with superb speakers, cutting edge sponsors and most importantly the chance to have some fun and network with a huge RPA community, at the Blue Prism after party.

We've focused on pulling together a line up that is going to appeal to business leaders and technical leaders alike, and the focus of excitement from our own executive team reflects this.

Our CEO Alastair Bathgate commented that he's really eager to hear from a fellow digital disruptor ***'I'm looking forward to hearing Martha Lane Fox talk about the future of digital entrepreneurship. That's where Blue Prism is focused with our vision of connected-RPA, and the impact on the future of work can't be under-estimated'.***

Dave Moss, CTO and co-founder at Blue Prism is highly anticipating the closing session of the conference from Gartner, ***'I'm really interested to hear Derek Miers and Gartner's perspective on how organisations can leverage their own innovators to address the digital disruption taking place across the technology industry - a theme that resonates strongly with the Blue Prism connected-RPA vision'.***

With the last remaining spaces up for grabs, now is the time to book your place for this one of a kind RPA event in London. Book your tickets today and join us for two days of insight, innovation and education.

We look forward so having you join us,

Regards,

The Blue Prism team

contact@blueprism.com

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Japan: 14F Kamiyacho MT Building, 4-3-20, Toranomon, Minato-ku, Tokyo 105-0001
Singapore: MBFC Tower 3 Level, 17-01 12 Marina Boulevard, Singapore, 018982
United Kingdom: Prism One, 2 Cinnamon Park, Crab Lane, Warrington, WA2 0XP, England

This email was sent to jackson.ryan@epa.gov. If you no longer wish to receive these emails you may unsubscribe at any time.

Message

From: Tom Davis [Ex. 6]
Sent: 11/8/2018 1:18:30 PM
To: Rose Greg (FCA) [greg.rose@fcagroup.com]; Jacqueline Fidler [jacquiefidler@consolenergy.com]; Annabeth Reitter [annabeth.reitter@domtar.com]; Heather D. Daniels [heather.d.daniels@lmco.com]; Valora Putnam [valora.putnam@medtronic.com]; Danyelle Phelps [danyelle.phelps@owenscorning.com]; Jason C. Pertoso [jason.pertoso@shire.com]; Daniel Hutter [daniel.hutter@spectrumbrands.com]; Tejas Bhatt [tejas.bhatt@walmart.com]; Leah Rozin [leah.rozin@isscorporatesolutions.com]; Chris Hansen [chris.hansen@riteaid.com]; Catharine de Lacy [Ex. 6] Joseph Tell [jtell@tellevate.com]; Nick Steinke [nsteinke@tellevate.com]; Maram Salaheldin [msalaheldin@tellevate.com]; Michael J. Linder [mike.linder@koleyjessen.com]; Scott Walsh [scott.a.walsh@gmail.com]; Frank Friedman [Ex. 6]; Grevatt, Peter [Grevatt.Peter@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]; Carol Singer Neuvelt [carol@naem.org]; Ernie Rosenberg [contact@ernierosenberg.com]; Scott Fulton [fulton@eli.org]; Andrew R. Stewart [astewart@sidley.com]; Alyson Genovese [genovese@globalreporting.org]
Subject: Fw: IMPORTANT: Guest Access Code for Your Upcoming event at the National Press Club
Attachments: QRCode; ATT00001.txt

Please see attached. You will need the code for access to the Press Club.

Tom Davis

Ex. 6

----- Forwarded Message -----
From: Cara Lanza <clanza@press.org>
To: Tom Davis [Ex. 6]
Sent: Tuesday, November 6, 2018, 3:16:11 PM EST
Subject: IMPORTANT: Guest Access Code for Your Upcoming event at the National Press Club

We look forward to your upcoming event at the National Press Club!

The National Press Club is a secure facility. All visitors must have a valid access code to pass through the security gates on the 13th Floor. This email contains your Group Access Code that will enable your guests and staff to enter the Press Club to attend your event. **You will need to send this access code to ALL registrants, guest and staff who will be on-site for your event**. To help you with this, I have provided a sample email template/example below which you can use to send this to your attendees/staff.

PLEASE ENCOURAGE YOUR GUESTS TO PRESENT THE CODE ON THEIR MOBILE DEVICE (not printed).

Should you have any questions please feel free to contact me. Thanks and we look forward to seeing you for your event!

----SAMPLE EMAIL TO BE USED TO SEND ACCESS CODE TO YOUR ATTENDEES/STAFF ------

To: **XYZ Event** Attendees

Re: Access to Venue for **XYZ Event**

We look forward to seeing you at our upcoming event at The National Press Club!

The National Press Club is a secure facility all attendees/staff must have a valid QR code to pass through security gates at the entrance of the Club to attend the event.

ALL GUESTS MUST HAVE A VALID CODE TO ENTER THE FACILITY. Simply present the Access Code below on your mobile device at the turnstiles located on the 13th floor of the Press Club to enter.

Lanza,

Cara Lanza of Members-National Press Club (NA) has pre-registered you in our visitor management system for your upcoming meeting.

For your convenience, the details of your meeting are shown below:

Invitee:	corpenviro.Lanza (clanza@press.org)
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Floor:	13th Floor
Date/Time of Visit:	11/13/2018 12:01 AM to 11/14/2018 11:59 PM
QR Code:	Please present the QR code at the top of this message when you arrive at the building.
Company Instructions:	Present this email on your mobile device, at the turnstiles located on the 13th floor. QR code is required for entry.
Special Instructions:	corp enviro

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Message

From: Environmental Law360 [news-q2@law360.com]
Sent: 10/26/2018 7:38:36 AM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] Donziger Is Thumbing His Nose At Injunction, Chevron Says

ENVIRONMENTAL

Friday, October 26, 2018

TOP NEWS

Donziger Is Thumbing His Nose At Injunction, Chevron Says

Chevron Corp. has asked a New York federal judge for strong sanctions against attorney Steven Donziger, saying he has been selling interests in a fraudulent $9.5 billion judgment in Ecuador over pollution in the Amazon for his own gain despite court judgments prohibiting him from profiting from the judgment. Read full article »

EPA Seeks To Stall States' Fight Over Landfill Emissions

The U.S. Environmental Protection Agency urged a California federal judge Thursday to hold off deciding whether to toss claims it violated the Clean Air Act by failing to impose Obama-era regulations limiting emissions from municipal landfills, arguing newly proposed emission rules could impact the suit. Read full article »

9th Circ. Changes Mind On Grand Canyon Uranium Mine Claim

The Ninth Circuit issued an opinion Thursday to replace the court's December ruling that backed a lower court's decision to shoot down challenges from a Native American tribe and environmental groups to a uranium mining project near the Grand Canyon, reviving the groups' claim under the Federal Land Policy and Management Act. Read full article »

Youths Lack Standing In Climate Suit, Feds Tell Justices

The federal government has urged the U.S. Supreme Court to halt trial proceedings in a suit brought by a group of young people accusing the government of setting policies that worsen climate change, saying the plaintiffs lack standing and the matter is political in nature. Read full article »

NY AG Seeks Judge's Recusal In Exxon Climate Fraud Suit

New York Attorney General Barbara Underwood on Wednesday asked a state judge to recuse himself from overseeing her lawsuit accusing ExxonMobil of concealing climate change-related business risks from

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investors, arguing that he owns stock in the oil giant and can't be impartial. Read full article »

POLICY & REGULATION

Enviros Say Fla. Gov.'s Conflicts Bar Power Plant Vote

The Sierra Club on Thursday sought to bar Florida Gov. Rick Scott from casting a vote on a proposed Florida Power & Light Co. natural gas power plant due to his "financial entanglements" with the fossil fuel industry. Read full article »

LITIGATION

Mich., Ford Deal As Toxic As Industrial Dumping, Judge Told

Michigan's environmental quality agency, attorney general and Ford Motor Co. teamed up to rig a "sue and settle" plan in 2017 to let Ford off easy for its decades of dumping toxic chemicals into its neighbors' backyards, a group of residents told a Michigan federal judge Wednesday. Read full article »

Pa. Green Amendment A Wild Card For Energy Cos., Attys Say

The Pennsylvania Supreme Court's recent ruling reaffirming constitutional protections on clean air, pure water and environmental preservation continues to confound oil and gas operators as they try and determine how it could impact their activities, according to a panel of attorneys speaking at an industry conference in Pittsburgh. Read full article »

Exxon, Chevron, Others Keep Gas Additive Suit In Fed. Court

A Maryland federal judge on Wednesday rejected the state's bid to remand to state court its lawsuit accusing 65 companies including BP America Inc., Chevron Corp., Exxon Mobil Corp. and 7-Eleven Inc. of contaminating the state's waters with a gasoline additive. Read full article »

EXPERT ANALYSIS

4 Years Of WIFIA: What Works, What Doesn't And P3 Potential

Enacted in 2014 to promote financing and development of water projects, the Water Infrastructure Finance and Innovation Act was initially intended as a five-year pilot program. Four years later, it is now a promising vehicle for water project development, says Roger Rosendahl of Nelson Mullins Riley & Scarborough LLP. Read full article »

Breaking The Rules: 3 Ways To 'Lead' A Direct Examination

Trial lawyers are frequently taught that they should appear invisible during direct examination — that their job is merely to prompt the witness to start speaking. But the most powerful direct examinations are the ones in which the examiner, not the witness, is controlling the pace, say attorneys with Kobre & Kim LLP. Read full article »

LEGAL INDUSTRY

Coming Monday: Law360's Access To Justice

Law360 is on a mission to explore important, and often overlooked, issues that impact individuals' ability to navigate a complex legal system. We are proud to announce our weekly Access to Justice newsletter, which will launch Monday and be free of charge to all readers. Read full article »

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COMPANIES

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American Society of Civil Engineers
Aqua America Inc.
Cargill Inc.

Law Firms Support Trans Community Following HHS Memo

At least four large law firms have signed on to a letter voicing support for the transgender community following the leak of a U.S. Department of Health and Human Services memo arguing for a new, more narrow definition of gender that excludes transgender, nonbinary and intersex people. Read full article »

Google CLO Allegedly Had An Affair With Subordinate

The chief legal officer of Google's parent company allegedly had an extramarital affair with a subordinate in the legal department, who was then moved to another division after the company learned of the relationship, according to a report published Thursday. Read full article »

How Does Ginsburg Tackle Cases? 'I Start With The Judges'

U.S. Supreme Court Justice Ruth Bader Ginsburg offered rare insight into her approach to cases in a conversation with D.C. Circuit Judge David B. Tatel on Wednesday evening, explaining why she always reads lower court opinions before turning to the parties' briefs and what type of submissions often end up in her "skip" pile. Read full article »

Senator Refers Kavanaugh Accuser, Avenatti For Investigation

The chair of the Senate Judiciary Committee referred one of the women who accused U.S. Supreme Court Justice Brett Kavanaugh of sexual misconduct and her attorney Michael Avenatti for criminal prosecution Thursday, the second time the lawmaker has taken such an action in the wake of the hotly contested nomination. Read full article »

Excessive Attys' Fee Bids Can Backfire, Judges Say

A prevailing party seeking to recover legal fees should resist asking for excessive or unnecessary hours, federal judges said in a panel discussion Thursday, with one jurist noting such entries send up a red flag that makes him "skeptical of the entire application." Read full article »

Law Student Pleads Guilty To CyberStalking Georgetown Alum

A former University of Texas law student has pled guilty to cyberstalking a Georgetown University Law Center alumnus after the school denied his application, the U.S. Department of Justice announced Wednesday. Read full article »

Ex-W.Va. Supreme Court Justice's Law License Annulled

A former justice on West Virginia's highest court had his license to practice law annulled earlier this month after pleading guilty to a federal wire fraud charge connected to his personal use of a state-owned vehicle and gas credit card. Read full article »

Law360's Weekly Verdict: Legal Lions & Lambs

Jenner & Block and Barnes & Thornburg top this week's legal lions list with a major win for fantasy sports platforms in a lawsuit over college athletes' likenesses, while Fish & Richardson ended up on the legal lambs list after a jury concluded its client, Walmart, willfully infringed a smaller rival's trademark. Read full article »

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Pennsylvania Supreme Court
Port Authority of New York & New Jersey
U.S. Attorney's Office
U.S. Department of Agriculture
U.S. Department of Health and Human Services
U.S. Department of Justice
U.S. Department of the Interior
U.S. Environmental Protection Agency
U.S. Supreme Court

Legal Administrative Assistant - College Graduate
Filcro Legal
New York, New York

Compliance and Government Investigations Associate
Bass Berry & Sims
Washington, District of Columbia

Litigation Paralegal
Aylstock, Witkin, Kreis & Overholtz
Pensacola, Florida

Matrimonial Litigation Director
Law Offices of Jeffery M. Leving, Ltd.
Chicago, Illinois

Patent Attorneys
Greenblum & Bernstein, P.L.C.
Reston, Virginia

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Message

From: Forsgren, Lee [Forsgren.Lee@epa.gov]
Sent: 3/26/2019 12:03:01 AM
To: Caron, Christopher [Ccaron@steptoe.com]
CC: Jackson, Ryan [jackson.ryan@epa.gov]; Goheen, LeeAnn [lgoheen@steptoe.com]; Mejias, Melissa [mejias.melissa@epa.gov]; Penman, Crystal [Penman.Crystal@epa.gov]
Subject: Re: Per Our Call: Language attached.....

Chris,

Crystal Penman handles my calendar. She can find a time that works for everyone.

Regards,
Lee

Sent from my iPhone

On Mar 25, 2019, at 6:42 PM, Caron, Christopher <Ccaron@steptoe.com> wrote:

> Sir:
>
> I appreciate it. I will speak with my colleague and see if we can't come up with some dates.
>
> Is there someone in your office I should work with to get this on your schedule, or would you prefer we do this directly on email?
>
> v/r,
>
> Chris

Christopher Caron
Director
Steptoe
Steptoe & Johnson LLP
1330 Connecticut Avenue
Washington, DC 20036

Direct: 202-429-1374
Ex. 6

From: Forsgren, Lee [mailto:Forsgren.Lee@epa.gov]
Sent: Monday, March 25, 2019 6:34 PM
To: Jackson, Ryan
Cc: Caron, Christopher
Subject: Re: Per Our Call: Language attached.....

Chris,

We would be happy to meet with you on the issue.

Regards,

Lee

Sent from my iPhone

Message

From: Melissa Shute [mshut@equinor.com]
Sent: 11/2/2018 8:14:05 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Can you give me a call

On my cell when you get a chance? Ex. 6

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Thank you

Message

From: SEIA Policy Summit [reply@seia.org]
Sent: 10/25/2018 3:00:38 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Registration discount for agency staff!

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Message

From: Use of Blockchain In Government Workshop III [Training@BlockchaInGov.org]
Sent: 11/5/2018 7:13:31 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] Just Announced: Blockchain in Government Workshop III - Increased Traction

Please Review and Forward to Others in Your Organization

Blockchain in Government Workshop III:
Getting Comfortable and Observing Increased Traction and Use

Demystifying Blockchain: What You Need to Know About Blockchain, the Use Cases Being Explored, and How it May be Used in Government to Securely Meet Business Needs

Presented by:
Potomac Forum, Ltd
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Wednesday, December 5, 2018
Willard InterContinental Hotel
Washington, D.C.

For Information or Registration
Call: 703 683-1613
info@PotomacForum.org

Early Bird Reduced Registration Until Nov. 16th

Overview:
Potomac Forum Blockchain I and II Workshops were a great success. Students requested a follow up Workshop in a Blockchain series. This is the third Workshop in our Blockchain Series.

Commonly described as the "next great disrupter," Blockchain technology is the "new Internet". While there are challenges associated with widespread use, its potential is drawing heavy interest and investment from both commercial and government leaders around the world. Primarily known as the technology underlying Bitcoin, the strengths of Blockchain's "distributed ledger" include increased transparency, speed, and increased security.

Federal agencies are currently funding and building use cases to explore the potential of Blockchain and distributed ledger technologies. Potential applications of the technology continue to expand as government moves toward adoption of the technology to increase efficiencies, trim costs, and increase transparency, and improve security in their operations.

Driven by the advantages of Blockchain and efforts for government transparency and the DATA Act, there are numerous Blockchain use cases that agencies are considering that touch many parts and processes of an organization, including:

- **Financial management and services**
- **Procurement**
- **IT asset and supply chain management**
- **Smart contracts**
- **Patents, Trademarks Copyrights, Royalties**
- **Identity management and government-issued credentials like visas, passports, SSN and birth certificates**
- **Federal personnel workforce data**
- **Appropriated funds**
- **Federal assistance and foreign aid delivery**
- **Health IT including medical technology, healthcare records and healthcare delivery**

This Potomac Forum Training Workshop will provide you with practical explanations, "real world" examples and technical resources to help you understand the development of Blockchain.

What You Will Learn:
- **Fundamentals of Blockchain and Distributed Ledger Technology**
- **Beyond the Basics - Steps in the Implementation**
- **How Blockchain works, and how it applies to government processes**
- **Key Blockchain use cases and proof of concepts within government**
- **A government-focused Blockchain Playbook providing use case assessment, organizational readiness, selection options, implementation, integration and security**
- **Examples of Blockchain use "outside the beltway" (including other Governments) and why**

Why You Should Attend:

- **Understand Blockchain and how it can be used in government**
- **Improve your knowledge of an exploding technology that is currently in use today within government**
- **Be better equipped to support acquisition decisions including pilots and proof of concepts**
- **Build communities of interest in your agency and across agencies, and where to join**
- **Craft new strategies for improving business processes and government operations**

Who Should Attend:

- **Federal Government Executives, Managers and staff who are interested in learning about Blockchain and how it can be used in government (and where it is being used today)**
- **Government Executives, Managers and staff responsible for implementing Agency restructuring plans, and how to get to learning fast with effective pilots and small proof of concepts**
- **Federal employees or members of employee affinity groups**
- **Technology leaders and technology implementers**
- **CXOs**
- **IGs and Staff**
- **State and local Government Executives, Managers and staff i**
- **Industry Partners who support the government**

Early Bird Reduced Registration Until November 16th

&

Special "Send-A-Team" Registration Fees
For Multiple Students from the Same Government Office

Workshop Is Open to
Federal, State and Local Government Employees
and Industry Partners

Press is NOT Permitted
to Encourage Candid Discussion

Registration and Information:

Call: (703) 683-1613
Info@PotomacForum.org

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Thank You.

This email was sent to: jackson.ryan@epa.gov

Go here to leave this mailing list or modify your email profile.
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Potomac Forum, Ltd.

This email was sent by: **Potomac Forum, Ltd.**
2800 Eisenhower Avenue , Alexandria , Virginia, 22314 , USA

Message

From: Kessler, Rick [Rick.Kessler@mail.house.gov]
Sent: 11/7/2018 6:06:21 PM
To: Carroll, Jeff [Jeff.Carroll@mail.house.gov]
CC: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re:

Thank you, sir.

Rick Kessler
Senior Advisor
Committee on Energy and Commerce Sent from my iPhone

On Nov 7, 2018, at 12:44 PM, Carroll, Jeff <Jeff.Carroll@mail.house.gov> wrote:

> Thanks
>
> Jeff Carroll
> Energy and Commerce Committee
> Democratic Staff Director
> (202) 225-3641
>
> On Nov 7, 2018, at 10:16 AM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> > Sorry, Rick. Typed too fast.
> >
> > **From:** jackson.ryan@epa.gov
> > **Date:** November 7, 2018 at 10:13:20 AM EST
> > **To:** jeff.carroll@mail.house.gov, rick.kesler@mail.house.gov
> >
> > Congratulations, gentlemen.
> >
> > Ryan Jackson
> > Chief of Staff
> > U.S. EPA
> > 202-564-6999

Message

From: Ryan Jackson Ex. 6
Sent: 10/28/2018 1:06:33 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: EPA's Return To Rigorous Cost-Benefit Analysis Continues With Impending Methane-Rule Revision - Forbes

I thought you'd like this:
https://www.forbes.com/sites/wlf/2018/10/25/epas-return-to-rigorous-cost-benefit-analysis-continues-with-impending-methane-rule-revision/

Ryan Jackson

Message

From: Tom Davis Ex. 6
Sent: 11/1/2018 8:36:44 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Nov 13 Roundtable

Hi,
I know you are busy and were concerned about travel schedules....think you will be able to join us on 13th for libations and dinner?
Tom

Tom Davis

Ex. 6

Message

From: Lagda, Jeffrey [Lagda.Jeffrey@epa.gov]
Sent: 10/25/2018 2:55:59 PM
To: jonathan.burks@mail.house.gov; andy.speth@mail.house.gov; kiel.weaver@mail.house.gov
CC: Jackson, Ryan [jackson.ryan@epa.gov]; Lyons, Troy [lyons.troy@epa.gov]; Moody, Christina [Moody.Christina@epa.gov]; Sheehan, Charles [Sheehan.Charles@epa.gov]; Larsen, Alan [Larsen.Alan@epa.gov]; Kaplan, Jennifer [Kaplan.Jennifer@epa.gov]; Elbaum, Kentia [elbaum.kentia@epa.gov]; Ware, Rochelle [Ware.Rochelle@epa.gov]; Mears, Gilbert [Mears.Gilbert@epa.gov]
Subject: EPA OIG Letter to Speaker Ryan - Federal Vacancies Reform Act
Attachments: EPA OIG Letter to Ryan - Federal Vacancies Reform Act.pdf

Importance: High

Hi Jonathan, Andy and Kiel:

Good morning! As required by the Federal Vacancies Reform Act, I am transmitting a memo/notice of vacancy to the Speaker of the House.

If you have any questions, please contact me.

Would you please confirm receipt?

Thanks,

Jeff

Jeffrey A. Lagda
Congressional and Media Liaison
Office of Congressional and Public Affairs - Office of Inspector General
U.S. Environmental and Protection Agency
1301 Constitution Ave. NW, Rm 3102
Washington, DC 20460
202-566-2584
Lagda.Jeffrey@epa.gov

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
INSPECTOR GENERAL

OCT 24 2018

The Honorable Paul Ryan
Speaker of the House of Representatives
Washington, D.C. 20515

Dear Mr. Speaker:

As provided by the Federal Vacancies Reform Act, at 5 U.S.C. 3349, I am submitting the enclosed notice of vacancy created by the retirement of Arthur A. Elkins Jr. as Inspector General of the U.S. Environmental Protection Agency.

If you should have any questions on this or any other matter, please contact Jennifer Kaplan, Deputy Assistant Inspector General for Congressional and Public Affairs, at (202) 566-0918.

Sincerely,

Alan S. Larsen
Counsel to the Inspector General

Enclosure

cc: Andrew Wheeler, Acting Administrator, U.S. Environmental Protection Agency
Charles J. Sheehan, Acting Inspector General, U.S. Environmental Protection Agency

Submission Under the Federal Vacancies Reform Act

Addressees

● President of the United States Senate ● Speaker of the U.S. House of Representatives ● Comptroller General of the United States

This Report Provides Notification of:

● Vacancy ● Designation of acting officer ○ Nomination ○ Action on nomination

○ Change in previously submitted reported information ○ Discontinuation of service in acting role (date: _____)

Name of Department or Agency and Any Suborganization

Environmental Protection Agency Office of Inspector General

Vacancy Title	Date Vacancy Began
Inspector General	10/13/18

Name of Acting Officer	Date Service Began	Authority for Acting Designation if Other Than Vacancies Act
Charles J. Sheehan	10/15/18	

Name of Nominee for Position	Date Nomination Submitted
None nominated	

Action on Nomination: ○ Confirmed ○ Rejected, withdrawn, returned

Date of Action

Agency Contact

Name and Title

Darryl Mason, Assistant to the Inspector General

Contact's Address

1200 Pennsylvania Ave. NW, Washington DC 20460

Contact's Phone Number	Contact's E-Mail Address
(202) 566-0871	larsen.alan@epa.gov

Submitted By

Name and Title	Telephone Number
Alan S. Larsen Counsel to the Inspector General	(202) 566-2391

Signature	Date
	10/23/18

For Congressional Use Only

Committee of Jurisdiction

Date Received

For GAO Use Only

GAO Control Number

2/8/00

Message

From: David Schwietert [DSchwietert@autoalliance.org]
Sent: 10/26/2018 8:57:27 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Wheeler, Andrew [wheeler.andrew@epa.gov]; Wehrum, Bill [Wehrum.Bill@epa.gov]; Gunasekara, Mandy [Gunasekara.Mandy@epa.gov]
Subject: Auto Alliance comments

I wanted to ensure you had the following preview of the more expansive comments that will be submitted by the close of the comment period today.

I will also ensure you get the 15-page summary and the related comments once they are transmitted.

Dave

Automakers Call for CAFE/GHG Progress Reflecting Marketplace

The Auto Alliance will be submitting comments by the end of today (Friday, Oct. 26) to NHTSA and EPA on the Safer Affordable Fuel-efficient (SAFE) Vehicles Rule for MYs 2021-2026. Here is a preview of those comments, and the full executive summary will be available on Monday, Oct. 29:

"The Alliance has consistently and actively supported a single national program covering all 50 states that spurs continued improvements in fuel economy and greenhouse gas (GHG) emissions while recognizing marketplace realities such as consumer choice, fuel prices and technology costs.

"Automakers have invested substantially in technologies so consumers can visit dealerships and select from approximately 500 models that achieve 30 MPG or more (highway), including 45 hybrid-electric and over 50 plug-in electric and hydrogen fuel cell models.

"With respect to fuel economy and GHG emissions, automakers are committed to ongoing progress in a journey with no end date. That commitment has not wavered. At the same time, future government mileage and emission standards need to align with marketplace realities. The CAFE and GHG programs evaluate automakers based on a sales-weighted average of vehicles sold, not on models offered for sale.

"The Alliance appreciates NHTSA and EPA issuing a joint Proposed Rule that incorporates the latest data and will consider standards for MYs 2021 to 2026. Many of the projections and assumptions upon which MYs 2022-2025 standards were based have proven to be incorrect; the level of technology modeled by the agencies in 2012 is insufficient to meet the standards, and the actual level of technology that industry projects is needed to comply with the standards is misaligned with market realities. Data from the past few years have also disproven assumptions regarding the market share of cars and trucks, future gas price projections, and the adoption rate of alternative powertrain vehicles.

"The Alliance remains committed to supporting One National Program. This program was developed in cooperation by NHTSA, EPA, California and automakers, and was based on the shared recognition that harmonized standards that maintained the authorities of all agencies were the best path forward.

"The Alliance urges the federal government to set achievable future standards that continue to advance environmental and energy goals while recognizing marketplace realities, incentivizing innovative new technologies, harmonizing government programs, maintaining a strong auto manufacturing sector, and keeping new vehicles affordable so more Americans can replace older vehicles with newer models that are cleaner, safer, and more energy-efficient."

# # #

David Schwietert
Executive Vice President, Federal Government Relations & Public Policy
P: 202-326-5521 | dschwietert@autoalliance.org

ALLIANCE OF AUTOMOBILE MANUFACTURERS
803 7th Street, NW
Suite 300
Washington, DC 20001
Main Phone: 202-326-5500
Main Fax: 202-326-5567

https://autoalliance.org/

Curious to know how the Auto sector impacts your state or district -- Click here. To get a better understanding of how America's automobile industry is one of the most powerful engines driving the U.S. economy, click here.

Message

From: Tom Davis Ex. 6
Sent: 11/6/2018 2:46:00 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]; Alyson Genovese [genovese@globalreporting.org]; Tejas Bhatt [tejas.bhatt@walmart.com]; Nick Steinke [nsteinke@tellevate.com]; Michael J. Linder [mike.linder@koleyjessen.com]; Andrew R. Stewart [astewart@sidley.com]; Frank Friedman Ex. 6 Scott Fulton [fulton@eli.org]; Jackson, Ryan [jackson.ryan@epa.gov]; Scott Walsh Ex. 6 Maram Salaheldin [msalaheldin@tellevate.com]; Joseph Tell [jtell@tellevate.com]; Leah Rozin [leah.rozin@isscorporatesolutions.com]; marks@eli.org; Ernie Rosenberg [contact@ernierosenberg.com]
Subject: Preliminary attending for Nov 13-14.
Attachments: November I 2018 Attending List-1.docx

Attached is the attending list as of Nov 5...a few gaps but typical for one week from the event.
If you have not already done so please send me your contact info for the list.
Thanks

Tom Davis

Ex. 6

Environmental, Health, Safety
& Sustainability Roundtable

Members List/Attending*

April 2018

3M

- Mr. John Ostergren Director EH&S Operations
  3M Center, Building 224-5W-03, St. Paul, MN 55144
  Phone: 651-733-0506, Fax: 651-778-4468, E-mail: jostergren@mmm.com

- Mr. Paul F. Narog, Manager, Environmental Operations*
  3M Center, Building 224-5W-03, St. Paul, MN 55144
  Phone: 651-737-3583, Fax: 651-778-7263, E-mail: [HYPERLINK "mailto:pfnarog@mmm.com"]

Aleris International

- Mr. Ken Willings, Senior Vice President, Health Safety & Environmental
  25825 Science Park Drive, Suite 400, Beachwood, OH 44122
  Phone: 216-910-3507, Fax: 216-910-3652, E-mail: [HYPERLINK "mailto:ken.willings@aleris.com"]

Baxter Healthcare Corporation

- Mr. Arthur J. Gibson, Vice President, EHS*
  One Baxter Parkway, DF 4-3W, Deerfield, IL 60015
  Phone: 224-270-6854, Email: [HYPERLINK "mailto:arthur_gibson@baxter.com"]

- Mr. Robert Currie, Director, Environmental Programs & Product Stewardship
  Email: [HYPERLINK "mailto:robert_currie@baxter.com"]

- Mr. Jeff Wynveen, Director, EH&S
  25212 W IL Route 120, Round Lake, IL 60073
  Phone: 224-270-4912, Email: [HYPERLINK "mailto:jeff_wynveen@baxter.com"]

BP

James Nolan

- Director, Environmental Regulatory Affairs*
  1101 New York Ave, NW, Suite 700, Washington, DC 20005
  Phone: 202-457-6596, Ex. 6 E-mail:James.Nolan@bp.com

Chrysler Group LLC

- Mr. Gregory Rose, Director, Environment Health & Safety*
  CIMS 482-00-51, 80 Chrysler Drive, Auburn Hills, MI 48326-2757
  Phone: 248-576-7362, Fax: 248-576-7369, E-mail: [HYPERLINK "mailto:greg.rose@chrysler.com"]

- Mr. Kyle Jones, Senior Environmental Counsel

- Mr. Al Johnston
  E-mail: [HYPERLINK "mailto:al.johnston@fcagroup.com"]

Consol Mining Consol Energy, Inc

- Ms. Jacqueline Fidler, Director, Environmental & Regulatory Affairs
  1000 CONSOL Energy Drive, Canonsburg, PA 15317-6506
  Phone: 724-485-4011, Ex. 6
  E-mail: [HYPERLINK "mailto:jacquieFidler@consolenergy.com"]

- Steven Buffone, Supervisor Regulatory Affairs & HSE Compliance*
  1000 Consol Energy Drive, Canonsburg, Pa 15317
  Phone: 724-485-3037 E-mail: stevenBuffone@consolenergy.com

John Deere and Company

- Curt (Charles C) Cline, Global Director, Enterprise Strategic Manufacturing
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  Phone: 309-765-8000, E-mail: ClineCharlesC@John Deere.com

- Lorri M.Schrock, Manager Global Environmental Operation
  1 John Deere Road, Moline, IL 61265
  Phone: 309-236-0659, E-mail: SchrockLorriM@JohnDeere.com

Domtar

- Mr. David Struhs, Vice President, Sustainability
  100 Kingsley Park Drive, Fort Mill, SC 29715
  Phone: 803-802-8031, Email: [HYPERLINK "mailto:david.struhs@domtar.com"]

- Ms. Annabeth Reitter, Corporate Manager, Environmental Regulation*
  301 Point Basse Avenue, Nekoosa, WI 54457
  Phone: 715-886-7785, Ex. 6 Email: [HYPERLINK "mailto:annabeth.reitter@domtar.com"]

- Mr. Brian Kozlowski, Senior Manager, Sustainability Performance Optimization
  301 Point Basse Avenue, Nekoosa, WI 54457
  Phone: 715-886-7310, Ex. 6 Email: [HYPERLINK "mailto:brian.kozlowski@domtar.com"]

Georgetown University

- Ms. Audrey Stewart, Director, Office of Sustainability, Planning & Facilities Management
  37th & O Street, NW, Washington, DC 20057
  Phone: 202-687-4284, E-mail: [HYPERLINK "mailto:audrey.stewart@georgetown.edu"]

International Flavors & Fragrances [IFF]

- Mr. Kip Cleverley, Vice President, Global Sustainability
  521 West 57th Street, New York, NY 10019
  Phone: 212-765-5500, E-mail: [HYPERLINK "mailto:kip.cleverley@iff.com"]

Lockheed Martin Corporation

- Ms. Heather D. Daniels , Director, Advocacy & Governance*
  Phone: 301-548-2100, E-mail: heather.d.daniels@lmco.com

- Michael Anderson, Principal Engineer, Corporate Energy, Environment, Safety & Health
  6000 Mid-Atlantic Drive, 7th Floor North Tower, Mt. Laurel, NJ 08054
  Phone: 763-505-2572, E-mail: [HYPERLINK "mailto:michael.g.anderson@lmco.com"]

Medtronic

- Mrs. Valora Putnam , Director, Environment, Health, Safety & Sustainability*
  710 Medtronic Parkway, LS370, Minneapolis MN 55432
  Phone: 763-505-2572, E-mail: valora.putnam@medtronic.com

Owens Corning

- Danyelle Lynne Phelps, Director Enterprise Environmental & Operations Sustainability*
  2790 Columbus Road, Route 16, Granville, OH 43023
  Phone: 740-321-7789, E-mail: [HYPERLINK "mailto:Danyelle.Phelps@owenscorning.com"]

- Mr. Paul Lewandowski, Director, Regulatory Law
  8349 Water Park Drive, Holland, OH 43528-7849
  Phone: 419-248-8624, E-mail: [HYPERLINK "mailto:paul.s.lewandowski@owenscorning.com"]

- Mr. Frank O'Brien-Bernini, Vice President, Chief Sustainability Officer, Science &Technology
  Phone: 740-321-7114, Phone (Assistant) 740-321-7114
  E-mail: [HYPERLINK "mailto:frank.obrien-bernini@owenscorning.com"]

Shire

- Deborah Donovan, Head, EHS
  1200 Lakeside Drive, Bannockburn, Il 60015
  Phone: 224-940-6804, E-mail: [HYPERLINK "mailto:deborah.donovan@shire.com"]

- Mr. Michael Fisher, Head,, EHS Plasma Operations Unit
  1200 Lakeside Drive, Bannockburn, IL 60015
  Phone: 224-940-8395, E-mail: [HYPERLINK "mailto:Michael.fisher@shire.com"]

  Kevin Bartlett, P.E., Environmental Compliance Lead
  300 Shire Way, Lexington MA 02421 Phone: 401-484-4919; E-mail: [HYPERLINK "mailto:kevin.bartlett@shire.com"]

  Jason Pertoso, Director, Environment Health & Safety Head EH&S Georgia Site*
  Jason.pertoso@shire.com

Spectrum Brands

- Mr. Daniel Hutter, Division Vice President, Global EHS & Compliance Assurance*
  E-mail: [HYPERLINK "mailto:daniel.hutter@spectrumbrands.com"]

Wal-Mart Stores, Inc.

- Ms. Phyllis Harris, Vice President, Environmental Health & Safety Compliance
  508 SW 8th Street, Bentonville, AR 72716
  Phone: 479-204-8117, E-mail: [HYPERLINK "mailto:phyllis.harris@wal-mart.com"]

- Mr. Rich Dailey, Senior Director, Environment Health & Safety Compliance
  508 SW 8th Street, Bentonville, AR 72716
  Phone: 479-204-9914, E-mail: [HYPERLINK "mailto:rich.dailey@wal-mart.com"]

  Tejas Bhatt, Sr Director Walmart Food Safety *

EHSS Roundtable

- Tom Davis, Executive Director; President, Tom Davis Associates*
  Box 247, Tilghman Maryland 21671
  Phone: 202-262-1630, E-mail: [HYPERLINK Ex. 6

Guests/Speakers:

ISS/ Institutional Shareholder Service

Leah Rozin, Principal Advisor ISS Corporate Solutions

Rite Aid Corporation

`` Chris Hansen, ARM, Vice President, Risk Management, 30 Hunter Lane, Camp Hill, Pa. 17011
717-730-7730 [HYPERLINK "mailto:chris.hansen@riteaid.com"]

Albemarle

Catherine DeLacey, Head Global Public Affairs, Product Stewardship & Sustainability
Charlotte, NC

Tellevate, LLC

Joseph Tell, Director, Tellvate, Atlanta Georgia, [HYPERLINK "mailto:jtell@tellevate.com"]
404 538-5494

Nick Steinke, PE, CPEA, SFP. Principal, Tellevate, Lincoln NE, [HYPERLINK "mailto:nsteinke@tellevate.com"],
402-730-1660

Maram Salaheldin, Esq, Consultant, 4250 North Fairfax Drive, Suite 600,Arlington, VA 22203
281-224-1684 [HYPERLINK "mailto:msalaheldin@tellvate.com"]

Michael Linder, Attorney, Koley Jessen, OmahaNeb., [HYPERLINK "mailto:mike.linder@koleyjessen.com"]
402-343-3755

Scott Walsh, Independent Consultant, 10950 Hijos Way, San Diego, CA 92124 619-618-5714
[HYPERLINK "mailto Ex. 6 *"]

Frank B. Friedman & Associates, LLC

- Frank Friedman, President, Frank B. Friedman & Associates LLC*
  5630 Wisconsin Ave, Suite #205, Chevy Chase, MD 20815
  Phone: 301-913-9830, Fax: 301-913-9835,

USEPA

[HYPERLINK "mailto:Grevatt.Peter@epa.gov"]

Ryan Jackson, Chief of Staff, USEPA

NAEM

Carol Singer, Executive Director*
Phone: 202-986-6616

ELI

Scott Fulton, President, ELI

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From: Peter Robertson [peterrobertson@pebblepartnership.com]
Sent: 10/23/2018 9:00:03 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Fwd: Goldman Sachs
Attachments: 934445666.pdf

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From: Peter Robertson
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See p. 24.

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Goldman Sachs

Copper

Top Projects

Deficit delayed, not denied

With the ninth iteration of the Copper Top Projects report, we analyse 84 copper projects that are set to form >75% of new copper supply in the near future and account for c.US$150 bn of capex. Our key takeaway: for the first time in four years, the incentive price to bring new projects online has increased dramatically, by c.35% yoy. More than 80% of the unapproved projects we analyse are uneconomic at current prices, which means prices need to climb higher. However, that rise is likely to be slower than we previously expected, owing to higher supply this year and next. We remain confident on demand given our expectation that China's growth will remain strong and EV demand will start to manifest in the next few years. We continue to favour equities that are well positioned to bring new projects online, vs. those that do not have attractive projects and will likely have to engage in M&A.

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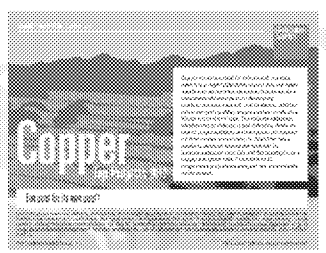
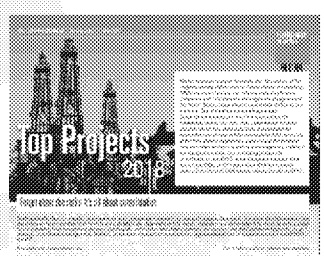
The GS Supply Demand model for copper is a collaboration between our Equity and Commodities analysts. The views expressed outside this analysis are those of the equity analysts.

For more on the Top Project series



Copper Top Projects 2017: Too good for its own good?
July 5, 2017



Top Projects 2018: Forget about the rocks. It's all about consolidation
April 9, 2018

Zinc Top Projects Show me the metal
July 11, 2018

Table of Contents

PM Summary: Forecast deficit pushed out again	4
Build or Buy remains the big decision: We have seen evidence of both	8
Analysing what the market has overlooked over the past few years for copper	11
Prefer equities with attractive projects, catalysts ahead	18
Supply: Pace of supply additions has slowed dramatically; country risks have increased	20
Demand: Outlook has muddied, but overall remain positive	32
China: Recent data has been disappointing, but policy stance supportive	34
Electric vehicles driving demand for copper	39
Costs have bottomed out, inflation is back	49
Copper Top Projects: Key takeaways from our supply-side analysis	51
Cobalt - EV demand to continue to see the metal in a deficit	64
Copper supply-demand balance	91
Copper Top Projects: Summaries	94
Modeling each project – how we do it?	98
Top Projects: Copper summaries	99
Disclosure Appendix	185

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COPPER in numbers

Top Projects takeaways

US$7,067 average copper price required to generate a 17% IRR

US$7,307 avg. incentive price to bring the 51 unapproved projects online

US$6,799 avg. incentive price for the risked projects under our coverage

3% average capital intensity of copper equivalent production in the last year

Supply Growth concentrated

50% of the production increase in the next 2 years is coming from 3 mines

40% of the new supply over the next 2 years is coming from 3 companies

Disruptions running low

1.10% YTD rate of disruption vs. 5% through the cycle

Demand

2.90% of demand growth in China pa over 2018-20E

3.50% of demand growth in EMs pa over 2018-20E

0.50% of demand growth in DMs pa over 2018-20E

Electric Vehicles

14% EV/PHEVs as a % of the total fleet

21.8 mn tonnes potential cumulative demand from EVs to 2030

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PM Summary: Forecast deficit pushed out again

We update our analysis of the Top Projects: Copper set to come online in the near to medium term. The projects we analyse are set to form >75% of new production. After being a stellar performer for most of 2017 and early 2018, copper has sold off materially as investors have turned bearish on: (1) China demand; (2) EM concerns / stronger dollar and; (3) trade tensions. While prices have come off their peak in May/June this year, they remain strong, in our view. We believe the market continues to underestimate the lack of supply growth in copper, and therefore remain positive on the copper price.

In our 2017 edition, *Copper Top Projects: Too good for its own good*, we argued that the general attractiveness of the metal to all the stakeholders, has resulted in more supply coming online than expected. This has seen previously forecast deficits being pushed out - something which is happening with this report. However, post the work done in this report, we are confident that the lack of investment will see a deficit eventually forming in early 2020s.

On the demand side, we take a more upbeat view on China, and EMs more broadly, vs. the market; we remain confident that demand is likely to continue to grow in the next few years, barring a macro event such as that of 2007-08. Supporting this view is the work we have done with our commodities team on the potential demand from electric vehicles (EVs), which should provide a boost to demand in the early 2020s. While this is likely to be "out of investable time horizon" for some investors, we believe fundamental investors are likely to start to position positively on copper over the next few years given the expected increase in demand.

Key takeaways from our copper supply-side work

- **Costs/capex are on the rise**... Costs and capex demonstrated clear evidence of bottoming out in 2017. FY17/1H18 results showed that costs for global copper miners rose anywhere between 3% and 11% yoy, and capex between 3% and 5%. We believe this trend is here to stay.
- **...which has seen the incentive price required for projects increase:** Rising costs/capex, coupled with increasing consumable costs, has led to a rise in incentive prices – the copper price required to bring the projects we have analysed online – for the first time in four years. The incentive price for the 84 projects we have analysed has increased to US$7,067/t, up 33% yoy.
- **Risked projects relatively unchanged**...The parameters of the risked projects that we analyse have remained relatively unchanged, mostly because the majority of the capex for these projects has already been spent. Our analysis of 33 risked projects shows that the required price for the copper projects is c.US$6,799/t, up from US$5,073/t last year.
- **...while the required price for unapproved projects has increased significantly:** Of the 51 unapproved projects we have analysed, the required copper price has climbed to US$7,307/t from US$5,373/t, a yoy increase of 36%. Aside from

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cost inflation/higher capex, this has been a function of higher risk, which in our view will lead to companies looking for a higher IRR.

Supply: Entering a period of very low growth on lack of investment over the past few years

- **Capex fell materially in 2015-17...** Investment in mining projects fell materially in 2015-17 as companies struggled to improve their balance sheets, which were highly levered. As the development period of a new mine is 3-5 years, the new mine supply that should have hit in 2018-20 will be pushed out, which means supply growth over the next few years is likely to be the lowest in several years – 2.33% pa over the next three years.
- **Lack of any tangible disruptions has been negative for prices...** One factor that has surprised both us and investors has been the lack of any tangible disruptions despite more than 2 mn tonnes of supply in Chile undergoing wage negotiations. This has been a function of companies reaching common ground with unions to avoid large-scale disruptions such as that of 2017.
- **...unlikely to be a consistent factor:** While the lack of disruptions has been a negative for copper prices, if history is a guide, it is unlikely to persist. Historically, the rate of disruptions has been c.5% of mine supply vs. 1.1% YTD. We believe mean-reversion is likely, which should affect supply from next year onwards.
- **Companies are still not investing in projects...** Despite copper prices having improved materially from the bottom of the cycle in 2016, mining companies are still wary of investing in growth projects. Indeed, the only greenfield project to be approved over the past couple of years has been Quellevaco (by Anglo American). We believe this is because: (1) companies remain wary of the volatility in commodity prices; and (2) investors are looking for enhanced returns and are still cautious on companies making large investments.
- **...which likely means prices need to remain higher for longer:** Given the dampening effect on investment of recent volatility in prices (which is positive for commodity prices in the longer term), we believe that investment will pick up only if prices remain higher for longer. The required copper price for the 84 projects in our analysis has increased for the first time in more than four years, to US$7,067/t from US$5,324/t last year.

Demand: Concerns around recent events in EM/China overdone; we see growth ahead

- **EM concerns saw the first wave of outflows from copper**... The EM sell-off at the start of 2H18 was the first domino to fall. Synchronous growth had been the keyword at the start of the year, which saw commodities rally. However, as EM growth faltered, investors started taking a bearish view on the long-term growth prospects for these markets.
- ...**China concerns were the second driver:** Soggy China data – FAI data for July/August, credit data and other activity data – was the second domino to fall. Given that China accounts for c.50% of total copper demand, this led to investors

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taking an even more bearish view on the commodity. Data has continued to disappoint, but our economists believe it should start to pick up given the recent loosening by the policymakers.

- **EM sell-off and a stronger USD have been a headwind too:** A stronger dollar, implying a move to risk-off assets, has been another drag on copper prices.
- **We remain confident on demand growth despite recent weakness**: Despite the recent weakness, we remain confident on demand, with our commodities team forecasting demand growth of c.2% pa over the next three years. Our view is based on: (1) EM growth not being affected to the extent that the market appears to believe; we forecast EM copper demand growth of 3.5% over 2018-20; (2) China growth that is likely to remain strong – policymakers have started loosening by cutting onshore rates and by reducing restrictions on lending, which should be supportive of growth; and (3) DMs are expected to remain broadly flat – our commodities team forecasts growth of c.0.5% pa in DM copper demand over the next 3-4 years.
- **EVs likely to offer a material fillip to demand from the early 2020s:** China accounts for half of all global electric vehicle (EV) sales and continues to be the fastest-growing EV market. Even under relatively conservative assumptions, we estimate that copper consumption will increase 700ktpa from 2018 to 2025 on rising EV production, roughly half of which will come from China.

Equities: See pockets where valuation looks undemanding

- **Equities have had a choppy year...** Copper mining equities have had a volatile year after a very strong 2016/17. We believe the underperformance of equities vs. copper reflects an unwillingness by investors to pay high multiples given the lack of confidence in commodity prices.
- **Remain positive on copper prices albeit a more tempered view:** We remain positive on copper prices, albeit our commodities team now forecast a 12-month copper price of US$6,885/t, down from their previous forecast of US$8000/t by end-2019 given the recent hiccups in demand from EMs/China.
- **We expect capex and M&A to increase**: We believe capex is set to rise further, a trend already in evidence with miners across the size spectrum increasing both sustaining and growth capex. Another trend to watch is the rising tide of M&A, where we believe the companies that do not have attractive copper projects are likely to buy projects sitting with companies that do not have the resources to build them.
- **Favour equities that have strongly positioned projects**: Our preferred equities are those that have strong growth projects (i.e. that are well positioned in terms of jurisdiction and required copper price) and catalysts ahead. ***Reflecting these themes, our top picks with the highest exposure to copper remain GLEN, FM, FCX, MMG and Zijin while we downgrade Antofagasta to Sell.***

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Exhibit 1: Summary financial metrics for global copper equities

Company	Share price Ccy	Last Close	Rating New	Rating Old	12m PT PT	12m PT Old	Return (%)	P/E 2018E	P/E 2019E	P/E 2020E	EV/EBITDA 2018E	EV/EBITDA 2019E	EV/EBITDA 2020E	Net debt/EBITDA 2018E	Net debt/EBITDA 2019E	Net debt/EBITDA 2020E	FCF Yield(%) 2018E	FCF Yield(%) 2019E	FCF Yield(%) 2020E	Dividend Yield(%) 2018E	Dividend Yield(%) 2019E	Dividend Yield(%) 2020E
Diversifieds																						
BHP - LSE	GBP	1,692.00	Buy	Buy	1,950	2,000	15%	15.76x	15.48x	17.63x	5.45x	5.64x	6.04x	0.40x	0.33x	0.24x	8.1%	7.0%	6.7%	5.0%	4.3%	3.9%
BHP - ASX	AUD	36.41	Buy	Buy	40.0	42.0	13%	18.15x	17.82x	20.30x	5.92x	6.06x	6.42x	0.40x	0.33x	0.24x	7.4%	6.5%	6.3%	4.4%	3.8%	3.4%
Rio -LSE	GBP	3,917.50	Neutral	Neutral	4,000	4,000	2%	9.77x	10.54x	11.84x	5.49x	5.56x	5.97x	0.02x	0.19x	0.32x	6.3%	6.4%	4.8%	6.2%	5.6%	5.1%
Rio Tinto - ASX	AUD	79.95	Neutral	Neutral	82.0	84.0	3%	10.97x	11.83x	13.29x	6.04x	6.09x	6.52x	0.02x	0.19x	0.32x	5.7%	5.8%	4.3%	5.5%	5.0%	4.5%
Glencore	GBP	333.55	Buy	Buy	400	375	20%	8.20x	8.45x	10.79x	4.13x	3.87x	4.06x	0.49x	0.31x	0.07x	20.9%	16.3%	16.0%	5.3%	4.2%	5.6%
Anglo American	GBP	1,755.40	Buy*	Buy*	2,200	2,000	25%	10.12x	10.22x	12.90x	4.33x	3.86x	4.48x	0.42x	0.19x	0.21x	8.7%	9.4%	3.8%	4.4%	4.6%	3.7%
Norilsk Nickel	USD	17.20	Buy	Buy	24	25	40%	7.03x	6.75x	7.07x	5.94x	5.32x	5.79x	1.32x	1.14x	1.46x	13.6%	8.0%	7.9%	13.1%	14.4%	13.9%
Teck Resources Ltd	USD	24.33	Neutral	Neutral	30	28	23%	7.03x	8.61x	10.26x	3.99x	4.42x	4.97x	0.53x	0.09x	-0.09x	11.0%	12.9%	5.8%	2.1%	0.6%	0.6%
Teck Resources Ltd.	CAD	31.28	Neutral	Neutral	38	37	21%	7.03x	8.61x	10.26x	3.99x	4.42x	4.97x	0.53x	0.09x	-0.09x	11.0%	12.9%	5.8%	2.1%	0.6%	0.6%
Copper																						
Antofagasta	GBP	879.40	Sell	Neutral	725	800	-18%	29.43x	14.30x	12.33x	7.58x	5.61x	5.22x	0.30x	0.16x	0.11x	1.9%	2.5%	3.2%	1.3%	2.6%	3.0%
Boliden	SEK	253.60	Neutral	Neutral	250	250	-1%	9.39x	9.89x	10.59x	4.71x	4.97x	5.02x	0.07x	0.04x	-0.07x	8.5%	6.7%	7.9%	6.4%	6.1%	5.6%
First Quantum Minerals	CAD	14.99	Buy	Buy	18.0	24.0	20%	22.38x	11.69x	7.98x	9.24x	6.44x	4.79x	3.57x	2.41x	1.49x	-3.9%	4.1%	15.7%	0.1%	0.1%	0.2%
Lundin Mining Corp.	SEK	47.34	Neutral	Neutral	50.0	51.0	6%	15.41x	9.19x	7.54x	4.97x	3.94x	3.04x	-1.24x	-1.00x	-1.27x	-5.9%	2.0%	11.0%	1.8%	1.7%	1.7%
Lundin Mining Corp.	CAD	6.67	Neutral	Neutral	7.3	7.5	9%	15.27x	9.10x	7.47x	4.91x	3.90x	3.01x	-1.24x	-1.00x	-1.27x	-5.9%	2.0%	11.1%	1.8%	1.8%	1.8%
KAZ Minerals Plc	GBP	553.60	Neutral	Neutral	575	450	4%	7.67x	9.45x	9.84x	4.66x	5.27x	5.41x	1.90x	2.20x	2.28x	-5.9%	-2.1%	-1.3%	0.3%	0.2%	0.2%
Aurubis AG	EUR	60.60	Neutral	Neutral	60.0	61.0	-1%	12.12x	14.98x	13.02x	5.38x	5.63x	5.01x	-0.53x	-0.96x	-1.04x	14.0%	8.9%	6.0%	3.4%	3.3%	3.5%
KGHM Polska Miedz SA	PLN	90.40	Sell	Sell	89	88	-2%	9.35x	8.15x	11.10x	4.60x	4.35x	4.34x	1.15x	1.01x	0.88x	8.5%	4.3%	5.7%	1.2%	1.0%	0.9%
Freeport-McMoRan Inc.	USD	13.95	Buy	Buy	18.0	19.0	29%	8.79x	18.66x	14.81x	4.43x	7.20x	6.30x	0.93x	1.38x	0.86x	13.4%	4.3%	9.8%	1.4%	1.4%	1.4%
MMG Ltd	HKD	3.95	Buy	Buy	5.80	6.30	47%	14.75x	8.39x	7.44x	6.69x	5.41x	4.72x	3.67x	2.69x	2.06x	16.0%	18.4%	18.7%	0.0%	0.0%	0.0%
Jiangxi Copper	HKD	9.03	Neutral	Neutral	11.5	12.7	27%	10.39x	10.10x	9.61x	5.36x	4.97x	4.50x	0.97x	0.91x	0.57x	-14.4%	2.9%	11.4%	4.0%	4.2%	4.4%
Jiangxi Copper	CNY	14.47	Neutral	Neutral	17.10	18.80	18%	10.39x	10.10x	9.61x	5.36x	4.97x	4.50x	0.97x	0.91x	0.57x	-14.4%	2.9%	11.4%	4.0%	4.2%	4.4%
Zijin Mining	HKD	3.03	Buy	Buy	3.8	3.9	25%	14.31x	14.05x	12.71x	6.02x	5.70x	6.26x	0.86x	0.58x	1.25x	8.9%	8.3%	9.2%	3.5%	3.6%	3.9%
Zijin Mining	CNY	3.57	Buy	Buy	4.80	4.90	34%	14.31x	14.05x	12.71x	6.02x	5.70x	6.26x	0.86x	0.58x	1.25x	8.9%	8.3%	9.2%	3.5%	3.6%	3.9%

** Denotes member of our Pan Europe Conviction Investment List*

Source: Factset, Company data, Goldman Sachs Global Investment Research

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Build or Buy remains the big decision: We have seen evidence of both

With the exception of Anglo American and Glencore, none of the big-cap mining companies in our coverage screen as having a portfolio of attractive copper assets (on our estimates). Given the attractiveness of copper for the miners (the big revenue pool that it represents) coupled with relatively strong balance sheets for most of the companies, we believe there is an important decision to be made: Build or Buy.

- **Build:** While the big miners – BHP, Rio, Glencore and Anglo American – have portfolios of growth options, these do not appear compelling, on our estimates. In our view, companies are likely to go ahead with brownfield expansions and projects where capex has partly been spent. Given that attractive greenfield options are increasingly scarce and expensive, we believe miners could look to acquire other attractive assets. BHP has recently opted to pursue expansion at Spence, and we believe that it is likely to go ahead with the Olympic Dam expansion too. Meanwhile, according to comments by RIO's CEO, the company is also looking to expand in copper.
- **Buy:** There are a number of projects owned by companies that do not have the resources to bring them to fruition. Given the historical precedents, we believe that miners with stronger balance sheets might look to acquire smaller companies; we have seen evidence of this with KAZ Minerals buying Baimskaya recently.

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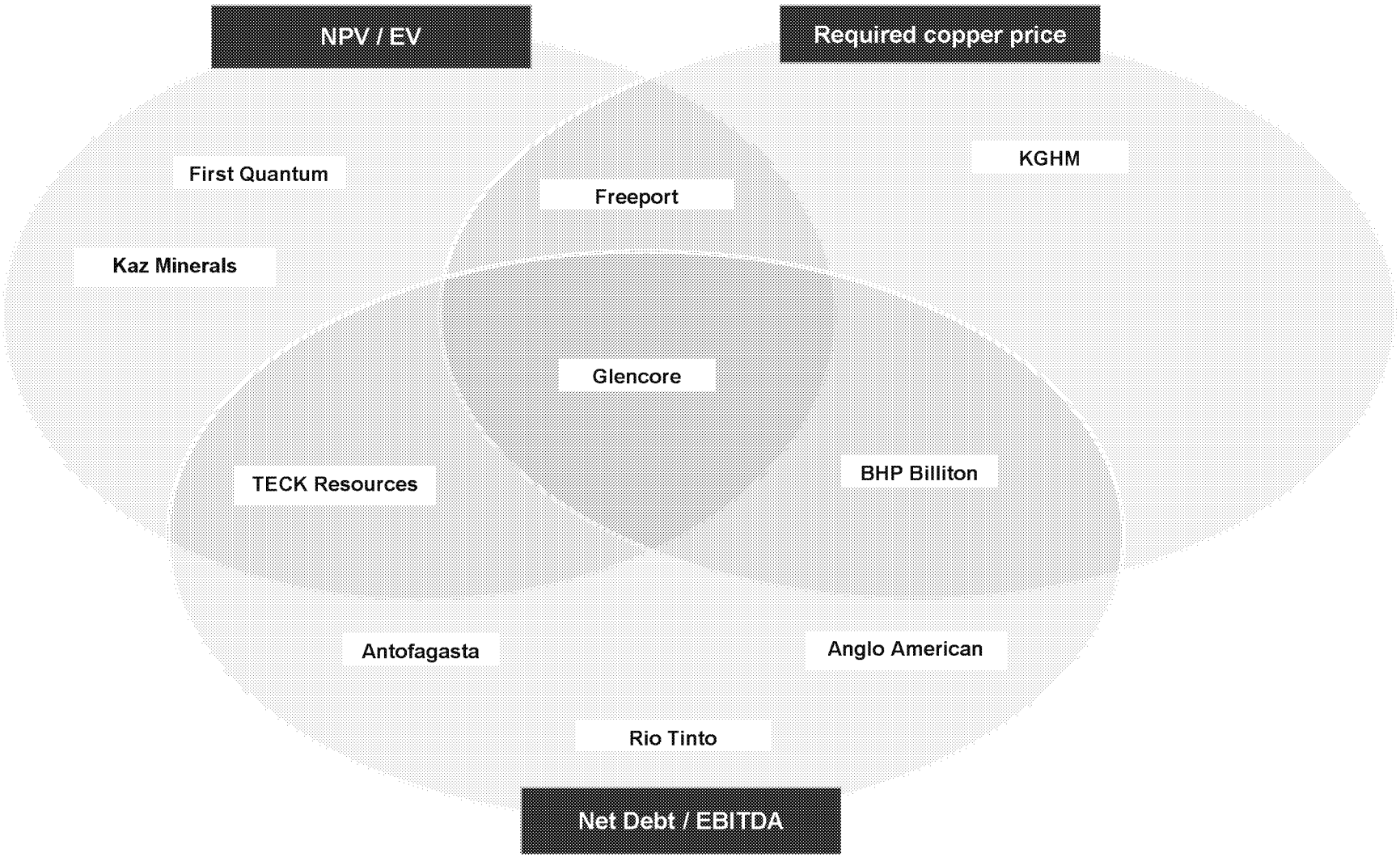
Exhibit 2: GLEN is best positioned, followed by Freeport, BHP and Teck



Source: Goldman Sachs Global Investment Research

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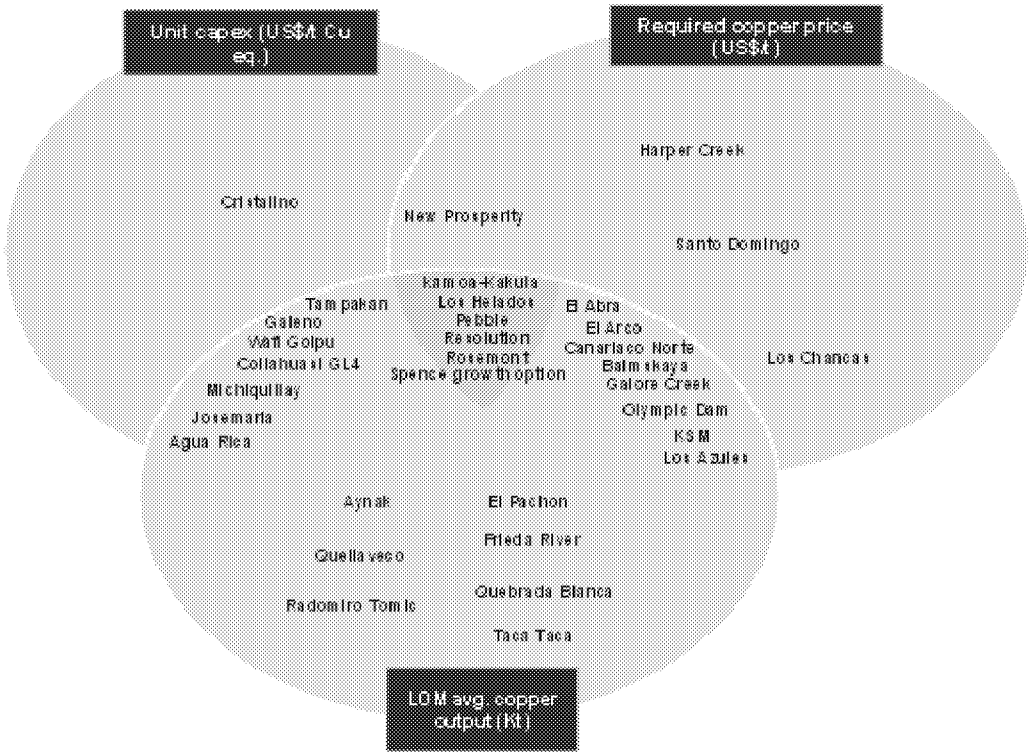
Juniors continue to have the best undeveloped projects

To attempt to identify the most attractive projects, we look at three metrics: (1) capex intensity; (2) the required copper price to bring a project online; and (3) LOM average copper production. We look at projects for which the owners either do not appear to have the balance sheet strength to undertake such a big project and/or are solely exploration companies. *Note that one of the projects highlighted in our Top Copper Projects report - 2017, Baimskaya, was recently acquired by Kaz Minerals.*

Exhibit 3: Identifying the most attractive projects from our analysis



Source: Company data, Goldman Sachs Global Investment Research

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Analysing what the market has overlooked over the past few years for copper

We discuss below what we believe the market has overlooked in the past few years that has led to significant downgrades to consensus price forecasts:

- **Supply:** In our view, the market has consistently overestimated the concentrate supply coming online. **Possible reason:** Project delivery being delayed vs. expectations.

However, this has been offset by the following two factors:

- **Demand:** Demand has been one of the biggest downside surprises, with the market consistently downgrading forecasts. **Possible reason:** The slowdown in China in 2014. However, it is worth noting that demand forecasts more recently have been upgraded – mainly a function of stronger demand from China and RoW.
- **Disruptions:** Here, we believe the market has been overestimating the total number of disruptions. **Possible reason:** As copper prices fell, producers focused more closely on their operations, which resulted in fewer disruptions.

After shifting to a more bearish view on copper versus its historically bullish stance, the market appears to be turning more positive again, with consensus moving from a forecast surplus in 2018-20 to a deficit, implying price forecasts are likely to increase.

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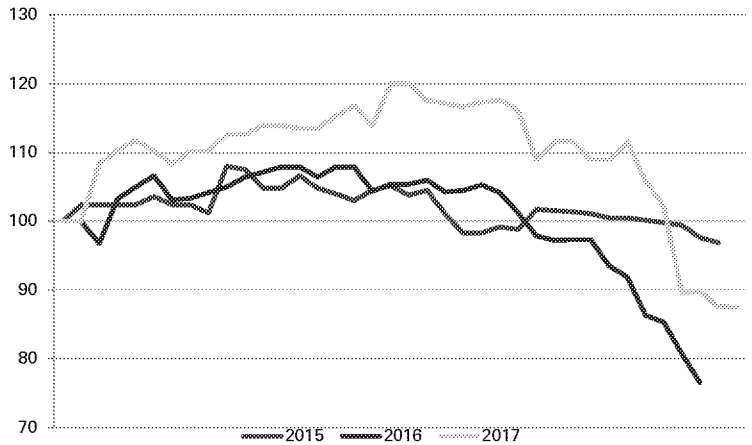
Exhibit 4: The average downgrade to consensus copper price forecasts for 2015-17 was 14% over a period of four years

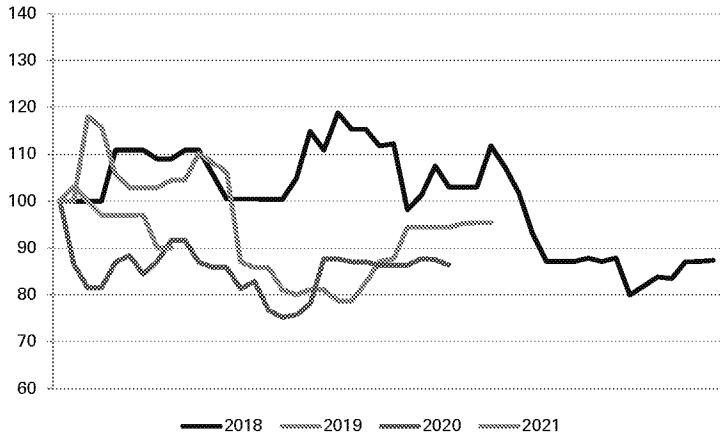
Commodity price forecasts for 2015/16/17 – rebased to 100 as of four years back



Source: Bloomberg

Exhibit 5: Consensus has downgraded its price expectations for copper for 2018-21 by an average 10% over the past few years

Commodity price forecasts for 2018/19/20 – rebased to 100 as of four years back



Source: Bloomberg

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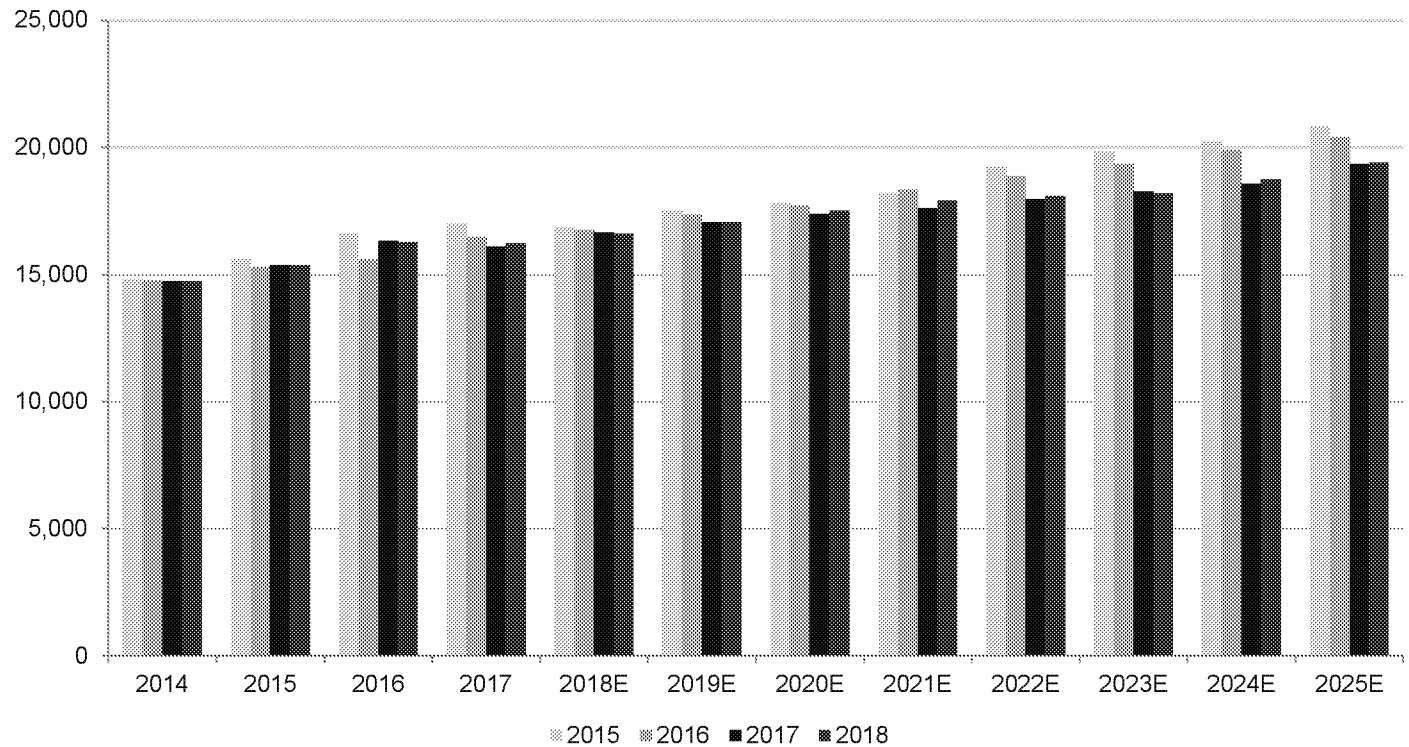
Supply: Market has been overly bullish on supply

As apparent from the exhibit below, the market has consistently been overly bullish on supply. It is difficult to determine the reasons for this, but they may include: (1) excessive optimism on growth projects, which rarely come online on time; and (2) a greater than expected grade decline.

How to read the chart: The bars represent Wood Mackenzie forecasts for copper concentrate production for the editions 2015, 2016, 2017 and 2018; for example, the four bars in the cluster 2019E represent what Wood Mackenzie was forecasting for 2019 in 2015, 2016, 2017 and the current forecast.

Exhibit 6: Market has been overly bullish when forecasting supply
Supply forecasts for 2014-2025 (Kt)



Source: Wood Mackenzie

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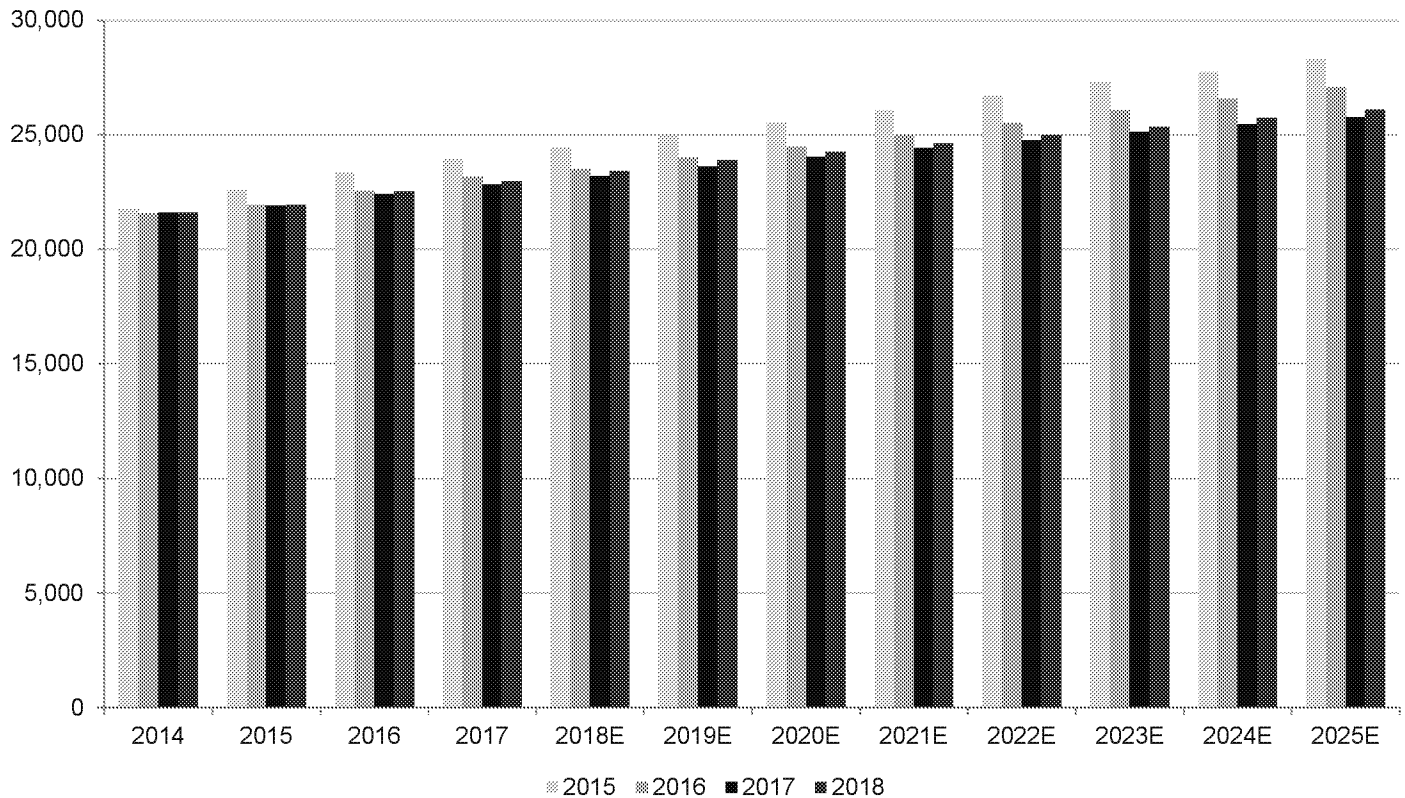
Demand: Market has been overly bullish on demand

As shown in the exhibit below, the market has also been overly bullish on demand too. We believe the main reason for this has been the significant slowdown in Chinese consumption: the growth rate of Chinese copper consumption slowed from an average of 12.2% in 2008-13 to 6.2% in 2013-17.

How to read the chart: The bars represent Wood Mackenzie forecasts for copper refined consumption for the editions 2015, 2016, 2017 and 2018; for example, the four bars in the cluster 2019E represent what Wood Mackenzie was forecasting for 2019 in 2015, 2016, 2017 and the current forecast.

Exhibit 7: Market has been overly bullish when forecasting demand
Refined consumption forecasts for 2014-2025E (Kt)



Source: Wood Mackenzie

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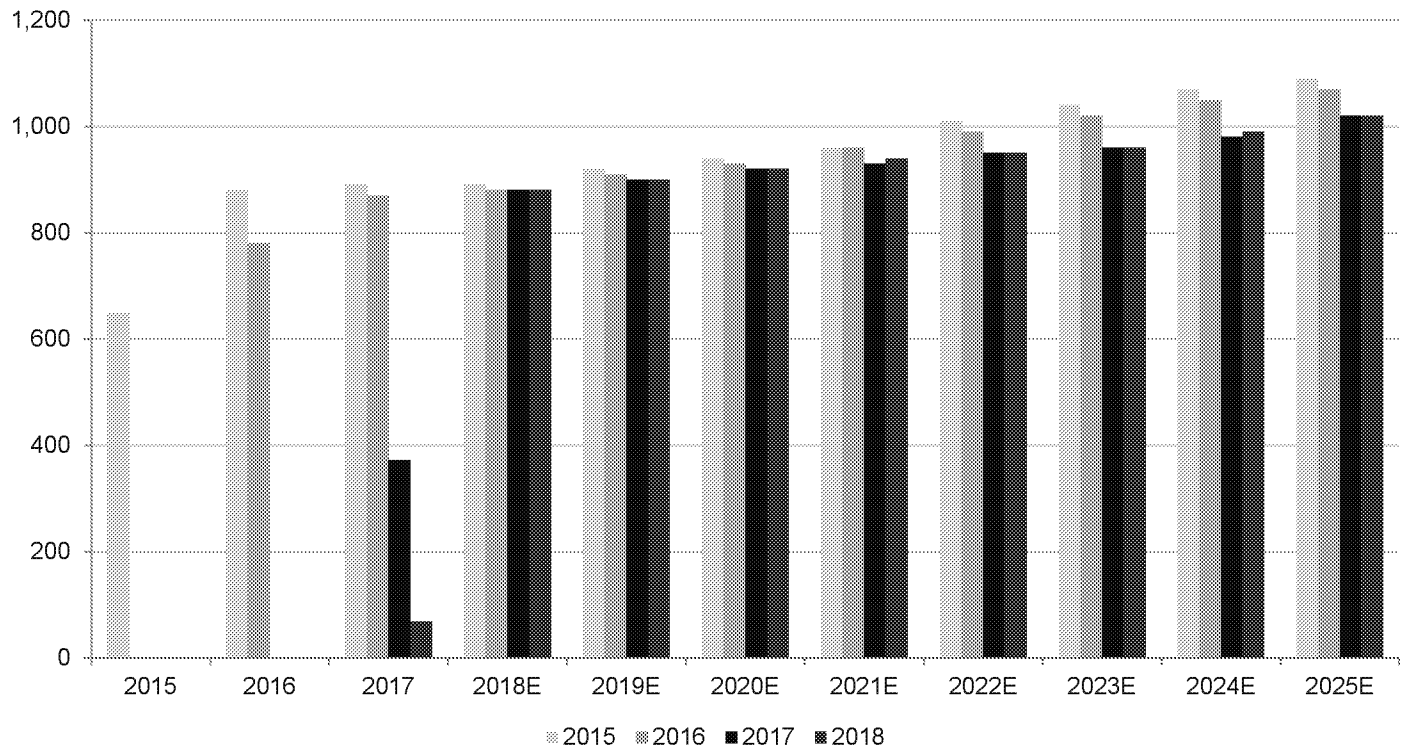
Disruption allowance: Market has overestimated the amount of disruption

In our view, the market has probably been building in a higher level of disruption allowance than actually materialised. This has led to the new disruption allowance being continually reduced. A potential reason for the reduced level of disruption is that as copper prices fell, miners started focusing more closely on their operations and demands for pay rises by unions became less significant, which resulted in lower disruptions.

How to read the chart: The bars represent Wood Mackenzie forecasts for disruption allowance for the editions 2015, 2016, 2017 and 2018; for example, the four bars in the cluster 2019E represent what Wood Mackenzie was forecasting for 2019 in 2015, 2016, 2017 and the current forecast

Exhibit 8: Disruption allowance has steadily declined
Disruption allowance forecasts for 2015-2025E (Kt)



Source: Wood Mackenzie

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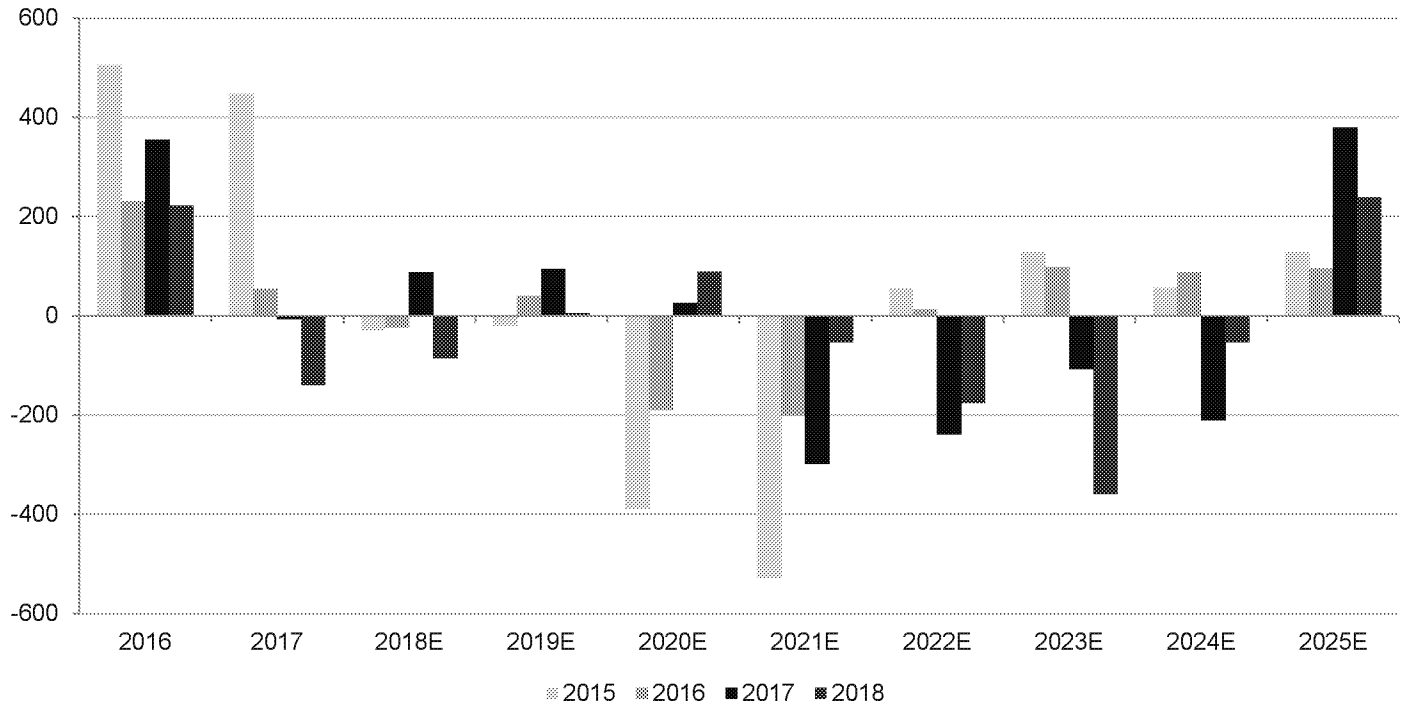
Forecasts have narrowed and in some cases turned to surpluses

While supply forecasts have been bullish, the overly optimistic demand forecasts and disruption allowances have seen many deficit forecasts (e.g. 2018, 2019 and 2020) turn into surpluses (large and small), and in most cases large deficits turn into smaller ones (e.g. 2021). Most interesting, in our view, are the 2018/19 forecasts – in 2017, the forecast was for a surplus, and a fairly significant one. However, that has changed more recently as the market has moved into a deficit for 2018 and a much smaller surplus for 2019.

How to read the chart: The bars represent Wood Mackenzie forecasts for surpluses/deficits for the editions 2015, 2016 and 2017; for example, the four bars in the cluster 2018E represent what Wood Mackenzie was forecasting for 2018 in 2015, 2016, 2017 and the current forecast.

Exhibit 9: Surplus/deficit forecasts for copper, 2014-18 (Kt)



Source: Wood Mackenzie

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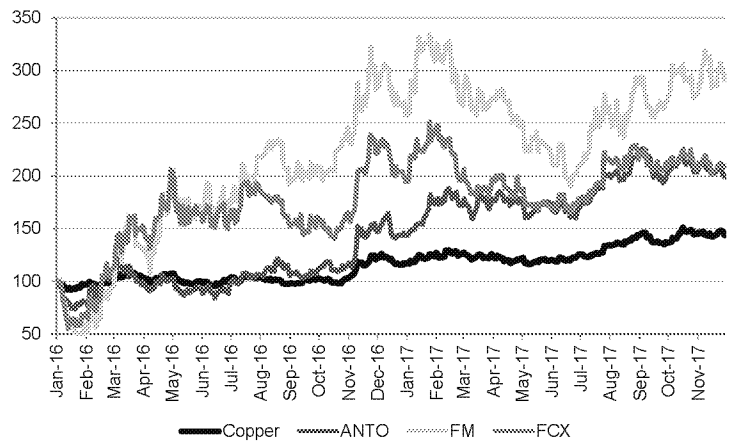
Copper equities have traded poorly this year on reduced confidence in prices

2016/17 were strong years for copper and copper equities. Equities outperformed the underlying commodity (copper in this case) by multiples of 2-3x, mainly as investors grew more confident in the outlook for copper prices, underpinned by confidence in demand, and an increasingly consensus view that supply growth was disappointing and there were multiple risks to supply in the form of disruptions ahead.

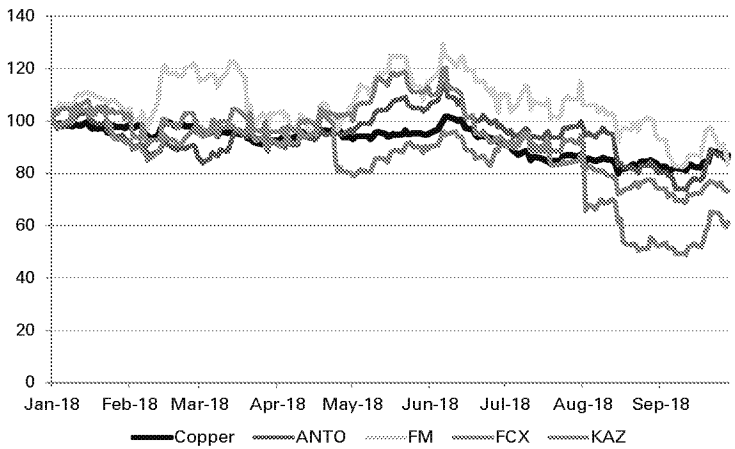
This year, however, has been very choppy for the equities. While the start of the year was strong, the equities have more than given up their gains as investors have become notably cautious on the future of copper, mainly owing to concerns over demand from EMs and China. As a result of these concerns, despite strong fundamentals and copper prices being relatively unchanged YTD, equities have traded poorly and most of them are down.

Exhibit 10: 2016/17 were very good years for copper/copper equities...



Source: Datastream

Exhibit 11: ...however, this year has been very choppy for the equities



Source: Datastream

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Prefer equities with attractive projects, catalysts ahead

Our framework for selecting copper equities is simple – we prefer equities that have attractive projects (i.e. have a lower required copper price to bring the projects online, and are in stable jurisdictions) and have moved ahead with those projects. In addition, we also favour those that also have some catalysts in the near future.

Our key actionable ratings

- **Buy BHP**: (1) Strong returns; (2) Attractive commodity mix; (3) Strong copper portfolio.
- **Buy Anglo (on CL)**: (1) Quellaveco is a Tier 1 project; (2) Attractive commodity mix; and (3) Valuation undemanding.
- **Buy GLEN**: (1) Attractive commodity mix; (2) Strong FCF generation/potential for returns ramp-up; (3) Outcome of DoJ investigation a risk.
- **Buy Norlisk**: (1) FCF inflection; (2) Delevering ahead; (3) Consensus (Bloomberg) mispricing earnings, in our view.
- **Sell Antofagasta**: (1) Valuation high; (2) FCF/returns tier 4/3 vs. peers; (3) Growth options look uncompelling.
- **Buy First Quantum**: (1) Cobre to come online next year; (2) Strong FCF generation/delevering; and (3) Valuation undemanding.
- **Buy FCX**: (1) Strong copper exposure; (2) Grasberg resolution a positive; (3) Strong FCF generation.
- **Sell KGHM**: (1) Low cash generation; (2) Valuation looks demanding.
- **Buy MMG Ltd**: (1) High leverage to copper prices; (2) We see net gearing falling; (3) Strong FCF generation.
- **Buy Zijin Mining**: (1) Strong copper growth ahead; (2) Active in M&A; (3) Strong FCF generation.

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Exhibit 12: Summary key financial metrics

Company	Share price Ccy	Last Close	Rating New	Rating Old	12m PT PT	12m PT Old	Return (%)	P/E 2018E	P/E 2019E	P/E 2020E	EV/EBITDA 2018E	EV/EBITDA 2019E	EV/EBITDA 2020E	Net debt/EBITDA 2018E	Net debt/EBITDA 2019E	Net debt/EBITDA 2020E	FCF Yield(%) 2018E	FCF Yield(%) 2019E	FCF Yield(%) 2020E	Dividend Yield(%) 2018E	Dividend Yield(%) 2019E	Dividend Yield(%) 2020E
Diversifieds																						
BHP - LSE	GBP	1,692.00	Buy	Buy	1,950	2,000	15%	15.76x	15.48x	17.63x	5.45x	5.64x	6.04x	0.40x	0.33x	0.24x	8.1%	7.0%	6.7%	5.0%	4.3%	3.9%
BHP - ASX	AUD	36.41	Buy	Buy	40.0	42.0	13%	18.15x	17.82x	20.30x	5.92x	6.06x	6.42x	0.40x	0.33x	0.24x	7.4%	6.5%	6.3%	4.4%	3.8%	3.4%
Rio -LSE	GBP	3,917.50	Neutral	Neutral	4,000	4,000	2%	9.77x	10.54x	11.84x	5.49x	5.56x	5.97x	0.02x	0.19x	0.32x	6.3%	6.4%	4.8%	6.2%	5.6%	5.1%
Rio Tinto - ASX	AUD	79.95	Neutral	Neutral	82.0	84.0	3%	10.97x	11.83x	13.29x	6.04x	6.09x	6.52x	0.02x	0.19x	0.32x	5.7%	5.8%	4.3%	5.5%	5.0%	4.5%
Glencore	GBP	333.55	Buy	Buy	400	375	20%	8.20x	8.45x	10.79x	4.13x	3.87x	4.06x	0.49x	0.31x	0.07x	20.9%	16.3%	16.0%	5.3%	4.2%	5.6%
Anglo American	GBP	1,755.40	Buy*	Buy*	2,200	2,000	25%	10.12x	10.22x	12.90x	4.33x	3.86x	4.48x	0.42x	0.19x	0.21x	8.7%	9.4%	3.8%	4.4%	4.6%	3.7%
Norilsk Nickel	USD	17.20	Buy	Buy	24	25	40%	7.03x	6.75x	7.07x	5.94x	5.32x	5.79x	1.32x	1.14x	1.46x	13.6%	8.0%	7.9%	13.1%	14.4%	13.9%
Teck Resources Ltd	USD	24.33	Neutral	Neutral	30	28	23%	7.03x	8.61x	10.26x	3.99x	4.42x	4.97x	0.53x	0.09x	-0.09x	11.0%	12.9%	5.8%	2.1%	0.6%	0.6%
Teck Resources Ltd.	CAD	31.28	Neutral	Neutral	38	37	21%	7.03x	8.61x	10.26x	3.99x	4.42x	4.97x	0.53x	0.09x	-0.09x	11.0%	12.9%	5.8%	2.1%	0.6%	0.6%
Copper																						
Antofagasta	GBP	879.40	Sell	Neutral	725	800	-18%	29.43x	14.30x	12.33x	7.58x	5.61x	5.22x	0.30x	0.16x	0.11x	1.9%	2.5%	3.2%	1.3%	2.6%	3.0%
Boliden	SEK	253.60	Neutral	Neutral	250	250	-1%	9.39x	9.89x	10.59x	4.71x	4.97x	5.02x	0.07x	0.04x	-0.07x	8.5%	6.7%	7.9%	6.4%	6.1%	5.6%
First Quantum Minerals	CAD	14.99	Buy	Buy	18.0	24.0	20%	22.38x	11.69x	7.98x	9.24x	6.44x	4.79x	3.57x	2.41x	1.49x	-3.9%	4.1%	15.7%	0.1%	0.1%	0.2%
Lundin Mining Corp.	SEK	47.34	Neutral	Neutral	50.0	51.0	6%	15.41x	9.19x	7.54x	4.97x	3.94x	3.04x	-1.24x	-1.00x	-1.27x	-5.9%	2.0%	11.0%	1.8%	1.7%	1.7%
Lundin Mining Corp.	CAD	6.67	Neutral	Neutral	7.3	7.5	9%	15.27x	9.10x	7.47x	4.91x	3.90x	3.01x	-1.24x	-1.00x	-1.27x	-5.9%	2.0%	11.1%	1.8%	1.8%	1.8%
KAZ Minerals Plc	GBP	553.60	Neutral	Neutral	575	450	4%	7.67x	9.45x	9.84x	4.66x	5.27x	5.41x	1.90x	2.20x	2.28x	-5.9%	-2.1%	-1.3%	0.3%	0.2%	0.2%
Aurubis AG	EUR	60.60	Neutral	Neutral	60.0	61.0	-1%	12.12x	14.98x	13.02x	5.38x	5.63x	5.01x	-0.53x	-0.96x	-1.04x	14.0%	8.9%	6.0%	3.4%	3.3%	3.5%
KGHM Polska Miedz SA	PLN	90.40	Sell	Sell	89	88	-2%	9.35x	8.15x	11.10x	4.60x	4.35x	4.34x	1.15x	1.01x	0.88x	8.5%	4.3%	5.7%	1.2%	1.0%	0.9%
Freeport-McMoRan Inc.	USD	13.95	Buy	Buy	18.0	19.0	29%	8.79x	18.66x	14.81x	4.43x	7.20x	6.30x	0.93x	1.38x	0.86x	13.4%	4.3%	9.8%	1.4%	1.4%	1.4%
MMG Ltd	HKD	3.95	Buy	Buy	5.80	6.30	47%	14.75x	8.39x	7.44x	6.69x	5.41x	4.72x	3.67x	2.69x	2.06x	16.0%	18.4%	18.7%	0.0%	0.0%	0.0%
Jiangxi Copper	HKD	9.03	Neutral	Neutral	11.5	12.7	27%	10.39x	10.10x	9.61x	5.36x	4.97x	4.50x	0.97x	0.91x	0.57x	-14.4%	2.9%	11.4%	4.0%	4.2%	4.4%
Jiangxi Copper	CNY	14.47	Neutral	Neutral	17.10	18.80	18%	10.39x	10.10x	9.61x	5.36x	4.97x	4.50x	0.97x	0.91x	0.57x	-14.4%	2.9%	11.4%	4.0%	4.2%	4.4%
Zijin Mining	HKD	3.03	Buy	Buy	3.8	3.9	25%	14.31x	14.05x	12.71x	6.02x	5.70x	6.26x	0.86x	0.58x	1.25x	8.9%	8.3%	9.2%	3.5%	3.6%	3.9%
Zijin Mining	CNY	3.57	Buy	Buy	4.80	4.90	34%	14.31x	14.05x	12.71x	6.02x	5.70x	6.26x	0.86x	0.58x	1.25x	8.9%	8.3%	9.2%	3.5%	3.6%	3.9%

** Denotes member of our Pan Europe Conviction Investment List*

Source: Factset, Company data, Goldman Sachs Global Investment Research

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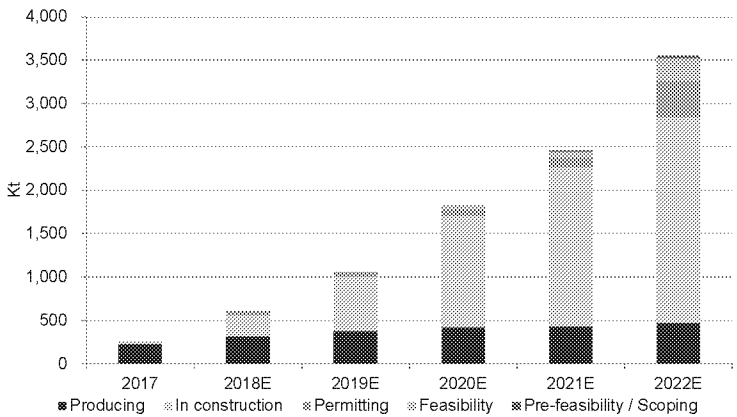
Supply: Pace of supply additions has slowed dramatically; country risks have increased

One big change from the 2017 edition of our report has been the pace of supply additions that we expect to come online in the next few years. Last year, we had forecast c.2.4 mn tonnes of new supply to come online between 2017 and 2020. Based on our latest models, we believe that a total of c.1.6 mn tonnes of new supply is set to come online between 2018 and 2020. While this partly reflects our removal of some projects that have come online/reached full production, the biggest reason for the decline in production adds is that the companies have continued to either delay or not move ahead with the growth projects as we had expected last year.

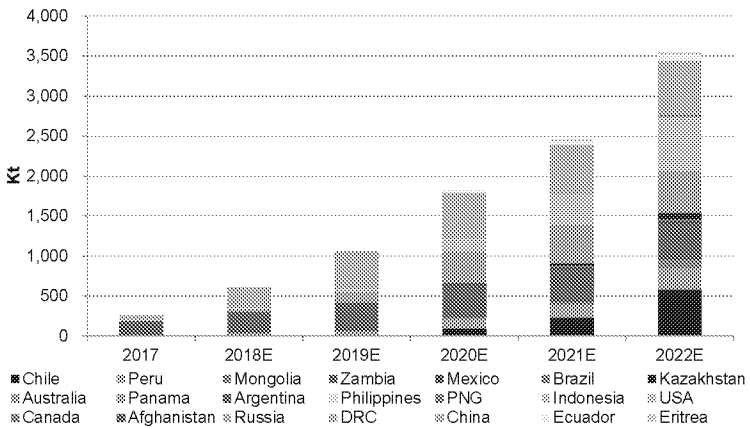
More than 60% of the production uplift according to our model is set to come from two countries – Zambia and DRC – where there has recently been a significant escalation in risk (a US$8 bn tax bill imposed on First Quantum in Zambia and material tension regarding new royalties in DRC). We do not expect the risk to subside in the near future.

Exhibit 13: On an unrisked basis, we expect a cumulative1.6 mn tonnes to be added to 2020
New copper production (Kt)



Source: Company data, Goldman Sachs Global Investment Research

Exhibit 14: More production is coming from risky jurisdictions
New copper production by country (kt)



Source: Company data, Goldman Sachs Global Investment Research

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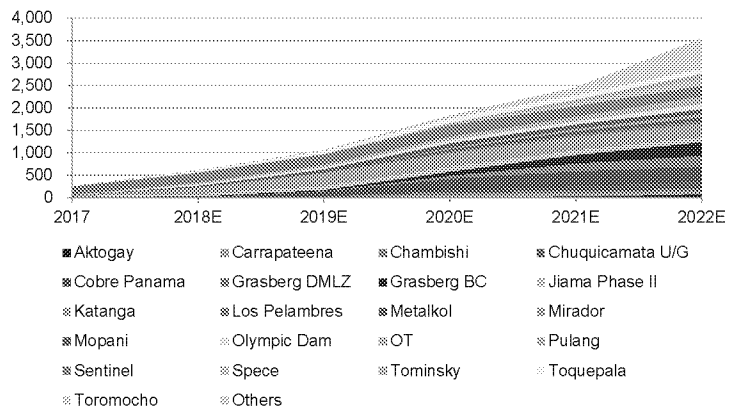
Few mines/companies contributing the most to supply increase; raises risk of disruptions

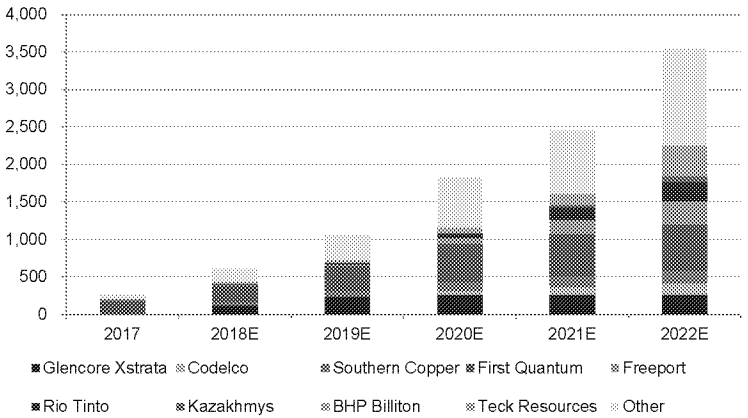
Another risk to a production uplift in the near-to-medium term is mine- and company-specific factors. Just three mines in our analysis (Sentinel, Cobre Panama and Katanga) contribute > 50% of the production increase we expect in the near term. Among these, we believe the majority of the risk relates to Cobre Panama and Katanga: Cobre Panama because it is a new mine that is scheduled to come online next year (new copper mines seldom reach their ramp-up targets) and Katanga given the risks associated with the jurisdiction (DRC). With regard to company-specific factors, the majority of the expected production increase comes from just 2-3 companies, with First Quantum and Glencore being the most important. While we do not foresee any company-specific factors affecting either of them, we highlight that risks do exist given the jurisdictions in which these companies operate.

Exhibit 15: c.50% of production increase to come from three mines in 2018/19E
Kt



Source: Company data, Goldman Sachs Global Investment Research

Exhibit 16: c. 40% of the production increase to come from 2-3 companies over the next two years
Kt



Source: Company data, Goldman Sachs Global Investment Research

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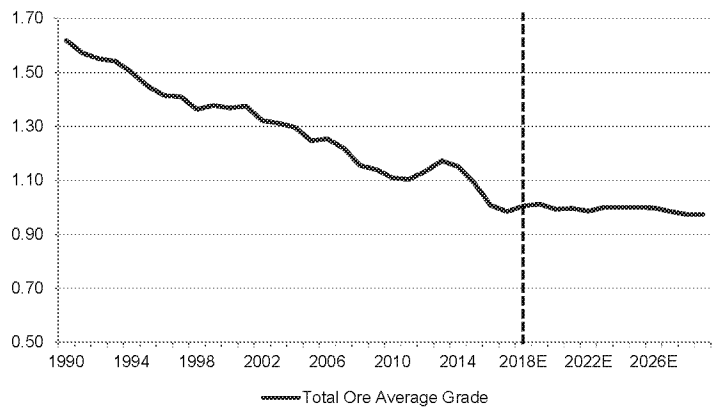
Grade decline presents risks to forecasts; risk of disruption to rise as mines move underground

One change in our view since our last publication relates to grade decline. Last year, our view was that the grade decline we observed was likely a function of the grades that miners were choosing to mine in response to lower prices, rather than underlying mine degradation. However, given that the decline has persisted despite the improvement in prices, we believe it reflects the natural degradation of the resource, which has positive implications for copper prices. While Wood Mackenzie forecasts grade to remain constant, we see downside risk to these estimates.

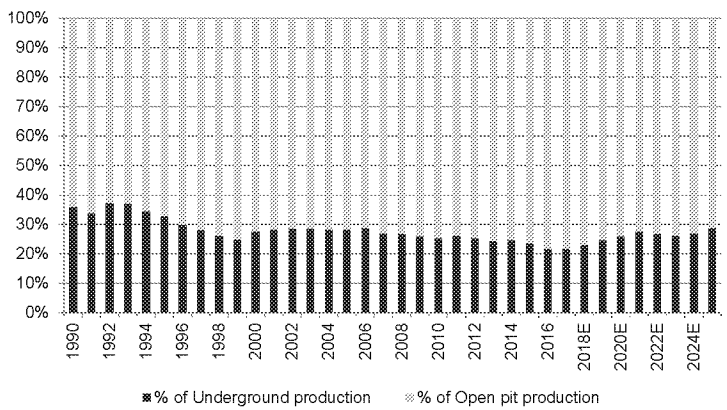
Another trend to keep in mind is the increasing number of mines moving underground. Wood Mackenzie forecasts the total proportion of underground operations to increase from c.22% as of 2017 to >30% by 2027. Underground mines by nature are riskier and are prone to disruptions, which could be a potential source of upside for copper prices in the longer term.

Exhibit 17: Grade has continued to decline over the last 3-4 years; this trend is likely to continue



Source: Wood Mackenzie

Exhibit 18: In addition, as the % of underground mines increases, the risk of disruptions is higher



Source: Wood Mackenzie

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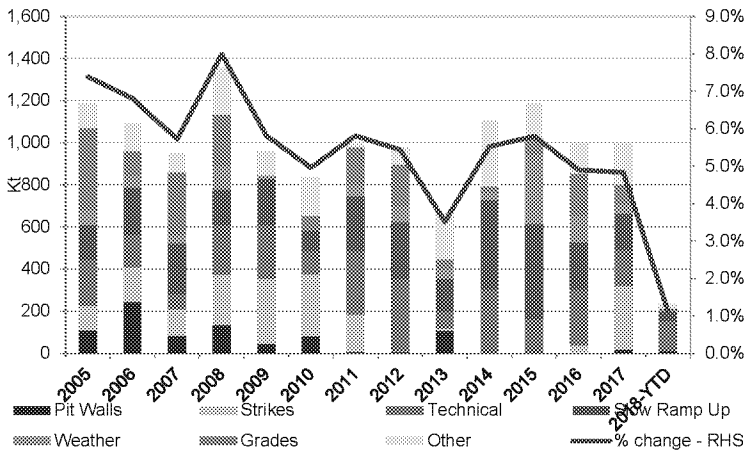
Disruptions: YTD disruptions have been running low on successful wage talks, strong productivity

YTD disruptions have been running at a historically low rate, primarily a function of almost no wage-related disputes. We had believed that given the number of wage negotiations this year, there would likely be a meaningful number of disruptions, which have not materialised. The low level of labour-related disruptions is atypical for the current level of margins. To a large extent, the strikes have been avoided because the companies have been more accommodative to workers' demands than observed historically. We find that during past strikes, the resulting pay deals were normally much closer to companies' initial offers than unions' proposals (see Metals Express: Copper labour talks - what does history say?).

In our view, one reason why companies have been keen to avoid strikes this year is the elevated level of uncertainty regarding the future demand outlook and direction of copper prices. In particular, China's high copper demand per capita relative to its income leads to concerns that the country has brought forward a large amount of its future copper consumption, creating significant downside risks to forward demand growth. Such concerns also contribute to the still depressed level of mining company valuations, in our view. Lastly, the push for higher productivity has seen mines running more smoothly than we would have anticipated at the start of the year.

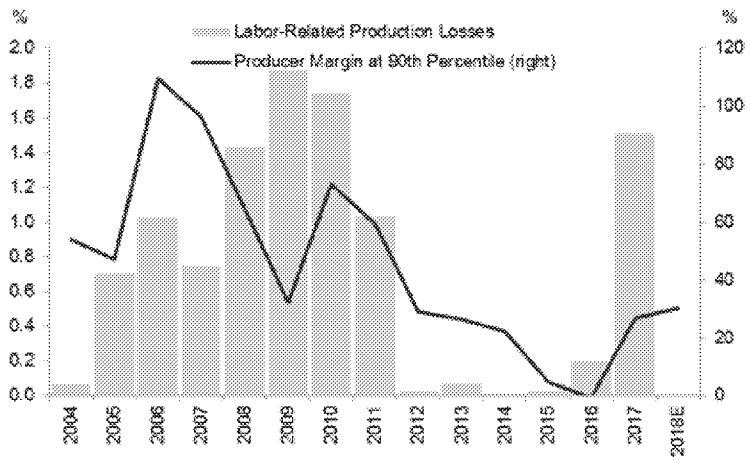
Exhibit 19: YTD copper disruptions have been at a historic low

Copper supply disruptions 2005-18 ytd



Source: Wood Mackenzie

Exhibit 20: Labour disruptions surprised to the downside in 2018



Source: Wood Mackenzie, Goldman Sachs Global Investment Research

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Rising ESG issues having an impact on copper production

While YTD disruptions are running at an all-time low, we highlight that there have been a number of issues building. These reflect factors such as more stringent environment/climate-related policies by governments and local/federal authorities and protests by local communities leading to mining stoppages and/or the cancellation of mining concessions.

- **Las Bambas**: Since the mine reached full production in 2016, it has faced a number of problems. The most recent source of tension relates to allegations by populations living near the highways where the trucks carry copper ply that the trucks are encroaching on their land and having an adverse impact on the local environment. This issue has persisted and presents a material risk to the copper supply; Las Bambas produces c.300ktpa of copper each year.
- **Pebble**: Continued opposition by local communities in Alaska has led to the US government reversing its stance on the project. When the Trump government took office in 2016, the EPA had said that it was working towards approving the copper project in Alaska. First Quantum had also been interested in the project at one point. However, the project has been put on hold as of now. While we include the project in our analysis, we ascribe a low probability to it coming online.
- **Grasberg**: While the ownership issues at Grasberg are heading towards a resolution, with the Indonesian government set to own c.51% of the mine by early 2019, one remaining issue is the management of tailings that are disposed of into the sea via the local river system. The environmental ministry had said earlier this year that the company needs to reduce the amount of tailings from 90% to 50%.

Overall, we believe that the focus by governments on environmental standards, and opposition to mining activity from populations living in surrounding areas, are likely to increase. As an example, the government of Chile recently announced that it is seeking to put restrictions on new water extraction rights from lithium-rich Salar de Atacama salt flats. The region is home to lithium miners such as Albemarle and SQM. Regulators have banned the issuance of new permits to extract water from south of Salar's watershed – a key water supply to the Escondida and Zaldivar mines. The proposal by BHP to cut water use has been deemed insufficient by the government. While the impact is not quantifiable as of now, we believe that governments (across the world) are likely to focus increasingly on environmental protection, which will increase the costs and complexity involved in the extraction of copper.

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Codelco, GLEN and Freeport: Three big determiners of copper supply

Codelco, Glencore and Freeport together account for c.25% of total copper production; this, as well as their significant pipeline of growth projects, makes them important for the copper market.

Codelco – multiple growth assets but capital a constraint

Codelco is the world's largest copper producer (c.10% of total copper produced in 2017). The company has multiple growth assets, Chuquicamata underground being the one that will deliver production near term; other assets are: Radomiro Tomic (Sulphides II) and Andina and El Teniente. These projects are still under study and are not expected to start production before 2023/24, as the company is currently prioritising spending on Chuquicamata underground given capital constraints and the significant debt load.

Despite declining copper grades, Codelco was able to raise year-on-year production in 2017, mainly due to strong performance from Chuquicamata and Andina. The company is now budgeting $21 bn through 2022 to maintain output levels after years of underinvestment. In June 2018, the Chilean government unveiled $1 bn of funding through February to support Codelco's growth projects and halt the decline in production levels. We view this as supportive of Codelco's plan to grow its copper production profile.

Chuquicamata: The mine is moving from an open pit mine to a modern underground operation with more mechanised processes in order to cut costs and raise production rates. This has caused concern among workers at the mine, who went on strike in July to protest against the underground plan. According to the latest news flow, the underground portion of the mine should start to produce copper from 3Q19; however, we take a more cautious view and assume first production in 2020.

Andina Phase II: The second phase of the project is to ramp up daily processing capacity by 150kt to 244kt. However, at the beginning of 2018, Codelco announced that it would alter the Andina mine plan as a result of glaciers. This will take approximately three years to carry out and is reliant on the improvement of the environmental impact study. We expect the project to be delayed, with construction set to start in 2019 and first production to take place in 2024.

El Teniente: The mine is the world's largest underground copper mine. In early 2018, it was facing medium-term copper production challenges owing to declining grades and the depletion of some of the current exploration areas. To address this, the company is working on the development of the NNM (Nuevo Nivel Mina), where we expect first production in 2023; revised capex of $5 bn (from $3 bn) was announced in July. The project should prolong production at El Teniente for an additional 50 years, allowing the division to maintain copper production of around 400ktpa.

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Radomiro Tomic: The mine is currently undergoing phase 2 of development, which will include two dedicated 100kt/d concentrators. The project is in the feasibility stage, with Codelco already receiving EIA approvals. The next stage of the project is approval by the Codeclo board and Cochilo. Given the lack of news flow on the project and the prioritisation of the Chuquicamata mine, we assume the mine comes online in 2024.

Exhibit 21: Codelco has a number of growth projects but is focused on Chuquicamata for now
Codelco growth projects

Codelco				
Key Metrics	Chuquicamata	Andina Phase II	El Teniente	Radomiro Tomic
Project status	Construction	Feasibility	Construction	Pre-feasibility
Start Year	2020	2024	2023	2024
Capex ($ mn)	4,200	7,600	5,100	5,900
Average Production (ktpa)	329	343	407	343
Life of Mine	29	19	28+	27+
IRR (%)	13%	9%	13%	15%
NPV @ 8% (incl. sunk) (US$ mn)	4,203	319	3,497	3,654
NPV @ 8% (2017+) (US$ mn)	8745	319	409	4306
Reqd Copper Price ($/t)	7,482	8,796	7,460	6,553
C1 cash cost($/t)	3,181	3,161	3,627	3,239

Source: Company data, Goldman Sachs Global Investment Research

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Freeport/Grasberg agreement after years of negotiations; production ramp-up still a concern

After several years of negotiations between Freeport and Indonesia, a binding agreement with PT Indonesia Asahan Aluminium was signed on September 27, 2018 regarding the divestment of a stake in Freeport's Grasberg mine. The overall deal size announced is the same as that highlighted in July's Heads of Agreement ($3.85 bn total proceeds, with $3.5 bn of proceeds for Rio's stake and $350 mn for Freeport's stake), but additional clarity was offered on the timing of the transfer of the stake, the path to resolving environmental claims and agreements on operating rights going forward.

Historically, the negotiations were centred on the ownership of the Indonesian Grasberg mine. The Indonesian government wanted Freeport to sell a part of the Grasberg stake to local investors to meet requirements for government ownership of at least 51% for the asset. This is part of a broader push by Jakarta to give Indonesians greater control of the country's natural resources. Production from the open pit mine is expected to end in 2018-19, with the mine transitioning to a fully underground operation by 2020.

Current structure

Under the current structure, Freeport owns a 90.64% stake in Grasberg through an 81.28% interest in PT-FI and an additional 9.36%. As part of this arrangement, Rio Tinto has also received a small, variable stream of the revenues depending on certain production thresholds, and after mining through a certain region of the Grasberg deposit was complete (planned for 2022-23), Rio Tinto's stream would increase to a full 40%, with the jointly owned PT-FI receiving the remainder. Effective ownership of Grasberg after this point would be Rio Tinto 40%, Freeport 54.4% (60% x 90.64%), and Government of Indonesia 5.6% (60% x 9.36%).

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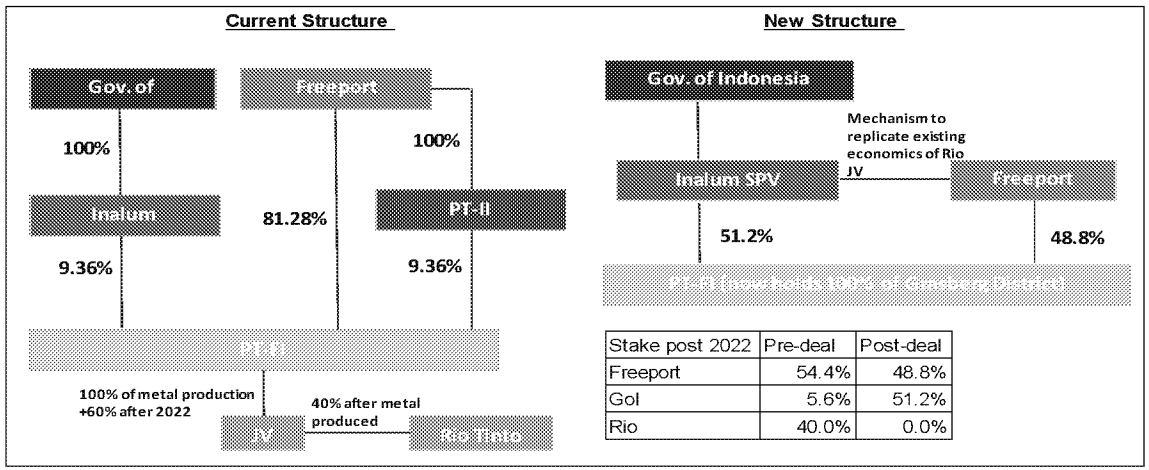
Exhibit 22: Grasberg: New structure vs. old structure



Stake post 2022	Pre-deal	Post-deal
Freeport	54.4%	48.8%
GoI	5.6%	51.2%
Rio	40.0%	0.0%

Source: Company data, Goldman Sachs Global Investment Research

New structure

Under the proposed new structure, Rio Tinto's JV interest would be converted to a share of PT-F that would transfer to Inalum (for $3.5 bn), with Freeport then divesting a 9.36% stake (for $350 mn) in PT-FI to Inalum. As shown above, effective ownership of Grasberg would then be split between Freeport, with a 48.8% stake in PT-FI ([90.64% - 9.36%] x 60%), and Inalum owning the balance of 51.2% – giving the government a stake of over 51%, which has been its long-term objective. Freeport would remain the operator of the mine despite Indonesia owning a majority of the equity and there will be no requirement for Freeport to divest any additional interest in the mine.

Under the terms of the new agreement, Freeport's cash flows would remain essentially the same as under the current structure, as the company would continue to receive the vast majority of cash flows through the period until which Rio Tinto's 40% interest would have kicked in. The only difference would be due to the immediate dilution of 9.36% ownership to Inalum for $350 mn, leaving FCX with an effective 81.28% of medium-term cash flows instead of 90.36%. Inalum will also fund the capital required for underground development that would have been contributed by Rio Tinto.

As part of this new structure, Freeport will construct a new $3 bn copper smelter in Indonesia within five years of the completion of the transaction. The capital is likely to come from project financing, with Freeport and Inalum contributing only limited equity if necessary.

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Exhibit 23: Freeport has two projects at Grasberg that are being ramped up
Freeport growth projects

Freeport		
Key Metrics	GrasbergDMLZ	Grasberg BC
Project Status	Construction	Construction
Start Year	2015	2016
Capex ($ mn)	3,200	6,700
Average Production (ktpa)	125	246
Life of Mine	21	24
IRR (%)	13%	13%
NPV @ 8% (incl. sunk) (US$ mn)	2,998	5,817
NPV @ 8% (2017+) (US$ mn)	5,346	-169
Reqd Copper Price ($/t)	7,180	7,514
C1 cash cost($/t)	453	306

Source: Company data, Goldman Sachs Global Investment Research

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Glencore's DRC concerns have eased, ramp-up progressing

On April 22, Katanga Mining Limited announced that its JV partner in the DRC, the state-owned Gecamines, had commenced legal proceedings in the DRC to dissolve its 75%-owned Kamoto Copper Company (KCC) following its alleged failure to address capital deficiency. The alternative was to give Katanga some time to request the appointment of an expert to assess and report on KCC's financial position.

Following this, on April 27, 2018, Ventora Development Sasu served freezing orders in the DRC against Mutanda and Kamoto Copper Company for approximately $695 mn and $2.28 bn, respectively. According to Ventora, Mutanda had breached an agreement in which it was required to make royalty payments to Ventora. In addition, Ventora said that KCC had breached an agreement between KCC, Gecamines and AHIL for which it was entitled to damages of $2.29 bn. On April 28, Ventora obtained from Kolwezi high court injunctions to pay against KCC and Mutanda in the amount of c.US$2.9 bn, which, if they had become permanent, would have allowed Ventora to permanently seize the assets; this would, in our view, have been detrimental to the investment view (AHIL/Ventora own royalties on Katanga/Mutanda).

On June 12, Glencore announced the settlement of the legal dispute with Gecamines and an agreement for the resolution of the capital deficiency at Katanga's 75%-owned DRC operating subsidiary KCC. This resulted in Glencore making a one-time payment of $150 mn to Gecamines and a $5.6 bn write-off of the $9 bn intercompany loan made to KCC. A couple of days later, Glencore announced that it had settled the dispute with Ventora and Africa Horizons regarding the non-payment of royalties. Mutanda and KCC will pay the royalties when they become due in non-US dollars, without involving US persons, in order to fulfil their obligations under the terms of the pre-existing contracts. We believe this has allayed investor concerns over Glencore's DRC assets being under threat of seizure.

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Glencore: Katanga and Mopani ramp-up on track

Having shut down the Katanga and Mopani in 2H15 as copper prices fell, Glencore is well on the way to ramping up production at the two mines.

Katanga: The mine, located in the DRC, has now reached commercial production and is ramping up, with recent guidance pointing to production of 150kt for 2018 and 300kt in 2019. The mine recently faced legal and regulatory issues (explained above), but most have now been resolved. We still model the mine achieving its targeted production. The mine is of particular importance to Glencore given we expect it to produce 34.5ktpa of cobalt from 2019 onwards.

Mopani: Glencore has spent over $1 bn since 2014 for the development of new shafts that are expected to increase the mine life by c.25 years. The expansion is expected to add c.90ktpa of copper, with recent news flow suggesting first production in 2H18 and full ramp-up to name-plate capacity by 2020. Given that the majority of capex has already been spent, we believe the likelihood of reaching full capacity by 2020 is high.

Exhibit 24: Glencore has four growth projects, of which Katanga and Mopani are ramping up
Freeport growth projects

GLENCORE				
Key Metrics	Katanga WOL	Mopani upgrade	El Pachon	Collahuasi
Project Status	Construction	Construction	Pre-feasibility	Pre-feasibility
Start Year	2017	2018	2026	2025
Capex ($ mn)	1,159	1,025	2,026	4,350
Average Production (ktpa)	274	95	277	292
Life of Mine	17	26	25+	26+
IRR (%)	198%	19%	13%	15%
NPV @ 8% (incl. sunk) (US$ mn)	17,184	2,126	1,699	2,888
NPV @ 8% (2017+) (US$ mn)	17,567	3,161	1,699	2,888
Required Copper Price ($/t)	-1,243	5,489	10,029	6,651
C1 cash cost($/t)	-2,170	2,333	3,534	3,229

Source: Company data, Goldman Sachs Global Investment Research

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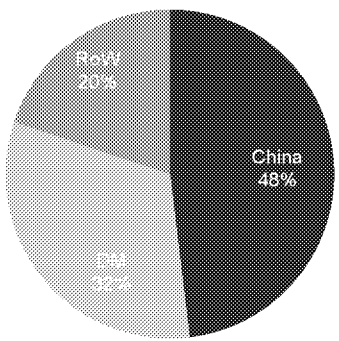
Demand: Outlook has muddied, but overall remain positive

At the start of the year, we were positive on copper, led primarily by the fact that even as China was slowing, the rest of the world (DMs and EM ex. China) was growing at a very strong rate – the DM CAI (a proxy for growth) was at 3.6% as at January 2018 and EM CAI was at 7.1%. These numbers remained strong, while the further slowdown that the market appeared to be expecting in China did not materialise. China CAI strengthened from 7% as of December 2017 to 8% in February 2018.

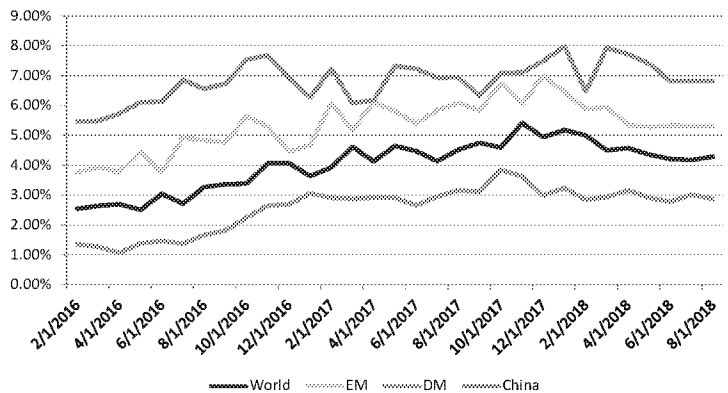
More recently, however, the view has changed. EM growth has been a source of investor concern given disappointing data coming out of South Africa and the recent slowdown in Turkey, among others. DM growth has also come down from very high levels – 3.6% (CAI) as of December 2017 – to a more normalised level of 3%. China remains a key uncertainty, with growth being very volatile.

Exhibit 25: China and DMs form c. 80% of the total copper demand
2017 copper demand by region



Source: Wood Mackenzie

Exhibit 26: Growth expectations, while still high, have reset to a more normalised level
Current Activity Indicators



Source: Bloomberg

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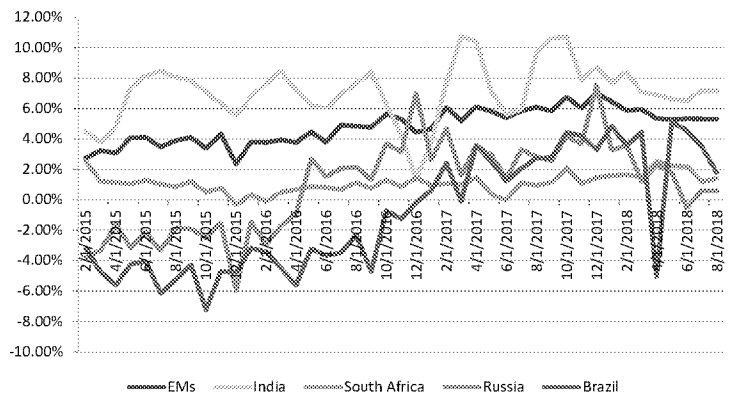
Growth, especially in EMs, has been negatively affected by recent developments

Both DMs and EMs (ex. China) are continuing to grow at a healthy pace despite the recent speedbumps. The majority of the recent concerns by investors have related to EMs, with DM growth remaining strong:

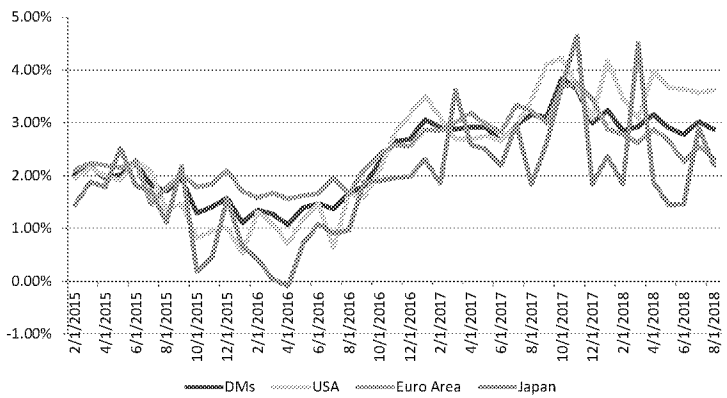
- **EMs**: Emerging markets ex. China have been under the spotlight recently, especially after the currency events in Turkey. This brought to the forefront growth concerns that had been present for the past few months, particularly in economies such as South Africa (which printed negative GDP growth in 2Q), Argentina, Russia and Brazil among others. Despite the recent developments, our economists expect roughly flat EM growth over the last three months (with the CAI at 5.3% in August).
- **DMs**: Despite the recent slowdown in the Euro area (where the CAI has come down from 3.75% to 2.55%), the overall CAI has remained robust at around 3%. Strong DM growth has been a function of strong US growth, among others. Our economists remain positive on DM growth, forecasting GDP growth of 2%-3% over next three years.

Exhibit 27: While some countries in EM have been choppy, growth has remained robust
EM CAI



Source: Bloomberg

Exhibit 28: DM growth has been more robust despite some economies registering choppy growth
DM CAI



Source: Bloomberg

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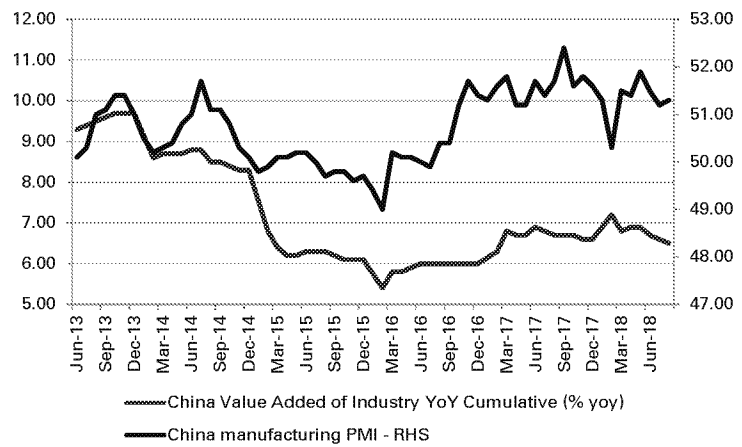
China: Recent data has been disappointing, but policy stance supportive

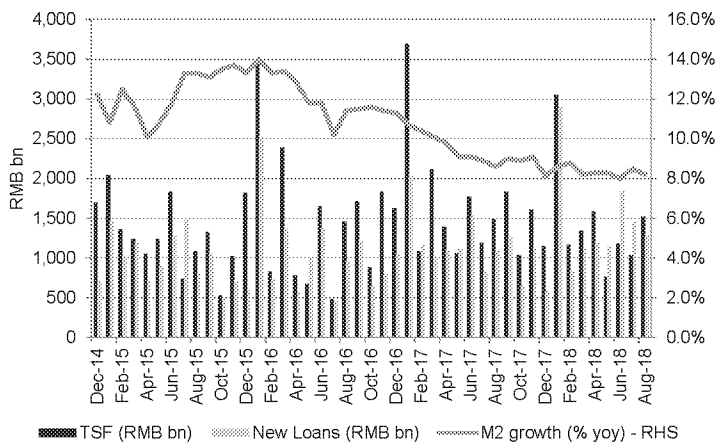
Recent China data has been disappointing, primarily the hard data that came out for the month of July, such as industrial production and FAI. This comes amid a focus by policymakers on targeting shadow lending activity to control financial risks. While our economists believe the campaign to curtail the shadow banking portion of credit has been successful (total social financing has been less than new loans for the last three months), some investors have been concerned that continued tightening will lead to China growth slowing given the disappointing data over the past couple of months. Against this backdrop, our economists believe there are other tools at the disposal of policymakers to ensure growth remains robust, as we discuss in the next section.

Exhibit 29: China data has been disappointing, both soft (PMI) and hard (IP)...



Source: Bloomberg

Exhibit 30: ...amid tightening credit (mainly reflecting a government focus on shadow banking)



Source: Bloomberg

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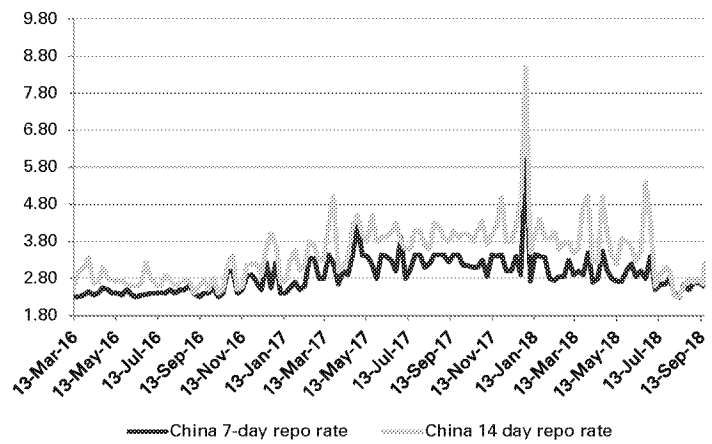
Recent policy comments have been supportive of growth

More recently, the rhetoric from China's policymakers has turned supportive of growth. This has come as more recent activity data has been disappointing amid the ongoing trade tensions. Policymakers have started loosening despite maintaining their focus on shadow banking. The loosening has been via other mechanisms – cutting money market rates and increasing the size of new loans (loans offered via official channels). In addition, for the first time in almost a year, policymakers have started to approve infrastructure projects, which is a clear positive for commodity prices.

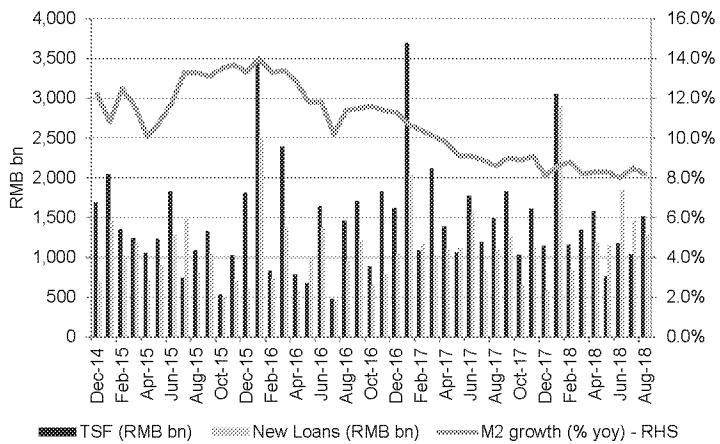
- The PBOC report released recently extended the dovish tone of policymakers. Our economists see increased flexibility by the PBOC to cut interest rates on key monetary facilities (e.g. OMOs) to guide funding costs lower as needed. The quarterly report highlighted that fiscal, regulatory and structural support is required to ensure effective monetary policy transmission.
- Money market rates have continued to drop, with the interest rates on short-term loans between Chinese banks having sunk to three-year lows in a bid to boost onshore demand. Our economists continue to expect policymakers to guide rates down to support growth.

Exhibit 31: China money market rates have dropped significantly



Source: Bloomberg

Exhibit 32: Most recent money data from China has been strong too



Source: Bloomberg

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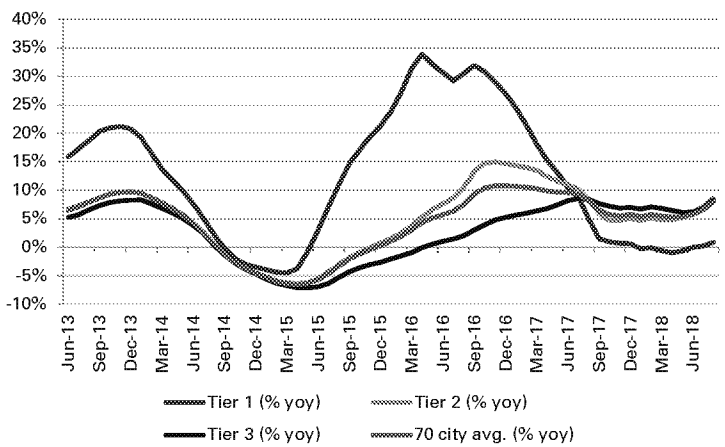
China property: While restrictions likely to remain in place, demand remains robust

The Chinese property market is likely to be biggest risk facing the Chinese economy and thus copper demand in the next 12 months, bar any significant escalation in trade tensions. Policymakers have been focused on restraining rising house prices by reining in speculative demand, and have considered imposing property taxes on homes in order to stabilise prices. Throughout 2017, the policies had the highest impact on property prices in Tier 1 cities, where prices fell throughout most of the year. However, the recent rebound in prices has been reflected in growing confidence from the country's developers as new starts have begun to rise again.

Property remains the biggest unknown in the Chinese demand equation. There has been conflicting news flow (Bloomberg) around what policymakers are looking to do. Some reports have suggested that China could seek to ban pre-sales (SHRPROP, the China property index, was down 3% on this news), while other reports have suggested that Shanghai could look to relax rules on mortgages, which would be a positive for demand. Overall, however, the data from China continues to look solid.

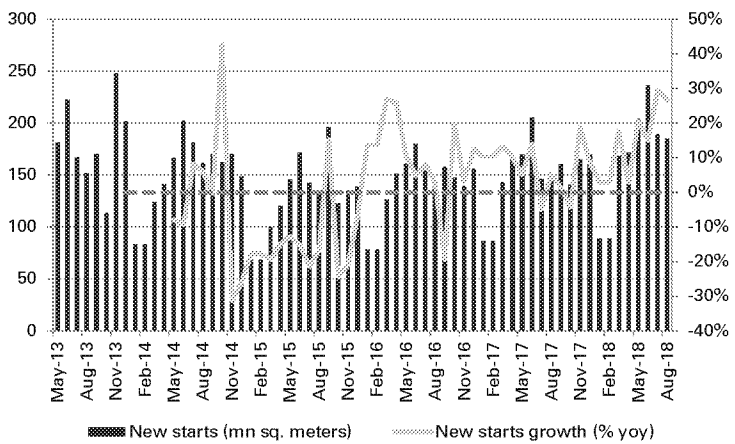
An important point to remember is that while property prices might decline, new starts are key, as they are the main determinant of commodity (including copper) demand.

Exhibit 33: Property prices have risen despite stringent restrictions applied by policymakers
China property prices (by tier)



Source: Bloomberg

Exhibit 34: New starts have begun to rise as higher profits have driven developers to increase development activity
China property new starts



Source: Bloomberg

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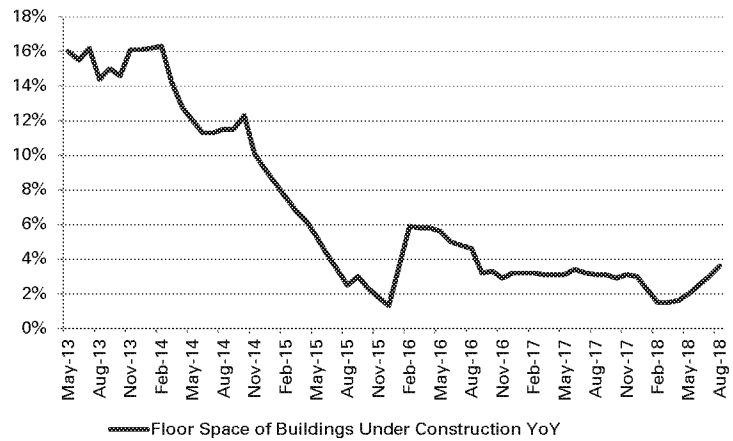
Future property pipeline looks robust; should be positive for demand

As discussed above, property datapoints – new starts and property prices – have been robust this year despite significant investor positioning to the contrary early in the year. While this is important, future demand is our focus in this section. Early data points indicate a strong pipeline of property development: floor space of buildings under construction and land sales have been strong YTD. This, in our view, is likely to be positive for future copper demand, as there is a lag of 18-24 months between construction starting and copper demand manifesting.

Exhibit 35: Growth of floorspace construction has rebounded this year, which is a positive for copper demand

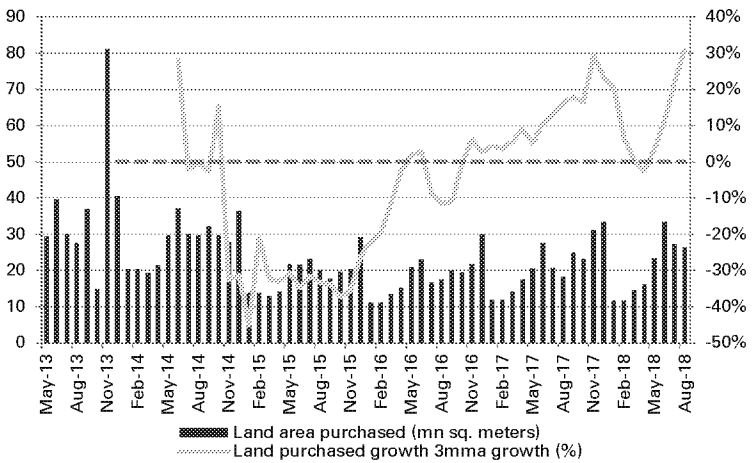
Floor space of buildings under construction (% yoy)



Source: Bloomberg

Exhibit 36: Land purchased by property developers has been rising

China land purchased for construction activity



Source: Goldman Sachs Global Investment Research

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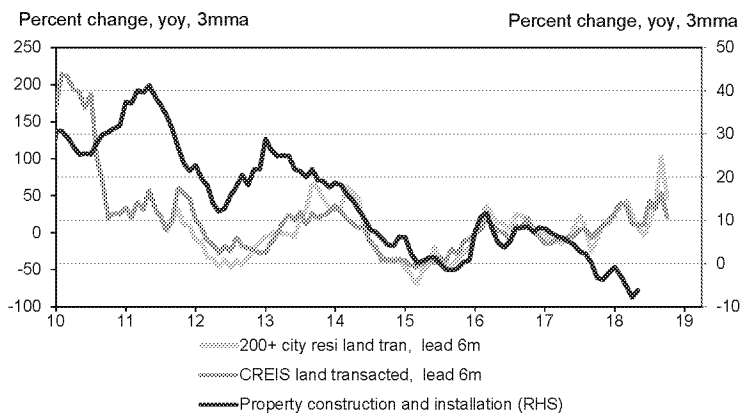
See upside in fixed investment as policymakers look to shore up growth

In a recent note, our economists noted that the "policy put" from policymakers is likely to come from a pick-up in infrastructure spending.

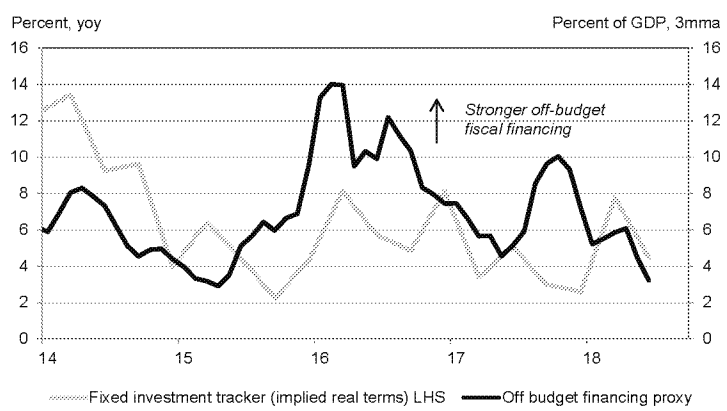
- Our economists see potential for property construction growth to normalise higher. Exhibit 37 illustrates the divergence in the trend of property construction vs. land transactions over the last half a year, but the recent faster home sales should help unclog the property pipeline and support a narrowing of this gap. Still more importantly, given the policy focus on local government spending as a primary lever to manage growth, they expect stronger infrastructure investment in the coming months to largely offset any residual weakness in headline activity.
- They also believe that a meaningful increase in their proxy for off-budget fiscal financing would send a favourable signal for near-term fixed investment. The proxy was still subdued for July, but in August the pace of special municipal bond issuance (a main sub-component of their proxy) encouragingly accelerated further, to more than RMB400 bn, and they believe that it should remain strong in the next two months.

Exhibit 37: Upside potential for property construction in the coming months



Source: CREIS, CEIC, Goldman Sachs Global Investment Research

Exhibit 38: A rise in off-budget fiscal financing would send a favourable signal for near-term fixed investment



Source: Goldman Sachs Global Investment Research

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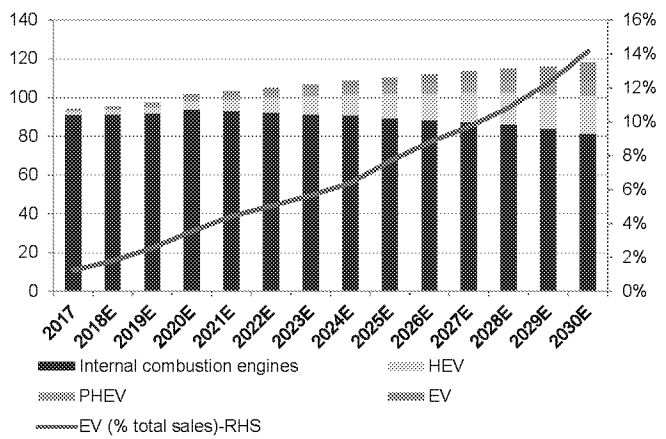
Electric vehicles driving demand for copper

The future of EVs is ultimately dependent on supportive policy and sufficient infrastructure development (e.g. charging). Following our original analysis of the impact for copper demand in 'Copper: Top Projects 2017', we extend our forecasts to 2030 and add a consideration for the charging infrastructure that will be required alongside the copper that the vehicles will demand. Analysis by our Autos team suggests EV penetration could reach 8% by 2025 (see 'Electric Vehicle Boom: ICE-ing the combustion engine') and gain momentum from there, resulting in a potential cumulative incremental copper demand of 21.8 mn tonnes by 2030 including charging units. Given that the growth of EVs could vary significantly, we consider bull/bear cases that imply cumulative copper demand of 18.8 mn/27.9 mn tonnes respectively over the next 13 years.

EV penetration at 8% by 2030 demands 4.4 mn tonnes of copper by 2030

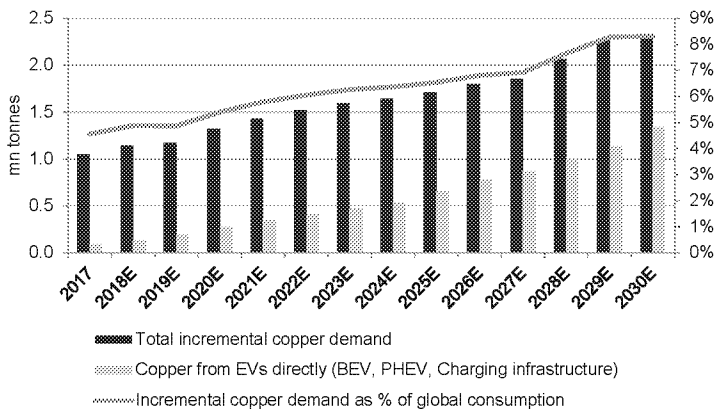
Copper's high electrical conductivity and efficiency make it an important metal for electrification. Not only is it found in the electric motor, but in the battery and cabling of electric vehicles; copper content scales up from 39kg in hybrids to 83kg in fully battery powered vehicles. At an EV penetration rate of 8% by 2030, we forecast copper demand to reach 7.5 mn tonnes cumulatively from PHEVs (plug-in electric vehicles) and BEVs (battery electric vehicles) combined.

Exhibit 39: EVs and PHEVs to reach 14% of the global fleet by 2030E, as ICEs are gradually phased out...
Vehicle sales (millions)



Source: Goldman Sachs Global Investment Research

Exhibit 40: We estimate copper demand from EVs to reach 8% by 2030, a cumulative 7.5 mn tonnes from 2018
Incremental copper demand of BEVs combined with charging infrastructure, total demand from vehicles and % of global copper consumption



Source: Goldman Sachs Global Investment Research

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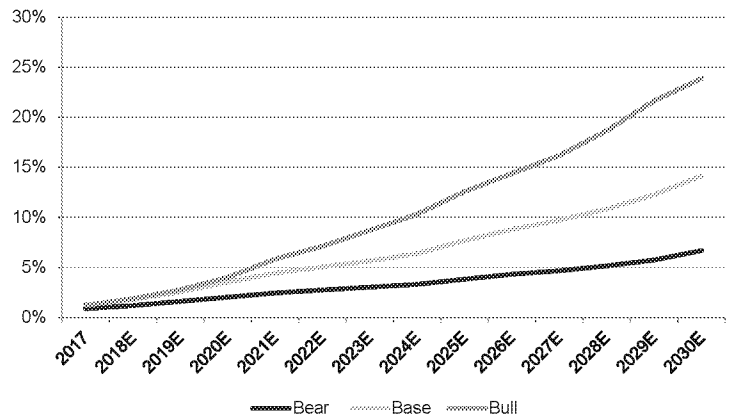
The bull and bear case for copper based on EV penetration

Government policy will be crucial to EV growth. Incentives, including subsidies, have potential to promote an increased market share. Similarly, the withdrawal of such benefits could result in a slowdown in EV adoption (e.g. as in Denmark). However, the cost of the battery is also influential, and as it continues to decrease, EV sales should increase significantly. Our Autos team forecast a rapid uptake in EVs once the payback period hits three years. For the bear case, we have adjusted the relative share of each vehicle type such that EVs with PHEVs represent only 4% of total vehicles in 2025 (vs. 8% in the base case and 14% in the bull case). This could be a more likely scenario if governments are slow to encourage their populations to buy an electric vehicle, or do not invest enough in the necessary infrastructure.

Exhibit 41: The rate at which EVs gain a share of the global fleet is dependent on policy, battery cost and infrastructure

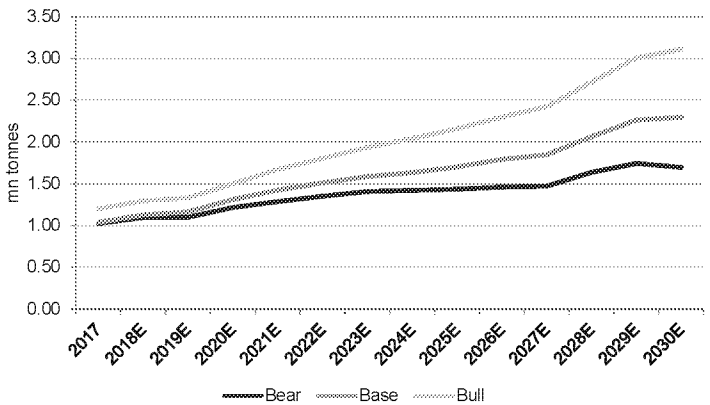
Bear/base/bull case for EVs and PHEVs as % of total autos



Source: Goldman Sachs Global Investment Research

Exhibit 42: Depending on this penetration rate, incremental cumulative copper demand could range from 18.8 mn to 27.9 mn tonnes by 2030

Bear/base/bull case from incremental copper demand in mn tonnes



Source: Goldman Sachs Global Investment Research

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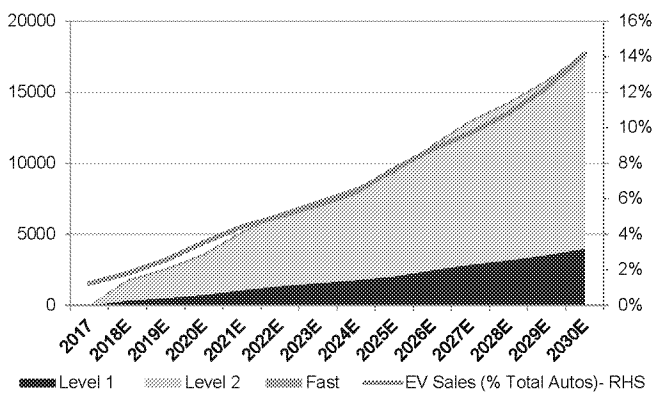
Electric vehicles need to be charged...

Currently, development in charging infrastructure is slow. This is a chicken and egg situation: drivers are reluctant to purchase electric vehicles until there is sufficient charging infrastructure, while governments are hesitating to provide such infrastructure until battery-powered cars become more dominant. In their report 'From Pump to Plug', our colleagues forecast the investment required for sufficient charging infrastructure by charging habits and charger types. EVs will likely primarily be charged by Level 1 and 2 chargers at home and at work, and may be wall-mounted or pedestal. Level 2 chargers are expected to dominate, with most cars being charged overnight as this would be sufficient to cover the majority of journeys (<200km). Level 1 chargers (1.3-1.9kW) are able to cover >75% of typical trips driven a day, but for the <6% of journeys over 200 km, fast chargers (50-150kW) along motorways will boost range. Resultant copper demand has been calculated on the assumption (based on data complied by Goldman Sachs) that Level 1 and 2 chargers contain 0.25kg of copper per kilowatt, while fast chargers have 0.04kg Cu/kW. Furthermore, we assume that Level 1, 2 and fast chargers have charging capacity of 1.9kw, 7kW and 75kW respectively. Various estimates by industry experts suggest that copper demand from required infrastructure is equivalent to 4-9x that of charging units, for which we input 4x. Hence, combined with the annual additions of charging units by type, the copper demand from charging infrastructure scales up from 0.02 mn to 0.1 mn tonnes over the next 13 years. Given that the demand from the charging units alone is small relative to the vehicles, our rough estimate for additional charging infrastructure of 4x vs. 9x is likely to have little impact.

Exhibit 43: Level 2 chargers to dominate the infrastructure, with <6% fast chargers required for backup...

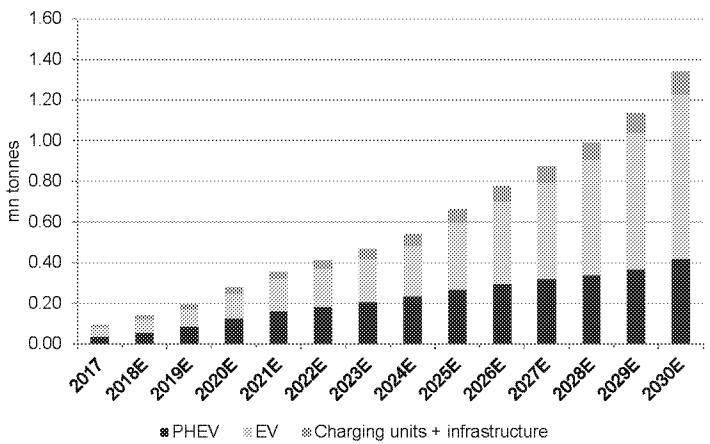
Charging additions (millions of units) for each charger type alongside EV penetration rate...



Source: Goldman Sachs Global Investment Research

Exhibit 44: ...but the amount of copper in the chargers is a small fraction of that in the vehicles themselves

Copper demand from electric vehicles and charging units in millions of tonnes



Source: Goldman Sachs Global Investment Research

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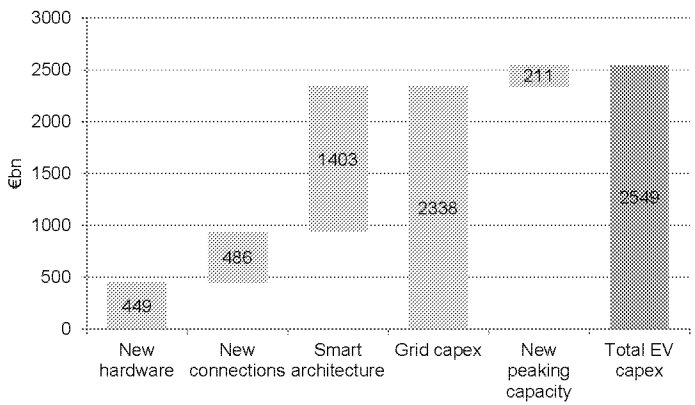
...and chargers need to be connected to the grid

While the charging units alone demand a relatively small amount of copper, the cabling between units and connection to an electricity supply will require more. An EV global fleet penetration of 10% would require 220 mn chargers and c.$800 bn of grid investment for transformers, new lines and smart infrastructure. However, once EV penetration surpasses 25%, the grid itself will need to be upgraded to cope with increased electricity demand (note that one home-charging unit is considered to have the same demand as a whole house). Considering hypothetical full electrification, the capital expenditure requirement could amount to c.US$2.3 tn for charging infrastructure alone, in addition to c.US$2.6 tn for the power network. Furthermore, the large percentage of copper in potentially necessary new transformers and substations for a grid upgrade could inflate our estimate for total copper demand, assuming that there are more installed than replaced, but such data is difficult to obtain reliably.

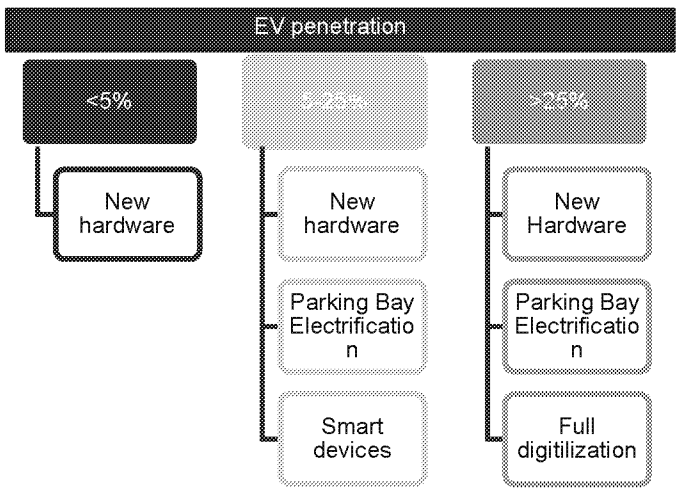
Limitations on fast EV adoption relate to the number of electric vehicles coming to market, how fast they come to market and how electricity supply will have to be upgraded to cope with increased demand.

Exhibit 45: To support full electrification by 2050, the grid would need to be upgraded completely, requiring significant investment...
Capital expenditure required for each component of EV infrastructure in € bn by 2050



Source: Goldman Sachs Global Investment Research

Exhibit 46: ...which will scale with the EV penetration rate
Infrastructure required as EV penetration increases



Source: Goldman Sachs Global Investment Research

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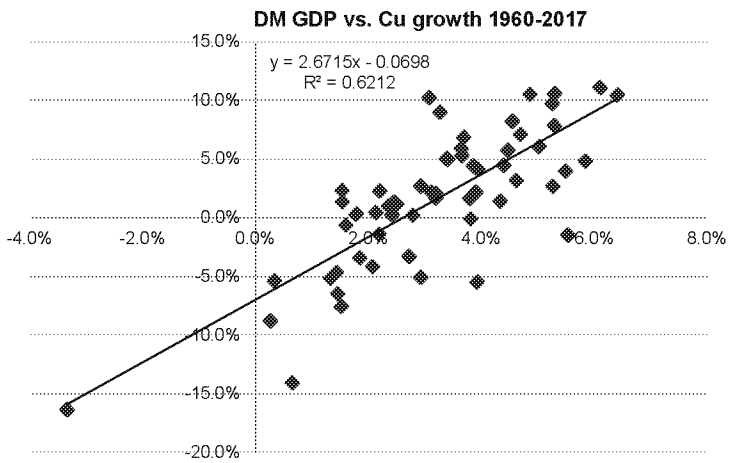
Strong DM growth to see consumption to increase, albeit at a low rate

Copper demand in developed markets (DMs) grew by an average c.2.8% pa over the 40 years to 2000. However, with the shift of production to the east, and stagnating economic growth over the past decade, DM copper consumption growth ran out of steam (2001-16 average copper consumption contracted at an average rate of 1.6%). While previously, we expected copper consumption in DMs to continue to decline, given the recent strength in growth, we now expect consumption to grow in the next few years.

Copper consumption intensity in DMs has peaked, however, and is on a path of slow decline. Our Commodities team forecasts copper consumption in OECD countries to grow this year and next before flattening out in 2020. One of the factors underpinning our positive thesis on copper is above-trend DM growth. Developed market copper consumption growth shows a relatively strong correlation to GDP growth over both periods; we observe a slightly stronger relationship more recently, with the R^2 increasing to 0.64 from 0.62 in 1960+.

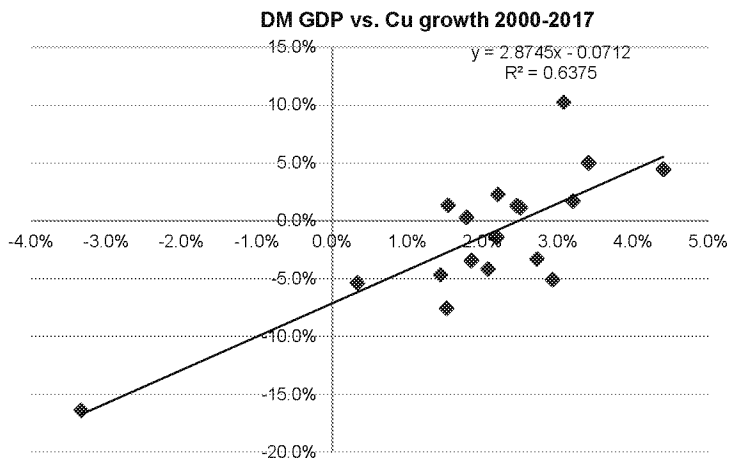
The exhibits below show the relationship between developed market copper consumption growth and GDP growth since 1960, and in 2000-17, respectively.

Exhibit 47: DM copper consumption correlates with GDP growth
Developed market copper consumption growth vs. GDP growth 1960-2017



Source: The Conference Board, Wood Mackenzie, CRU, Goldman Sachs Global Investment Research

Exhibit 48: Stronger correlation to GDP growth over the past ten years
Developed market copper consumption growth vs. GDP growth 2000-2017



Source: The Conference Board, Wood Mackenzie, CRU, Goldman Sachs Global Investment Research

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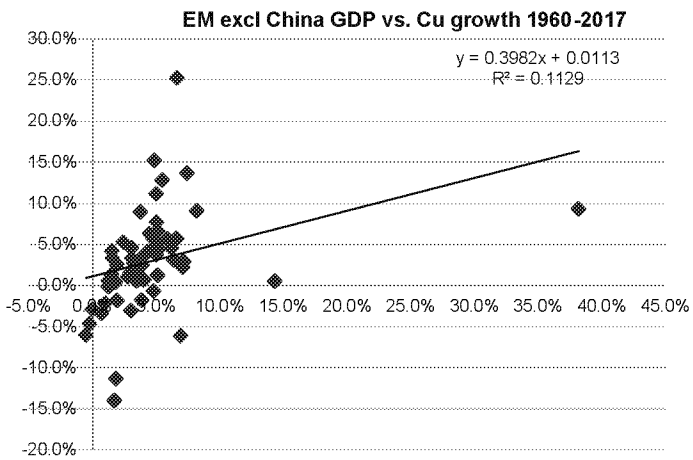
Fixed investment the key in EMs

Copper demand in emerging markets (EMs) grew by an average c.4.1% over the 40 years to 2000, accelerating to c.8% in 2000-17. However, most of the growth over the past decade has resulted from the emergence of China. Chinese copper consumption growth has averaged 12% pa over the past 17 years, with other emerging economies averaging growth of 4% pa. This bifurcation in copper consumption growth requires that we separately forecast copper demand for China and other emerging economies. First, we look to identify the main economic drivers of copper consumption growth. The exhibits below show the relationship between copper consumption growth and GDP growth since 1960 in China and other emerging economies.

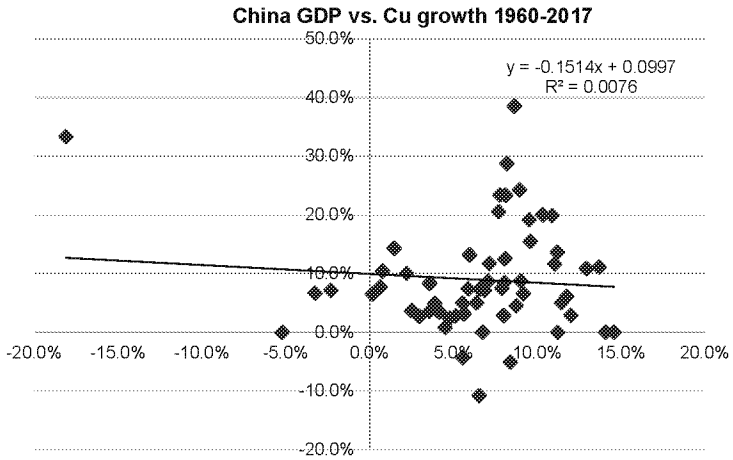
It is evident that over this period, there has been no clear relationship between copper consumption growth and GDP growth in China or other emerging economies. We believe the main reason for this has been the planned nature of development and central government backing in China and the former Soviet Union, which makes the level of fixed asset investment (FAI) a more relevant metric.

Exhibit 49: Little copper consumption and GDP growth correlation in EMs...
EMs ex. China copper consumption growth vs. GDP growth, 1960-2017



Source: The Conference Board, Wood Mackenzie, CRU, Goldman Sachs Global Investment Research

Exhibit 50: ...and China
China copper consumption growth vs. GDP growth, 1960-2017



Source: The Conference Board, Wood Mackenzie, Goldman Sachs Global Investment Research

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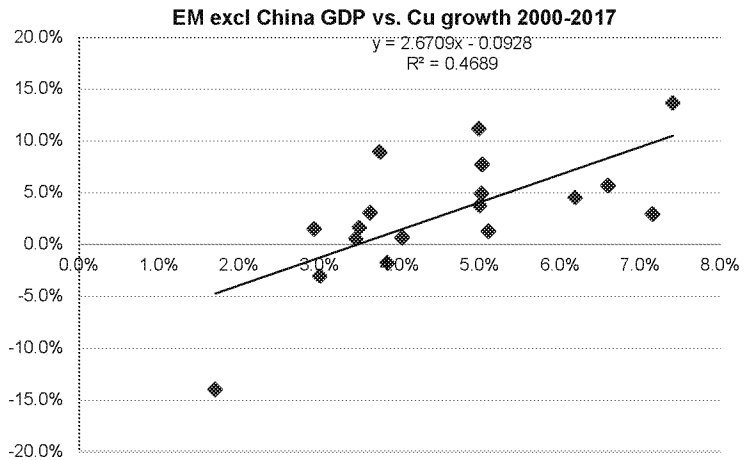
The Soviet Union comprised up to 70% of total copper consumption in emerging markets excluding China until the 1980s; however, the collapse of the Soviet Union significantly changed the dynamics of commodity consumption in the region. That being the case, we look at how the copper consumption growth to GDP growth relationship has changed in the post-Soviet era, excluding the period of stagnation and uncertainty of the 1990s.

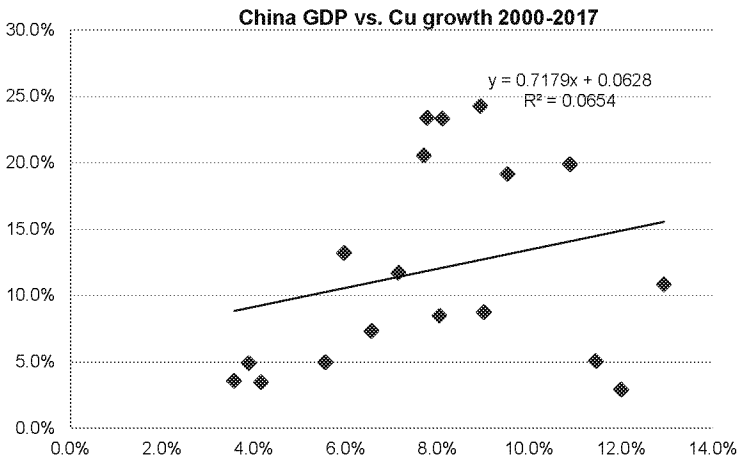
As expected, post-Soviet period copper consumption growth displays a stronger correlation to GDP growth, as the latter now relates more closely to market fundamentals than central government spending. Given the relatively strong correlation of non-China emerging markets copper consumption to GDP growth in the post-Soviet era, and for the sake of simplicity, we run copper demand sensitivities on the prevailing trend over that period. We assume (based on our economists' forecasts) an average GDP growth rate of c.5.5% in 2018-20. Based on the relationship over the past ten years, this would imply c.2.7% annual copper consumption growth, with every 0.1% move in our GDP assumption affecting our copper consumption growth forecast by c.0.4%.

Exhibit 51: Copper consumption to GDP correlation in post-Soviet era…
EM ex. China copper consumption growth vs. GDP growth, 2000-16



Source: The Conference Board, Wood Mackenzie, Goldman Sachs Global Investment Research

Exhibit 52: …but lack of correlation remains in China
China copper consumption growth vs. GDP growth, 2000-16



Source: The Conference Board, Wood Mackenzie, Goldman Sachs Global Investment Research

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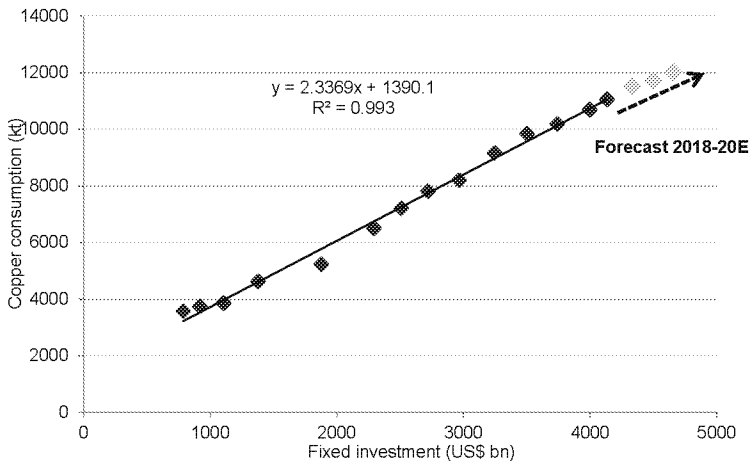
Copper consumption in China has been a function of FAI spend; focus shifting to value of growth from absolute

From 2004 onwards, China invested a significant proportion of its budget in fixed asset investment to bolster growth. This led to double-digit demand growth for almost all commodities (including copper). For the last 3-4 years, we have used this metric to forecast Chinese copper demand. However, we now believe that the trend is changing. The focus of the government has clearly shifted from an investment-driven growth model to a more consumption-driven model.

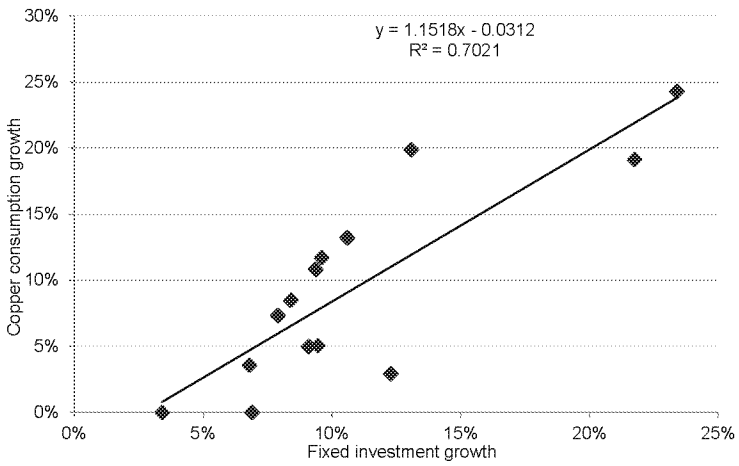
Of note, there is no evident change in the allocation of fixed investment to copper-intensive growth, with the slope little changed through the past ten-plus years. This is contrary to what we observe in steel, where there has been a clear flattening of the slope in the years following the global financial crisis compared with the previous five years since the emergence of China. Copper being an early- and medium-cycle commodity plays a part in this relationship, and our current copper demand growth forecast for China implies a continuation of the fixed investment to copper consumption growth relationship.

Exhibit 53: Strong correlation between Chinese fixed investment and commodity consumption on an absolute basis…
China's copper consumption vs. fixed investment



Source: The Conference Board, Wood Mackenzie, CRU, Goldman Sachs Global Investment Research

Exhibit 54: …and in terms of growth
China's copper consumption growth vs. fixed investment growth



Source: The Conference Board, Wood Mackenzie, CRU, Goldman Sachs Global Investment Research

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Capex intensity softening in DMs but absolute demand still growing; expect China to remain strong

There are three trends to note in the chart below that we believe are important for copper demand in the near future:

1. **China**: China demand has been at the centre of discussion for the last few years, which is where we believe the market, including us, underestimated total demand. Over the last couple of iterations of our Top project analysis, we had forecast Chinese consumption to decrease, in line with our economists' forecasts of weaker Chinese growth. However, that has now changed as our economists are more confident in China's growth prospects, which makes our commodities team positive on Chinese copper growth – they forecast growth of c.2.9% over the next three years.
2. **DMs**: We expect copper intensity to continue to weakening in DMs. However, we believe that the absolute level of copper consumption is still growing, especially in economies exhibiting strong growth, such as the US. Therefore, despite the weakening in copper intensity, we continue to expect copper demand to grow – our commodities team forecasts growth of c. 0.5% over the next three years.
3. **EMs**: EMs have shown weaker trends more recently, especially with growth in South Africa continuing to disappoint (as of 2Q18, the country has entered a technical recession). The concerns more recently have been magnified by issues in Turkey, Argentina and Indonesia. India has been the only bright spot, with growth remaining strong. However, it is worth noting that even as EM growth has been tepid, EMs do not constitute a big portion of the copper demand – our commodities team forecasts growth of c.3.5% over the next three years.

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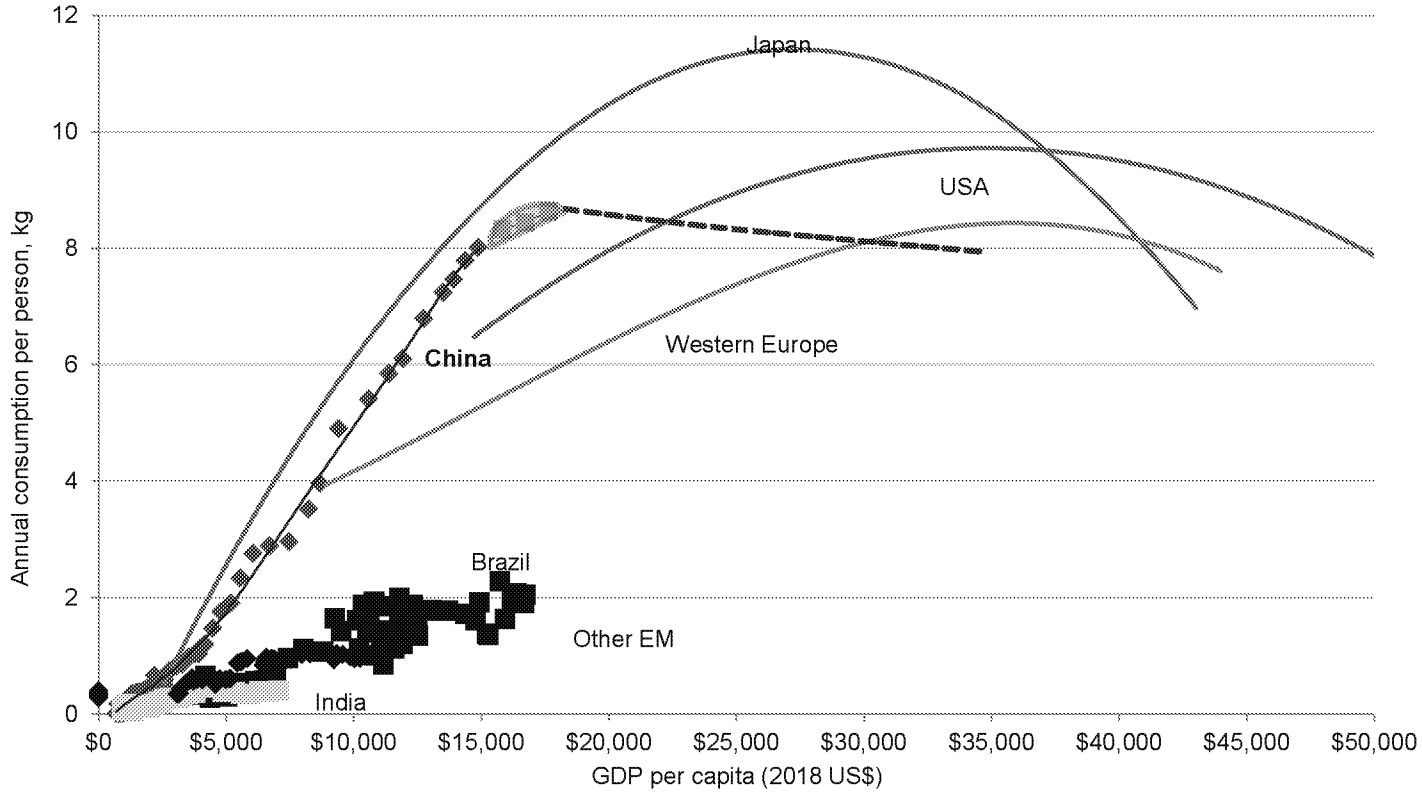
Exhibit 55: China growth flattening; a long way to go for EM per capita copper consumption to make a sizable impact on S-D

Per capita consumption for copper vs. GDP per capita at main economies



Source: The Conference Board Total Economy Board, Wood Mackenzie, CRU, Goldman Sachs Global Investment Research

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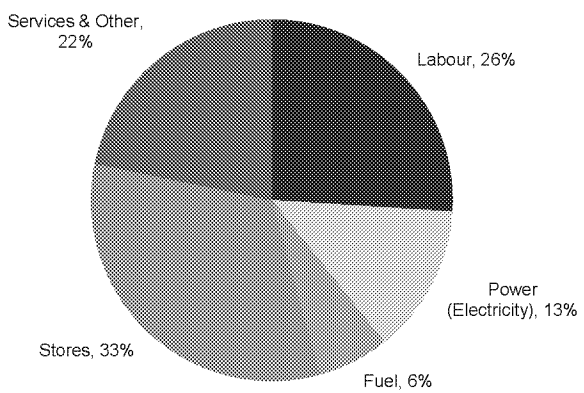
Costs have bottomed out, inflation is back

The common theme until last year was that costs were on the decline owing to weaker FX, lower wages and lower consumables (oil/steel etc.), among other factors. Following some tentative signs of a return last year, inflation is now clearly back in the mining system. In their FY17/1H18 results, most of the copper companies in our global coverage reported cost inflation anywhere between 3% and 11%. In this section, we investigate the major reasons for the inflation, and outline our outlook for the next few years.

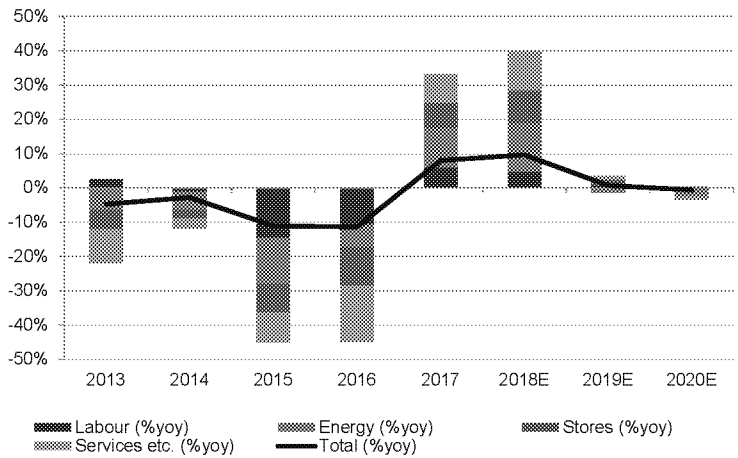
- **Labour costs**: Labour costs have escalated materially, with companies more often than not agreeing to the majority of increases proposed by mining unions amid a heightened threat of strike action compared with over the past 4-5 years.
- **Power (electricity and fuel),** which forms c.17% of the total cost base, is another area where base effects are likely to result in cost inflation. Oil prices have rallied materially, and our commodities team remain positive on the oil price over the next 12-18 months. This, coupled with high thermal coal/natural gas prices, has meant that the entire energy complex has been strong, implying high energy costs for mining companies.
- **Consumables,** especially steel, have also been strong, which has been another cause of inflation for the mining companies.

Exhibit 56: Labour, store and services form the bulk of the cost base
Average copper cost components – 2017



Source: Wood Mackenzie

Exhibit 57: Costs are set to rise materially
% changes yoy



Source: Wood Mackenzie.

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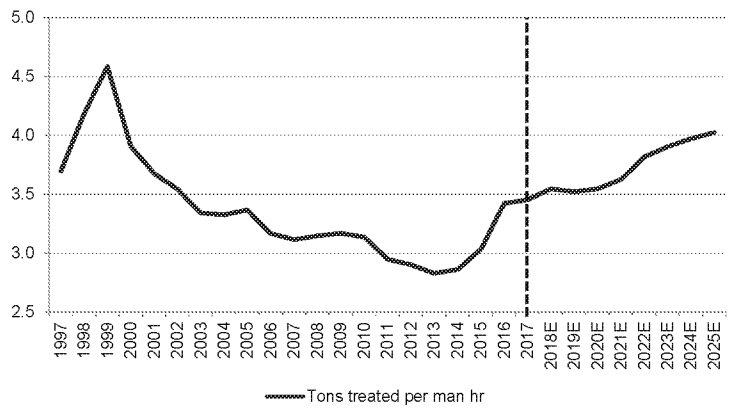
Productivity: Copper has lagged, room for improvement

Productivity is one area where copper companies have lagged, materially. While it has ticked up over the past couple of years, data from Wood Mackenzie shows that there is significant room for further improvement. If productivity does increase, the effect is likely to be deflationary, as it leads to more production and thus lower unit costs.

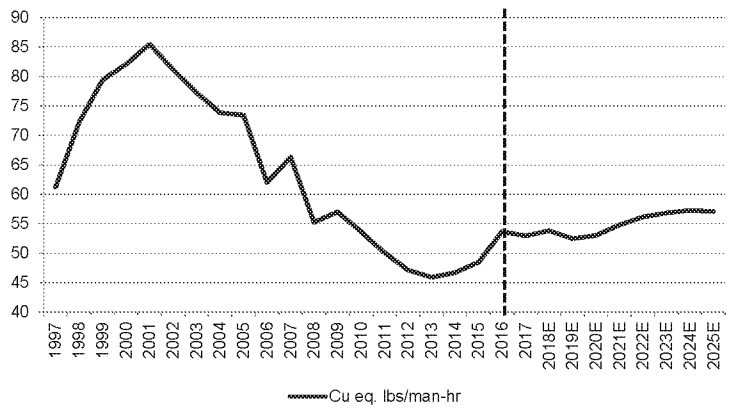
However, an interesting point to note is that the decline in productivity from 1998 to 2014 occurred in a period of continued copper price strength. The only time productivity did increase was when copper prices crashed (2014-16). This was likely a function of copper companies focusing more closely on their operations and cash flow, a focus that tends to increase when commodity prices are lower and decrease when they are higher.

Exhibit 58: There is significant scope for improvement in tonnes treated per man hour…
Tonnes treated per man hour



Source: Wood Mackenzie

Exhibit 59: …and copper equivalent production per man hour
Copper equivalent production per man hour



Source: Wood Mackenzie

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Copper Top Projects: Key takeaways from our supply-side analysis

As part of our 2018 Copper Top Projects work, we have analysed 84 projects. We have made multiple changes with this iteration, which we detail later in this section. Key conclusions based on our work are:

- **Incentive price required to bring the 84 projects online** at a 17% IRR is US$7,067/t, up 33% from US$5,204/t last year. Note that over the life of mine, these projects potentially represent c.13 mn tonnes of copper supply. The reasons for the big increase in the required prices are:
  - Cost/capex/consumable inflation (e.g. oil).
  - Required IRR: We have increased the required IRR for the projects from 12% to 17%, a function of how we calculate the IRRs.
- **The incentive price required to bring the 33 risked projects** (projects that have been approved) is US$6,799/t, up c.34% yoy. Note that over their life of mines, these projects represent c.4.3 mn tonnes of copper supply.
- **Incentive price required to bring the 51 unapproved projects online** is c.US$7,307/t, up 36% yoy. This compares with the spot price of US$6,250/t. Over the life of mine, these mines represent c.8.8 mn tonnes of copper supply.
- **Environmental/social and political concerns** have resulted in a number of projects being either pushed out or suspended pending further review, which provides a further fillip to prices in the longer term, in our view.

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Additions/deletions since Copper Top Projects 2017 analysis

We have removed the following projects because they have either fully ramped up, or the ramp-up is off the table: Bozshakol (Kaz Minerals), Bystrinksky (Norilsk Nickel), Encuentro Oxides (Antofagasta), Escondida ramp-up (BHP/Rio), and Kinsenda (Jinchuan Group International Resources).

New additions since our 2017 Copper Top Projects:

- Chambishi project in Zambia, owned by China Non-Ferrous metals and ZCCM
- El Abra project in Chile, owned by Freeport and Codelco
- El Arco project in Mexico, owned by Southern Copper
- Florence Copper in Phoenix, USA, owned by Taseko Copper
- Galore Creek in Canada, owned by TECK Resources and Newmont Mining Corporation
- Lone Star in Arizona, USA, owned by Freeport
- Los Azules in Argentina, owned by McEwen Mining
- Los Chancas in Peru, Chile, owned by Southern Copper
- Mantoverde in Chile, owned by Mantos Copper
- Michiquillay in Peru, Chile, owned by Southern Copper
- Salobo 3 in Brazil, owned by Vale
- San Nicolas in Mexico, owned by TECK Resources
- Vizcachitas in Chile, owned by Los Andes

As a result of higher assumed capex inflation across the board, and the additions/deletions of projects since our 2017 GS Top Copper Projects analysis, the average capital intensity of copper equivalent production has risen c.5% to US$14,869/t, from US$14,147/t. This is far above historical levels, and we believe that the increase in capex intensity in this iteration of GS Copper highlights: (1) the current inflationary environment; and (2) how companies have begun to raise capex budgets as concerns over EV-derived copper demand rises. Companies are trying to focus on internal projects, which are cheaper than acquiring copper mines given the high assumed copper price associated with acquisitions.

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Based on the above changes, we calculate the average copper price required to generate a 17% IRR is US$7,067/t (USc320/lb, real 2018$) with a fourth-quartile requirement of > US$9,000/t (USc4.1/lb, real 2018$). The exhibit on the next page shows our copper incentive price curve for all GS Copper projects using their respective required IRRs. At the higher end of the cost curve, we see mainly highly capital-intensive greenfield projects, some of which require significant infrastructure beyond the scope of the mining operations, including roads or power stations. These are generally located in riskier jurisdictions requiring a higher acceptable IRR for boards to approve.

Our revised estimate of an average incentive copper price of c.US$7,067 for the GS Copper projects is c.33% higher than our previous estimate (published in our 2017 *GS Top Copper Projects* report of July 5, 2017).

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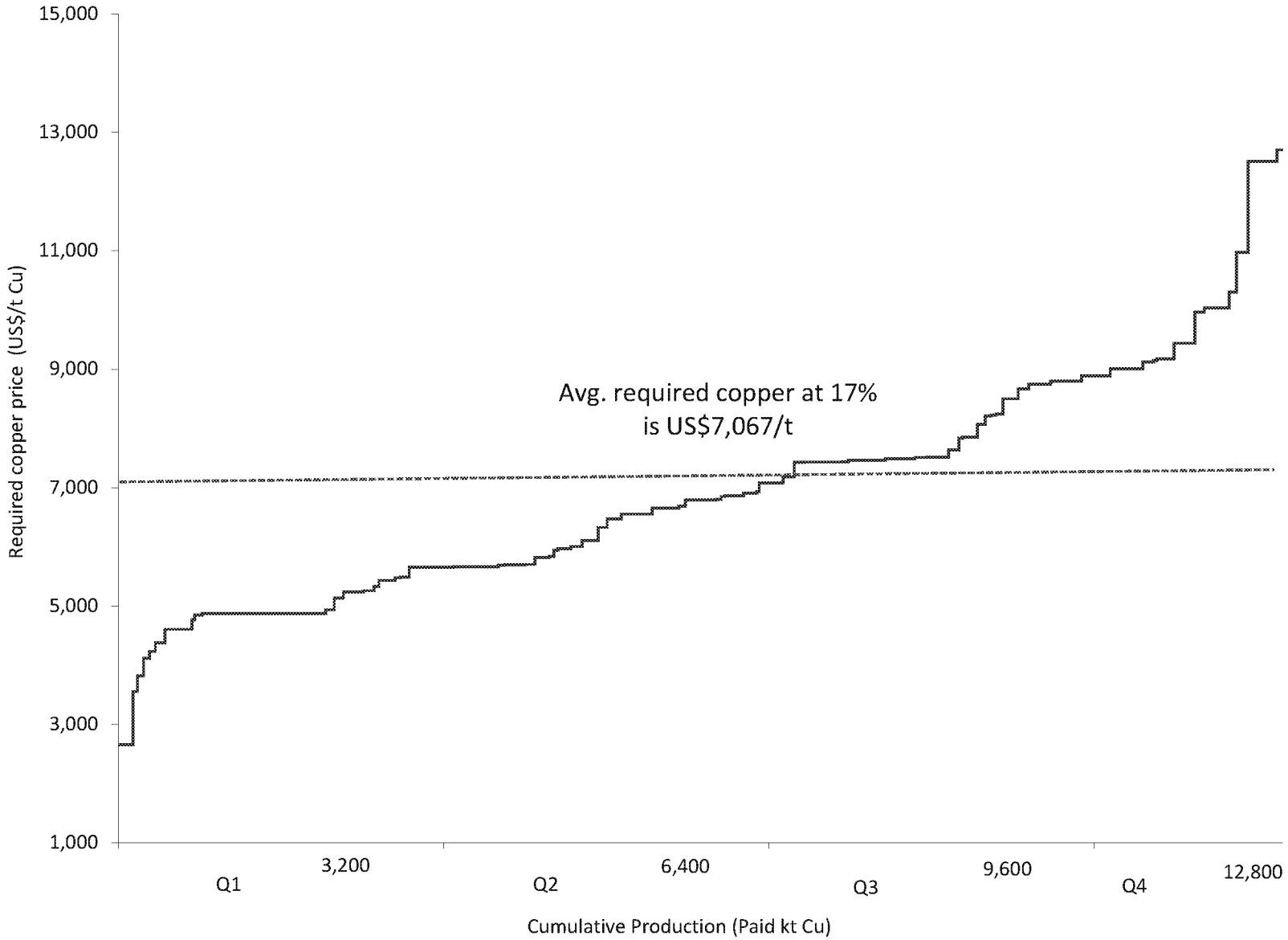
Exhibit 60: The required copper price for the copper projects we analyse is > US$7000/t
Incentive price required for new copper projects (US$/t)



Source: Company data, Goldman Sachs Global Investment Research

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Key Changes: Capex and costs rising

A core theme that has developed over the past eight iterations of this report has been deflation. This year, however, attention has turned to inflation as global growth has been stronger, fueling higher inflation and rising yields. This has led to a c.33% yoy incentive price rise in our *GS Top Copper projects 2018* report:

- **Input inflation:** Since the inflection of commodity prices post the China super-cycle, prices of almost all the inputs needed to build a mine (steel, oil etc.) fell significantly. This year, however, stronger global growth driven by the stronger US economy has seen the return of inflation. This can be seen through the prism of labour costs, as mining companies have had to agree to higher wage settlements than they might have expected this time last year.
- **Capex inflation:** Apart from input cost inflation, overall capex has also risen (capex intensity is up 2% yoy and likely faces further upward pressure), as a result of stronger global growth as well as the requirement to build out copper production profiles to meet demand from new sources. In addition, there has been a focus on bringing projects online in stages, which enables a company to use near-term cash flows to fund future developments. We have also seen projects in other commodities being delayed.
- **Cost inflation:** Based on the current increase in costs for miners, evident from the 2Q18 earnings results, we assume cost inflation of 3% in our model, a reversal of our assumption last year of cost deflation of 1% for the first four years and 3% inflation thereafter.
- **FX no longer the support:** The FX tailwind that reversed last year has continued to further solidify into a headwind for the mining companies. While more recently, there has been a material depreciation in producer country FX – mainly led by Turkey concerns – our economists remain constructive on producer country FX.

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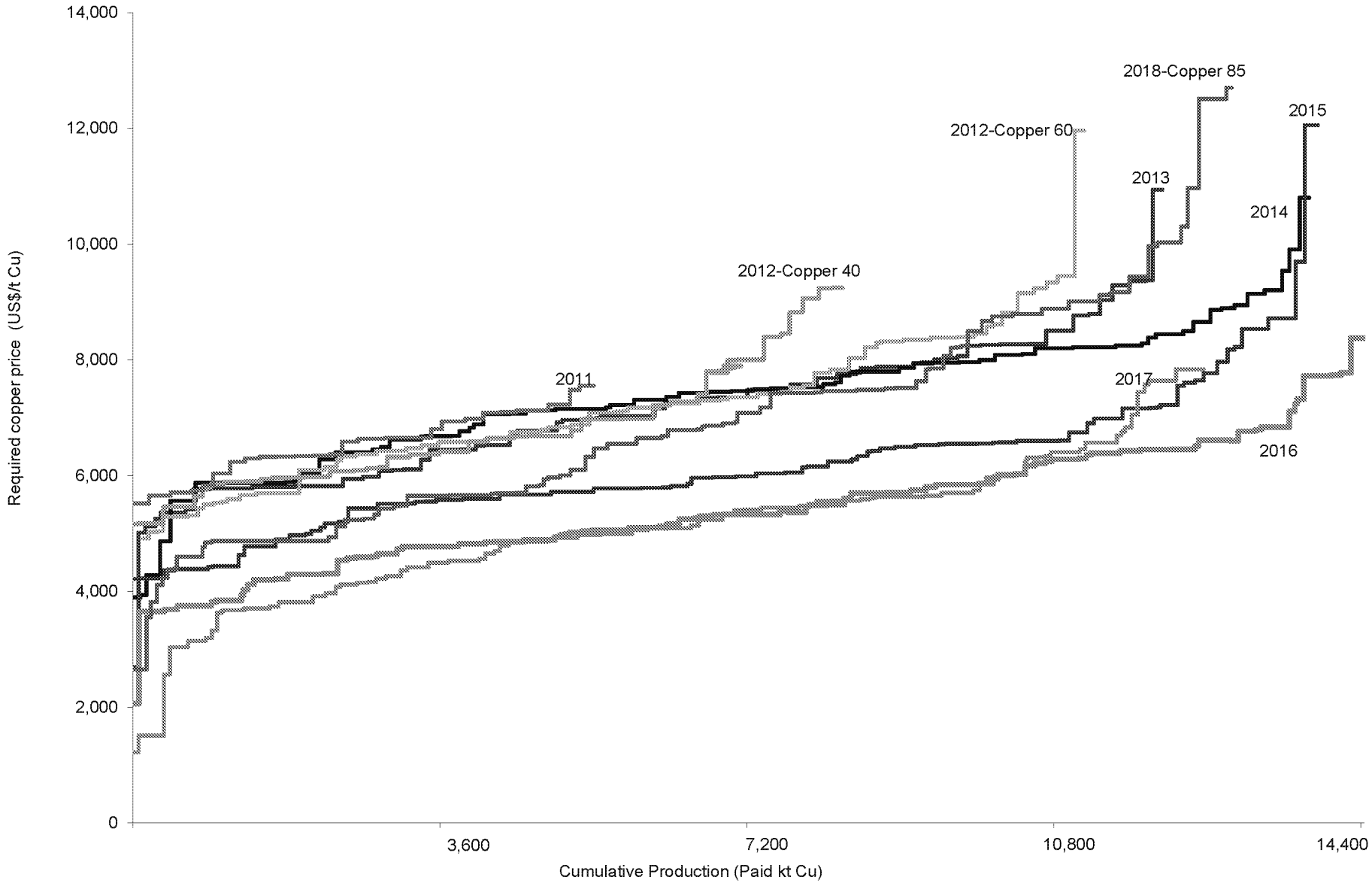
Exhibit 61: Copper price required for projects to come online has risen after falling for four consecutive years



Source: Company data, Goldman Sachs Global Investment Research

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Risked projects look attractive on spot copper prices

Of the 84 projects we analyse, 33 are risked and 51 are unapproved. Risked projects are those that we believe have a high probability of proceeding to construction, as they have been approved by their boards or have seen substantial work already undertaken. Unapproved projects are those that are either yet to be approved, have recently run into environmental issues, or are being re-evaluated in the current copper price environment. For unapproved projects, we continue to see the risk of project deferrals and/ or cancellations, as companies engage in more extended feasibility studies to assess the overall returns of these projects.

The incentive price curves in the exhibit below include all the projects considered in the top projects analysis. However, the economics of risked projects remain relatively more attractive when compared with unapproved projects. The average incentive price required for risked projects is US$6,799/t compared with the average incentive price required for unapproved projects of US$7,307/t. The exhibit below shows the project economics for risked and unapproved projects, including any capex that the companies have spent to date.

Exhibit 62: Project economics for risked projects look more attractive than unapproved projects
Project economics of risked and unapproved projects including sunk costs

	LOM output	Unit capex (US$ / t) Cu equ.	NPV @ 8% (incl. sunk) (US$ mn) GSe	IRR (GSe)	NPV @ 8% (2018+) (US$ mn) GSe	IRR (GSe) (2018+)	Cu price required @ risked-IRR
GS Copper Top Projects total	13159 ktpa	$14,614 /t	$163,267	14.9%	$189,408	19.2%	$7,067 /t
Risked projects	4308 ktpa	$13,071 /t	$84,343	16.2%	$109,483	32.5%	$6,799 /t
Unsanctioned projects	8851 ktpa	$15,409 /t	$78,924	13.7%	$79,925	13.8%	$7,307 /t

Source: Company data, Goldman Sachs Global Investment Research

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Of the 33 risked projects in our analysis, there are 23 projects (accounting for a cumulative LOM average of c.3.4mtpa) where some capex has been spent by companies and the mines are either ramping up/beginning to ramp up; the remaining 10 projects (accounting for a cumulative LOM average of c.1.4mt pa) are those where growth capex is yet to be spent.

While we do not see much risk apart from minor production disruptions and slower ramp-up profiles for the projects currently ramping up, we highlight that both Grasberg expansion projects, Cobre Panama and Chuquicamata, are key to determining the amount of supply coming on board in the next few years. Our analysis of average incentive prices, excluding sunk costs for projects in which some capex has been invested, suggests these projects have very attractive NPVs at spot copper prices, and we thus continue to have high confidence that these projects will be delivered.

The exhibit below shows the projects on which some capex has been invested to date. The average incentive price, excluding sunk costs, required for these projects is US$7,271(USc3.30/lb, 2018$ real terms). This compares with US$5,305/t for the same analysis last year, highlighting the viability of these projects. The average IRR of the projects is 16.4%, including capex already spent, above our average of 14.9% for GS Top Projects analysis, and while the IRR slips to 14.5% ignoring sunk costs, there remains a likelihood of these projects developing.

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Exhibit 63: Risked projects with some capex invested look attractive if we ignore sunk costs

Projects where capex has been spent

Project	Owner 1	Country	Status	Project type	Board approved	Start date	Announced Capex (US$ mn)	GS Capex (US$ mn)	Unit capex (US$ / t) Cu	Unit capex (US$ / t) Cu equ.	NPV @ 8% (incl. sunk) (US$ mn)	NPV @ 8% (2018+) (US$ mn)	Payback (years)	IRR	IRR (2018+)	Cu price required @ risked-IRR	Peak Cu output	LOM avg Cu output	Total cash cost ($/t)	Total cash cost (c/lb)
Aktogay Phase 2	KAZ Minerals	Kazakhstan	Producing	Brownfield	Yes	2021	$1,200	$1,220	$19,629 /t	$18,558 /t	$1,148	$1,148	5.76	16.1%	16.1%	$5,692 /t	81 ktpa	62 ktpa	$3,649 /t	166 c/lb
Asmara	Sichuan R&BMIDC	Eritrea	Permitting	Greenfield	Yes	2021	$559	$609	$26,386 /t	$12,337 /t	$668	$668	6.92	23.1%	23.1%	$6,932 /t	28 ktpa	23 ktpa	$1,683 /t	76 c/lb
Aynak	China Metallurgical Gro	Afghanistan	Permitting	Greenfield	No	2024	$4,400	$4,900	$15,313 /t	$15,313 /t	-$543	-$543	9.66	5.9%	5.9%	$12,509 /t	320 ktpa	320 ktpa	$5,374 /t	244 c/lb
Baimskaya	Baimskaya Mining Comp	Russia	Feasibility	Greenfield	Yes	2024	$5,500	$5,600	$31,206 /t	$23,156 /t	$2,350	$2,381	6.35	12.4%	12.5%	$5,433 /t	316 ktpa	179 ktpa	$2,114 /t	96 c/lb
Carrapateena	OZ Minerals	Australia	Construction	Greenfield	Yes	2020	$687	$789	$12,138 /t	$10,126 /t	$1,224	$1,453	4.05	21.3%	31.4%	$4,233 /t	66 ktpa	65 ktpa	$3,628 /t	165 c/lb
Casino	Western Copper & Gold	Canada	Permitting	Greenfield	Yes	2023	$3,345	$3,545	$41,357 /t	$25,365 /t	-$432	-$399	11.78	6.7%	6.8%	$8,069 /t	181 ktpa	86 ktpa	$4,836 /t	219 c/lb
Chambishi	China Non-Ferrous Met	Zambia	Construction	Greenfield	Yes	2018	$700	$750	$13,777 /t	$10,479 /t	$228	$408	8.17	13.4%	21.8%	$6,800 /t	59 ktpa	54 ktpa	$4,630 /t	210 c/lb
Chuquicamata U/G	Codelco	Chile	Construction	Brownfield	Yes	2020	$4,000	$4,200	$12,764 /t	$11,222 /t	$4,203	$6,670	9.04	13.2%	24.6%	$7,482 /t	366 ktpa	329 ktpa	$4,266 /t	193 c/lb
Cobre Panama	First Quantum	Panama	Construction	Greenfield	Yes	2019	$6,300	$6,350	$20,196 /t	$19,164 /t	$3,505	$8,745	8.59	10.5%	38.7%	$8,883 /t	334 ktpa	314 ktpa	$4,021 /t	182 c/lb
El Pilar	Southern Copper	Mexico	Construction	Greenfield	Yes	2019	$159	$179	$5,818 /t	$5,818 /t	$409	$409	3.98	31.6%	31.6%	$4,765 /t	33 ktpa	31 ktpa	$4,300 /t	195 c/lb
El Teniente NNM	Codelco	Chile	Construction	Brownfield	Yes	2023	$5,000	$5,100	$12,530 /t	$11,904 /t	$3,497	$4,720	7.35	12.6%	17.2%	$7,460 /t	434 ktpa	407 ktpa	$4,567 /t	207 c/lb
Florence Copper	Taseko Mines Ltd.	USA	Construction	Greenfield	Yes	2018	$200	$220	$6,576 /t	$6,576 /t	$885	$905	6.62	32.1%	38.1%	$4,870 /t	39 ktpa	33 ktpa	$3,971 /t	180 c/lb
Grasberg BC	Freeport	Indonesia	Construction	Brownfield	Yes	2016	$6,400	$6,700	$27,245 /t	$20,363 /t	$5,817	$9,643	6.91	13.0%	35.0%	$7,514 /t	429 ktpa	246 ktpa	$2,346 /t	106 c/lb
Grasberg DMLZ	Freeport	Indonesia	Construction	Brownfield	Yes	2015	$3,100	$3,200	$25,562 /t	$18,411 /t	$2,998	$5,346	9.68	13.3%	47.7%	$7,180 /t	245 ktpa	125 ktpa	$2,379 /t	108 c/lb
Jiama Phase II	China Gold Internationa	China	Producing	Brownfield	Yes	2017	$716	$736	$7,050 /t	$5,495 /t	$3,945	$4,664	4.78	28.9%	--	$4,380 /t	110 ktpa	104 ktpa	$3,234 /t	147 c/lb
Katanga	Glencore	DRC	Construction	Brownfield	Yes	2017	$1,096	$1,159	$4,237 /t	$1,866 /t	$17,184	$17,567	2.05	198.0%	--	-$1,243 /t	300 ktpa	274 ktpa	$755 /t	34 c/lb
Lone Star	Freeport	USA	Construction	Greenfield	Yes	2020	$850	$900	$10,992 /t	$10,992 /t	$632	$683	7.87	12.8%	13.5%	$4,870 /t	89 ktpa	82 ktpa	$4,906 /t	223 c/lb
Mantoverde	Mantos Copper	Chile	Pre-feasibilit	Brownfield	yes	2022	$800	$850	$11,586 /t	$10,863 /t	$234	$234	7.75	11.3%	11.3%	$4,870 /t	79 ktpa	73 ktpa	$4,880 /t	221 c/lb
Metalkol	ENRC	DRC	Construction	Greenfield	Yes	2019	$833	$900	$13,514 /t	$5,764 /t	$4,884	$5,608	3.89	30.1%	114.6%	$3,820 /t	70 ktpa	67 ktpa	$701 /t	32 c/lb
Mirador	EcuaCorriente S.A	Ecuador	Construction	Greenfield	Yes	2020	$1,400	$1,500	$19,026 /t	$17,139 /t	$1,696	$2,067	6.80	15.5%	20.1%	$10,303 /t	81 ktpa	79 ktpa	$3,415 /t	155 c/lb
Mopani	Glencore	Zambia	Construction	Brownfield	Yes	2018	$950	$1,025	$10,807 /t	$10,757 /t	$2,126	$3,161	5.04	19.3%	--	$5,489 /t	99 ktpa	95 ktpa	$3,764 /t	171 c/lb
Olympic Dam BFX	BHP Billiton	Australia	Permitting	Brownfield	No	2018	$2,940	$3,040	$18,842 /t	$17,499 /t	$6,681	$6,681	6.97	40%	39.6%	$2,653 /t	177 ktpa	161 ktpa	$2,612 /t	118 c/lb
Oyu Tolgoi Block Cav	Rio Tinto	Mongolia	Construction	Brownfield	Yes	2020	$5,095	$5,395	$15,749 /t	$13,374 /t	$4,073	$5,130	7.74	13.9%	17.0%	$6,791 /t	491 ktpa	343 ktpa	$3,891 /t	177 c/lb
Pulang	Chinalco	China	Producing	Greenfield	Yes	2017	$943	$950	$17,988 /t	$16,061 /t	$174	$1,194	9.68	9.2%	--	$8,221 /t	55 ktpa	53 ktpa	$4,550 /t	206 c/lb
Pumpkin Hollow	Nevada Copper	USA	Construction	Greenfield	Yes	2020	$1,050	$1,100	$12,197 /t	$10,884 /t	$1,330	$1,596	7.28	17.2%	25.0%	$4,938 /t	125 ktpa	90 ktpa	$4,415 /t	200 c/lb
Quellaveco	Anglo American	Peru	Construction	Greenfield	Yes	2023	$5,200	$5,400	$22,258 /t	$20,184 /t	$1,775	$1,901	7.82	10.8%	11.0%	$8,750 /t	313 ktpa	243 ktpa	$4,527 /t	205 c/lb
Santo Domingo	Capstone Mining	Chile	Feasibility	Greenfield	Yes	2023	$1,750	$1,850	$29,959 /t	$17,588 /t	$1,610	$1,662	5.84	17.2%	17.8%	$5,476 /t	130 ktpa	62 ktpa	$1,251 /t	57 c/lb
Sentinel	First Quantum	Zambia	Producing	Greenfield	Yes	2015	$2,000	$2,000	$9,086 /t	$9,086 /t	$5,275	$6,929	5.39	19.7%	--	$5,239 /t	255 ktpa	220 ktpa	$4,126 /t	187 c/lb
Spence growth option	BHP Billiton	Chile	Construction	Brownfield	Yes	2021	$2,460	$2,510	$14,492 /t	$12,933 /t	$3,851	$3,851	5.32	18.8%	18.8%	$5,697 /t	197 ktpa	173 ktpa	$3,652 /t	166 c/lb
Tia Maria	Southern Copper	Peru	Permitting	Greenfield	Yes	2022	$1,400	$1,500	$13,360 /t	$13,360 /t	$1,179	$1,657	7.12	12.6%	18.8%	$7,632 /t	120 ktpa	112 ktpa	$4,041 /t	183 c/lb
Tominsky	Russian Copper Compar	Russia	Construction	Greenfield	Yes	2018	$1,183	$1,283	$16,042 /t	$16,042 /t	$2,058	$2,375	nm	18.8%	27.9%	$4,846 /t	105 ktpa	80 ktpa	$3,479 /t	158 c/lb
Toquepala	Southern Copper	Peru	Construction	Brownfield	Yes	2018	$1,300	$1,310	$13,091 /t	$12,121 /t	$2,343	$3,318	6.00	16.2%	67.2%	$6,325 /t	103 ktpa	100 ktpa	$3,829 /t	174 c/lb
Toromocho expansior	Chinalco	Peru	Construction	Brownfield	Yes	2020	$1,360	$1,400	$13,512 /t	$11,601 /t	$2,634	$2,738	5.94	21.2%	23.5%	$5,130 /t	123 ktpa	104 ktpa	$3,494 /t	158 c/lb
Total - Risked	-	-	-	-	-	-	$67,536	$70,230	$16,301 /t	$13,071 /t	$84,693	$109,833	7.99	16.3%	32.7%	$6,799 /t	5,455 ktpa	4,308 ktpa	$510 /t	23 c/lb

Source: Company data, Goldman Sachs Global Investment Research

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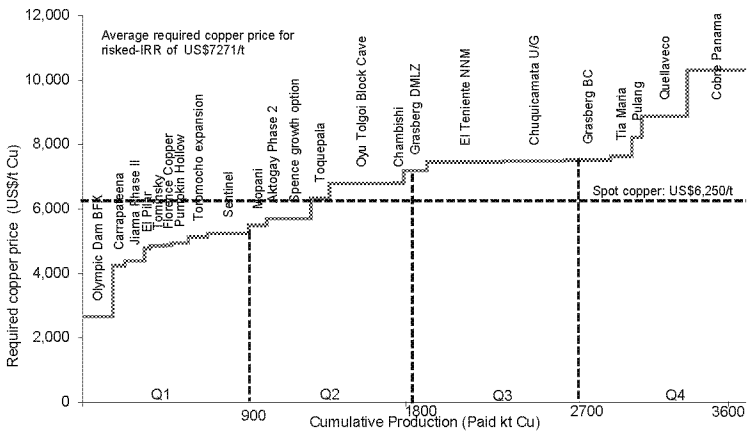
Exhibit 64 shows the 23 risked projects in our GS Top Projects copper analysis on which some capex has been spent. Exhibit 65 shows the same projects using the remaining capex figure. This suggests that close to half the projects being considered, including historical capex, would not have been NPV positive at spot prices and would therefore be unlikely to obtain approval. However, given the advanced stages these projects have now reached, with part of the capex having been spent, we estimate almost all projects are economically viable even if copper prices were to fall 14%.

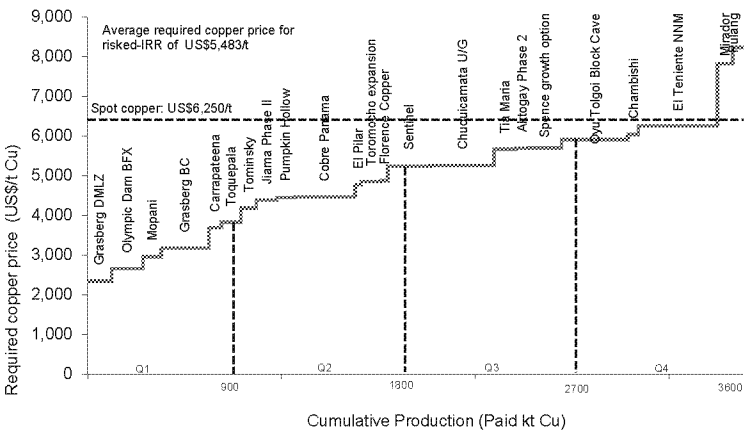
In general, the projects presented in Exhibit 65 vary in terms of capex share already spent, as well as the stability of jurisdictions in which they are based. Accordingly, the curve is for illustrative purposes only, to evaluate the incentive price relative to current spot and long-term assumptions, and not for relative project rankings.

Exhibit 64: At spot copper prices, c.50% of the projects would not have been approved
Incentive cost curve for projects where part of capex has been spent including sunk costs



Source: Company data, Goldman Sachs Global Investment Research

Exhibit 65: However, taking sunk costs into consideration, this falls to just three projects (13%)
Incentive cost curve for projects where part of capex has been spent excluding sunk costs



Source: Company data, Goldman Sachs Global Investment Research

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Unapproved projects - unviable at current prices

Our analysis consists of 51 unapproved copper projects that are either yet to receive board approvals or have recently run into environmental issues/face a re-evaluation of economics in the current copper price environment. These projects together account for c.8.8 mtpa of LOM average copper production, with start dates of 2020 and beyond. We acknowledge that these projects have relatively weaker project economics than risked projects, with an average required incentive copper price of US$7,307/t (USc3.31/lb, 2018$ real terms). We believe these projects may continue to face challenges, causing delays to initial company plans. These challenges may be in the form of:

- **Environmental-social, permitting**: The permitting process for new mines or mine expansions is becoming increasingly challenging, both in developed and emerging economies. Issues faced by miners include water and power availability, community relocations and other environmental concerns raised by the localities. Aynak in Afghanistan and Tampakan in the Philippines are examples of projects that have faced issues.
- **Fiscal/sovereign**: This applies more to emerging economies, where a mining code may only be recently implemented and subject to change, or might not be in place at all. Associated issues revolve mainly around taxation, royalties and government ownership. The Oyu Tolgoi mine is a good example of this risk, where discussions with the Mongolian government regarding the Phase 2 development took longer to be resolved than initially estimated. Recent issues in DRC around royalties and the ongoing dispute between the Zambian Revenue Authority and First Quantum are good examples of the continued challenge of mining in EM countries.
- **Changing project economics/more prudent use of capital by miners**: While project economics are looking better than they were over the last couple of years, it is important to note that capex/cost estimates have also increased. Therefore, it might be a misconception that higher prices will result in more projects being given greenlight.

We highlight that our project assumptions are likely more conservative than those used by project owners, particularly in relation to company-guided capex estimates and ramp-up schedules. Following the many announced capex over-runs for recently commissioned projects, or projects currently under construction, we believe it is more prudent to factor in capex inflation within our analysis. As a result, our aggregate capex estimate for the 51 unapproved copper projects is c.US$161 bn, which compares with company-guided estimates totaling c.US$150 bn. We believe this to be a fair assessment of the potential upward capex pressure, reflecting the fact that most projects in this list are many years away from commissioning.

The exhibit on the next page shows the incentive price that we believe is required for the unapproved projects.

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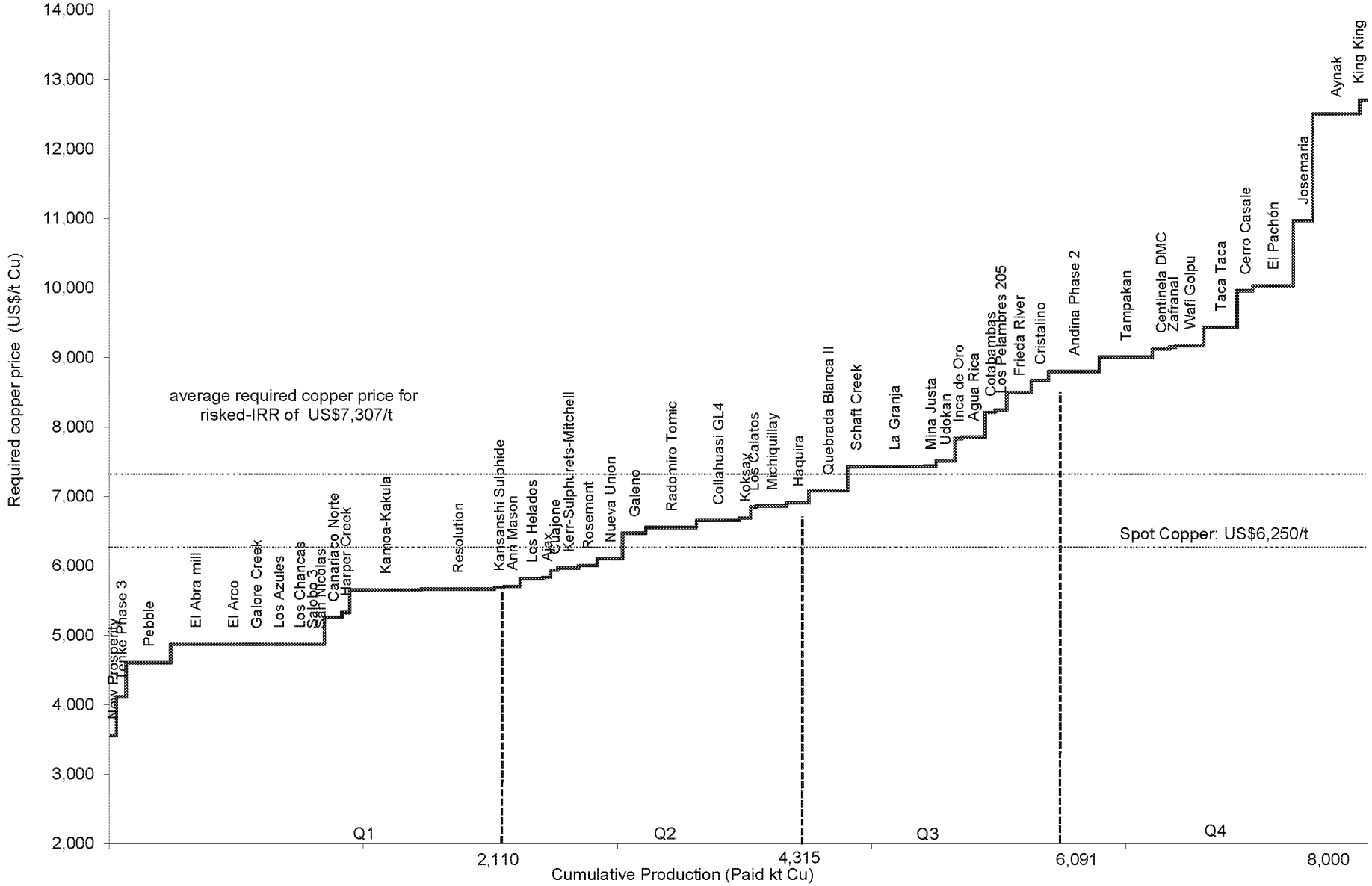
Exhibit 66: More than 3/4 of the projects are not viable at spot copper prices

Copper Top Projects – Incentive price curve for unapproved projects



Source: Company data, Goldman Sachs Global Investment Research

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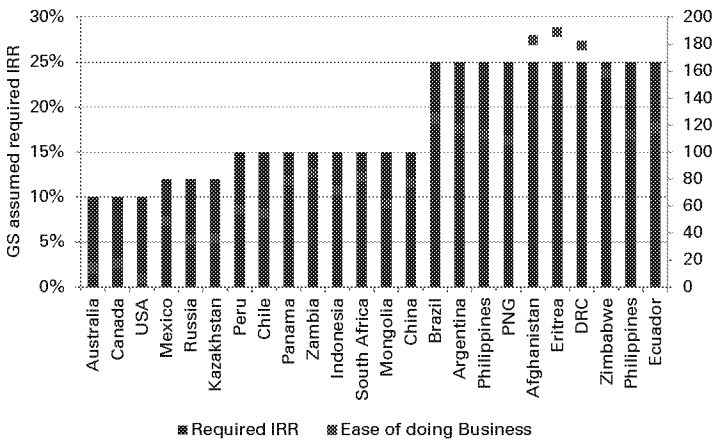
Significant production coming from risky jurisdictions, potential +ve for copper

This year, we have changed how we calculate the IRRs in our project analysis. Previously, we used the Frazer scores for each geography, which give an indication of how easy it is to establish/operate a mine in a particular country. However, given the more theoretical nature of these scores, which does not capture the ongoing issues in many geographies (e.g. DRC), we move this year to the Ease of Business score, a metric released by the World Economic Forum. This is a combination of multiple factors that we think provides a better representation of the situation on the ground.

The exhibits below show the required IRR and the score for each country (Exhibit 67), and production weighted by IRR (Exhibit 68), which is a representation of how much production comes from each jurisdiction, risked by the ease of doing business). Worth noting is that c.28% of production growth comes from high-risk jurisdictions such as DRC, Argentina and Afghanistan. We believe a bigger haircut (given the historical disappointment) needs to be applied to production coming from these geographies vs. that from lower-risk jurisdictions.

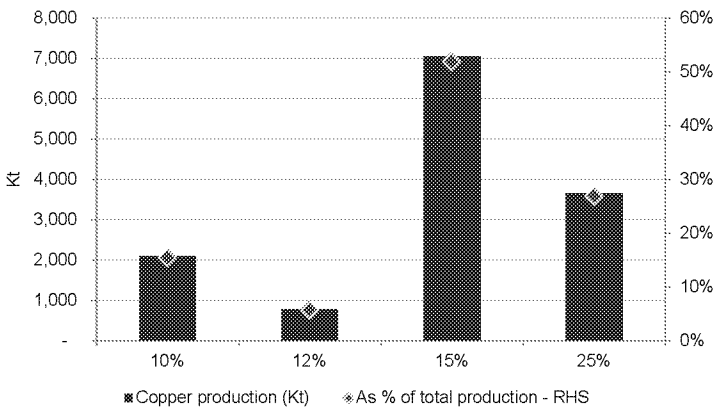
Exhibit 67: We use the Ease of Doing Business metric to get to the required IRR for each country



Source: World Economic Forum, Goldman Sachs Global Investment Research

Exhibit 68: Significant production coming from risky jurisdictions

Copper production by risk



Source: Company data, Goldman Sachs Global Investment Research

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Cobalt - EV demand to continue to see the metal in a deficit

Demand for cobalt will increase as electric vehicles sales rise, given it is a key component of the lithium ion batteries in these cars. In Copper: Top Projects' 2017, we forecast the impact of electric vehicles on cobalt demand by multiplying annual sales of each vehicle type by estimated cobalt content. For this analysis, we start with our Autos team's forecasts for automotive lithium ion batteries, and incorporate a more detailed consideration of the cobalt content in each type of Li-ion battery and how the mix will develop to 2020.

Different Li-ion batteries have similar chemistry, whereby Li-ions discharge from the anode, through an electrolyte, to the cathode. The anode is typically made of graphite, but the cathode contains varying proportions of cobalt, nickel and manganese. Given cobalt is the most expensive metal of the three, and that the cathode represents c.25% of the total cost, the cell cost is very sensitive to Co content. LCO batteries, with a pure cobalt cathode, are therefore too expensive to warrant use in electric vehicles, so the most important batteries are NCAs (mainly Tesla) and NMCs of varying cathode metal ratios. With an aim to lower battery costs, which will be a key facilitator of electric vehicle adoption, battery manufacturers are developing the cells to minimise cobalt content, which we account for in our analysis of demand.

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Exhibit 69: Lithium ion batteries consist of five main types, each varying in cobalt content and performance

Criteria	Lithium Cobalt Oxide LCO	Lithium Manganese Oxide LMO	Lithium Iron Phosphate LFP	Nickel Manganese Cobalt NMC	Nickel Cobalt Aluminum NCA
Voltage	3.7V	3.8V	3.3V	3.8V	3.6V
Specific energy (Wh/kg)	150-240	100 - 150	90-120	150-220	200-300
Cycle time	>500	>300	>1000	>1000	>500
Safety	Low	Medium	High	Medium	Low
Cost	High	Low	Medium	Medium-High	Medium
Cathode cobalt content (1)	100%	0%	0%	20%	15%
Areas of application	Electronic devices	Consumer devices / EV	Energy storage / EV	Energy storage / EVs	EV
Used by / in	Portable electronics inc.iPhone	Nissan Leaf / Renault ZOE	Golf carts, electric scooters, home solar	Tesla Powerwall Chevy Volt	Tesla Model S, BMW i3
Pros	High energy density	High operating voltage	Good energy density	Good power / energy density	High energy / density
		High safety (thermal stability)	High Safety	Thermally stable	
Cons	Expensive	Shortened cycle life at higher temperature	Low operating voltage	Moderate cost	Higher cost
	Safety risk		Higher self-discharge	Moderate stability	Low safety
	Low charge / discharge rate	Lower energy density	Limited moisture tolerance	Higher weight / energy	

(1) Cathode typically represents 40% battery weight (2) Based on NMC 622, NMC 811 would lower Co to 10% cathode

Source: Data compiled by Goldman Sachs Global Investment Research

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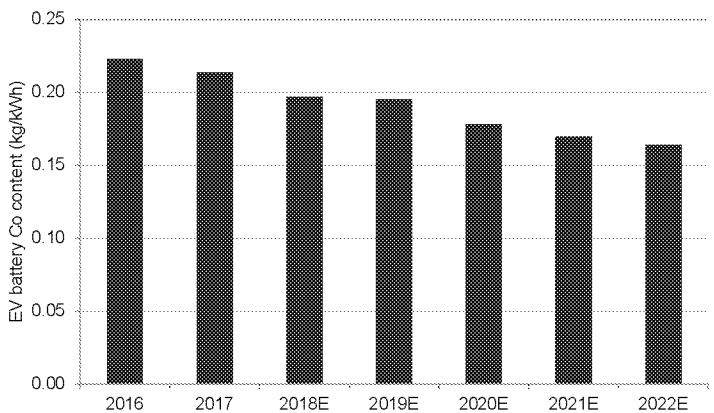
Even as batteries reduce cobalt content, overall metal demand is set to rise

Our analysis is based on lithium ion battery forecasts for automotives generated by our Autos team. By varying the relative overall proportions of each battery type from 2017 to 2022 and factoring in a general shift from higher Co content batteries to lower (e.g. increasing the market share of NMC 811 batteries), our average EV battery Co content decreases from 0.22kg/kWh to 0.13g/kWh across the period.

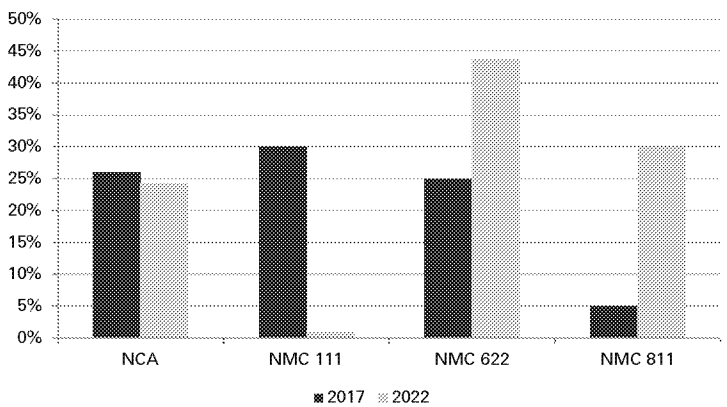
Assessing the potential future share of each battery type is difficult owing to potentially rapid advances in technology, so we have made rough estimates for how relative proportions of each will change in the future. Tesla has historically been differentiated by its use of NCA batteries. With regard to the NMC batteries used by most other manufacturers, there is a general shift from NMC 111 (equal ratios of Ni, Mn, Co) to NMC 622 in the near term and NMC 811 in the medium to long term. The 811 battery already exists, but its use has not yet spread significantly beyond China given some safety concerns. This is because of the thermal stability Co can provide to nickel, so successfully eliminating cobalt from lithium batteries is likely to be some years away. Our estimates attempt to capture these insights, but a clear risk to our thesis relates to how the technology changes and how fast Co content is reduced, if EVs are to be significant at all over the next four years.

Exhibit 70: Cobalt content in EV batteries to start decreasing with a drive to lower costs
Co content in EV batteries to decrease from 0.22kg/kWh to 0.16kg/kWh from 2016 to 2022



Source: Data compiled by Goldman Sachs Global Investment Research, McKinsey

Exhibit 71: We expect NMC 622 and 811 batteries to capture share from NMC 111s as battery makers reduce cobalt content
Estimates for share of each battery type used in electric vehicles for 2017 and 2022E



Source: Data compiled by Goldman Sachs Global Investment Research

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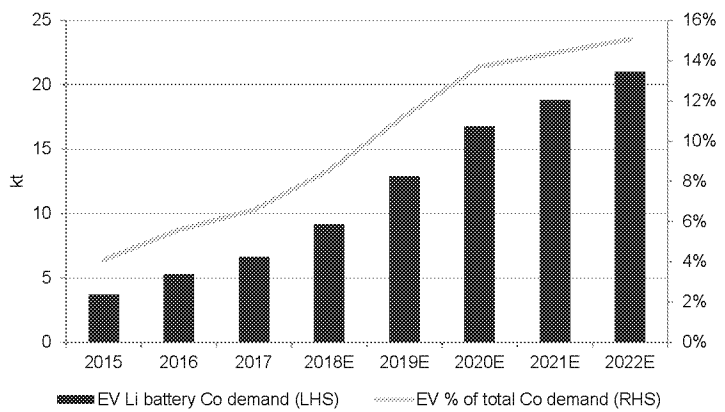
Batteries are supercharging cobalt demand

Combining the cobalt content estimates with forecast EV lithium battery capacity (GWh), we forecast cobalt demand from batteries alone more than tripling from 2017 to 21kt in 2022. Given that this equates to a CAGR of c.33%, we apply an overall CAGR of 6.8% (reflecting EV share of demand) to the total cobalt demand for 2016 to calculate the overall demand expected. The result is c.100kt in 2017 (also indicated by the Cobalt Institute), increasing by almost 40% by 2022. This is lower than other forecasts we have seen, likely a result of more conservative EV forecasts and our incorporation of an expected reduction in Co content per kWh. In summary, regardless of an overall reduction in cobalt content per kWh, EV batteries are growing fast enough to outweigh this, resulting in increasing annual demand overall.

Our analysis is based on our assumption that batteries will be the key driver of future cobalt demand, given that they have historically accounted for 45% of the total. Hence, assuming that all other end-uses of the metal stay roughly constant, cobalt consumption from batteries increases by c.12% yoy such that by 2022E, batteries are responsible for 60% of demand. Again, we may be relatively conservative in our view, given that other estimates surpass 60% by 2020 and that we neglect any exceptional growth in other end-markets. For example, it could be that growth in cobalt demand from superalloys is higher than our forecasts, suggesting jet engines require more new metal as scrap supply is insufficient.

Exhibit 72: Lithium batteries from EVs will demand 21kt of cobalt in 2022, representing double the share of total demand last year

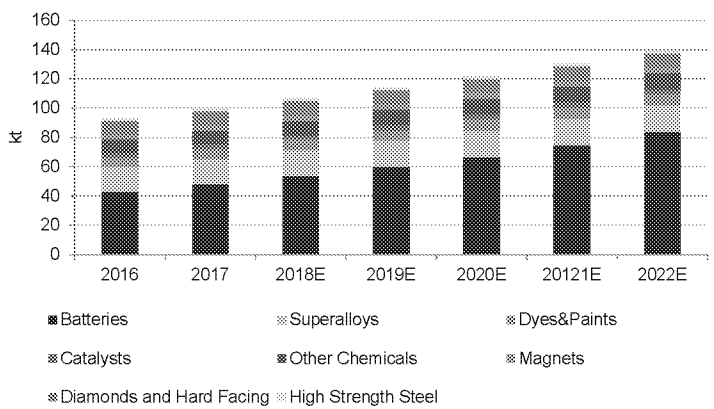
Cobalt demand in kilo-tonnes to reach 15% of total demand by 2022E



Source: Goldman Sachs Global Investment Research

Exhibit 73: Batteries for EVs and devices combined likely to be the key driver of cobalt demand growth over the next few years

Cobalt demand forecasts by end-market in kilo-tonnes



Devices include portable electronics, medical equipment, energy storage etc.

Source: Data compiled by Goldman Sachs Global Investment Research

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Exhibit 74: Cobalt S-D Model

GLOBAL COBALT INDUSTRY ANALYSIS
SUPPLY AND DEMAND MODEL

Supply Cobalt mine production ('000 tonnes)	2012	2013	2014	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Democratic Republic of the Congo											
Tenke Fungurume	11.8	11.7	12.8	16.0	16.1	16.4	16.2	16.2	16.2	16.2	16.2
Katanga	**2.1**	**2.3**	**2.8**	**2.9**	**-**	**-**	**11.0**	**28.0**	**30.0**	**30.0**	**30.0**
Mutanda/Comide	8.5	13.7	14.4	16.5	24.5	23.9	24.2	24.8	24.8	24.8	24.8
Mukondo Mountain	9.6	9.7	8.5	9.5	4.8	7.1	7.1	7.1	7.1	7.1	7.1
Big Hill (STL)	4.0	4.3	4.9	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Etoile Mine	1.3	1.2	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Ruashi	3.0	3.0	3.9	4.3	3.3	3.8	3.8	3.8	3.8	3.8	3.8
Other DRC	11.7	12.1	17.7	14.1	9.4	16.7	16.7	16.7	16.7	16.7	16.7
Total DRC	**52.0**	**58.0**	**66.9**	**69.3**	**64.0**	**73.9**	**85.1**	**102.7**	**104.7**	**104.7**	**104.7**
Rest of the world											
Murrin Murrin	2.5	2.6	2.8	2.8	2.8	2.8	2.7	2.6	2.6	2.6	2.6
Mopani	0.3	-	-	-	-	-	-	-	-	-	-
Sudbury	0.6	0.9	0.8	0.8	0.9	0.8	0.9	0.9	0.9	0.9	0.9
Voisey's Bay	1.2	1.3	1.0	0.8	0.9	1.8	1.4	1.4	1.4	1.4	1.4
VNC	0.4	1.1	1.4	2.4	3.2	2.8	3.0	3.0	3.0	3.0	3.0
Thompson	0.1	0.3	0.5	0.4	0.7	0.1	0.4	0.4	0.4	0.4	0.4
Others	45.9	55.9	49.6	49.5	38.5	27.7	33.1	33.1	33.1	33.1	33.1
Global cobalt mine production ('000 tonnes)	**103.0**	**120.0**	**123.0**	**126.0**	**111.0**	**110.0**	**126.5**	**144.0**	**146.0**	**146.0**	**146.0**
yoy %	*-6%*	*17%*	*2%*	*2%*	*-12%*	*-1%*	*15%*	*14%*	*1%*	*0%*	*0%*
Refined cobalt production ('000 tonnes) @ 75% conversion	**77.3**	**90.0**	**92.3**	**94.5**	**83.3**	**82.5**	**94.9**	**108.0**	**109.5**	**109.5**	**109.5**
yoy %	*-6%*	*17%*	*2%*	*2%*	*-12%*	*-1%*	*15%*	*14%*	*1%*	*0%*	*0%*
Demand ('000 tonnes)											
Batteries	**30.6**	**32.9**	**39.1**	**41.1**	**43.1**	**48.2**	**53.8**	**60.0**	**66.7**	**75.1**	**84.0**
% Total	*41%*	*41%*	*45%*	*45%*	*46%*	*48%*	*50%*	*52%*	*55%*	*57%*	*60%*
Superalloys	13.1	14.6	15.8	16.3	16.8	17.3	17.5	17.7	18.0	18.0	18.0
% Total	*18%*	*18%*	*18%*	*18%*	*18%*	*17%*	*16%*	*15%*	*15%*	*14%*	*13%*
Dyes&Paints	6.2	6.4	6.6	6.6	6.8	7.0	7.2	7.5	7.7	7.7	7.7
% Total	*8%*	*8%*	*7%*	*7%*	*7%*	*7%*	*7%*	*7%*	*6%*	*6%*	*6%*
Catalysts	2.2	2.3	2.5	2.6	2.8	2.9	3.1	3.2	3.4	3.4	3.4
% Total	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*2%*
Other Chemicals	8.0	8.4	8.9	9.0	9.3	9.7	10.1	10.4	10.8	10.8	10.8
% Total	*11%*	*11%*	*10%*	*10%*	*10%*	*10%*	*9%*	*9%*	*9%*	*8%*	*8%*
Magnets	3.6	3.4	3.5	3.5	3.6	3.7	3.7	3.8	3.8	3.8	3.8
% Total	*5%*	*4%*	*4%*	*4%*	*4%*	*4%*	*3%*	*3%*	*3%*	*3%*	*3%*
Diamonds and Hard Facing	9.0	9.1	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.7	9.7
% Total	*12%*	*12%*	*10%*	*10%*	*10%*	*9%*	*9%*	*8%*	*8%*	*7%*	*7%*
High Strength Steel	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8
% Total	*2%*	*2%*	*2%*	*2%*	*2%*	*2%*	*2%*	*2%*	*1%*	*1%*	*1%*
Global apparent demand ('000 tonnes)	**74.9**	**79.4**	**87.7**	**90.6**	**94.0**	**100.4**	**107.2**	**114.5**	**122.3**	**130.6**	**139.5**
yoy %		*6%*	*10%*	*3%*	*4%*	*7%*	*7%*	*7%*	*7%*	*7%*	*7%*
Supply surplus/(deficit) ('000 tonnes)	**2**	**11**	**5**	**4**	**-11**	**-18**	**-12**	**-6**	**-13**	**-21**	**-30**

Source: USGS, Reuters, Wood Mackenzie, Company data, Goldman Sachs Global Investment Research

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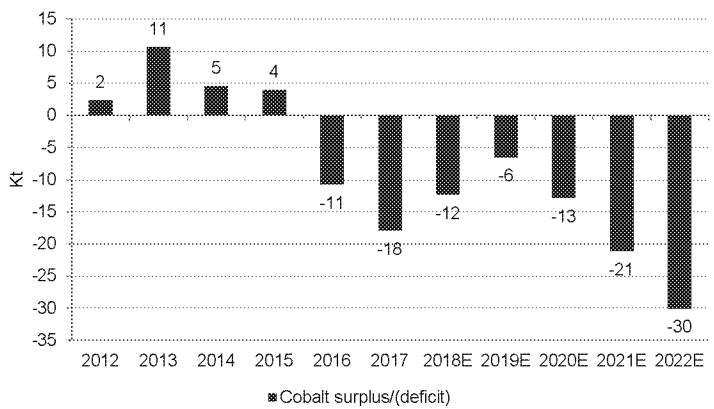
Cobalt bull-bear case: Battery safety concerns to likely impede aggressive substitution

Although other end markets represent a significant portion of cobalt demand, the biggest consumer remains batteries, which currently account for c.50% of cobalt demand. In line with our base case forecasts, we assume this grows to account for 60% of demand by 2022.

For our bull and bear analysis, we maintain our Autos team's base case for EV uptake, with the variable factor being the rate of substitution of cobalt in EV batteries. We have adjusted the relative share of each battery type in line with our views on changes in battery composition; in summary, we expect **increasing battery demand with decreasing amounts of cobalt.** In our bull case, we assume a slower substitution of cobalt in batteries (relative to our base case). However, for the bear case, we have adjusted for a relatively accelerated uptick in material substitution resulting in a lower cobalt content per battery and subsequently lower demand.

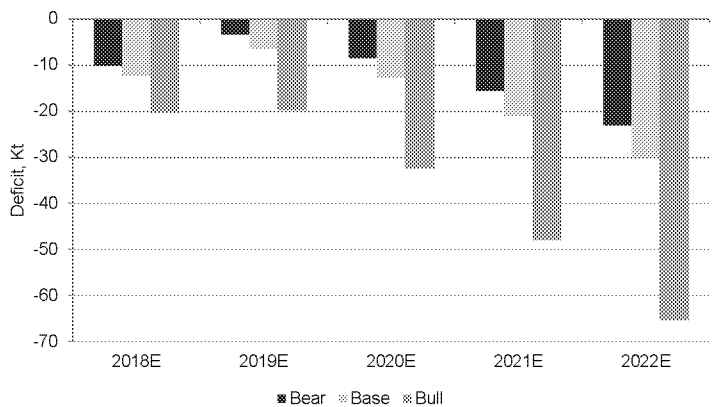
Exhibit 76 shows the wide range of outcomes depending on the rate of cobalt substitution as evidenced by our 2022E deficit, which lies between -23kt for our bear case and -65kt for our bull case. We maintain our base case as a more likely scenario, as battery compositions will likely stay constant to maintain vehicle safety standards.

Exhibit 75: Cobalt S-D balance to remain in deficit as demand (mainly from EV batteries) outpaces supply...



Source: USGS, Reuters, Wood Mackenzie, Company data, Goldman Sachs Global Investment Research

Exhibit 76: ...however, cobalt substitution in batteries will be the main determinant of how big or small this supply deficit is



Source: Wood Mackenzie, Goldman Sachs Global Investment Research

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Company Profiles

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BHP Billiton (BLT.L/BHP.AX): Returns to accelerate after onshore shale sale; remain Buy

We remain Buy rated on BHP (BLT.L / BHP.AX) with 12-month price targets of GBp1,950/A$40.

Very strong copper portfolio; Escondida strike averted

BHP has a strong copper portfolio and is the largest copper producer in our coverage. The company is in the process of increasing production at two of its mines: (1) Spence Hypogene; and (2) Olympic Dam. The Spence growth option was approved last year for total capex of US$2.5 bn + the US$1.43 bn to be spent over 20 years – BHP has outsourced the building of the desalination plant. The expansion at Olympic Dam has been more difficult, and BHP has continued to struggle to keep production steady with different issues affecting the overall production. While we take into account the growth optionality at the mine, where the company is planning to add c.160Kt (for capex of US$3 bn, on our estimates), we highlight that risks from this mine are likely skewed to the downside. BHP averted the Escondida strike in August by reaching a last-minute deal with workers. While the details of the offer are not public, we believe it was likely higher than that made before the government-mediated talks. While the lack of disruption had a negative short-term effect on copper prices, the inflationary impact of the deal is positive for copper prices longer term.

Lack of catalysts, but still see material value; valuation remains attractive

Our upgrade of BHP on April 15 was predicated on: (1) strong cash conversion in 2H18 vs. 1H18; (2) strong returns, with the FY18 results; and (3) attractive valuation, both absolute and vs. RIO. Another catalyst was the divestment of the onshore oil assets, for which we estimate a value of US$7-US$14 bn. BHP announced recently that it had reached a deal to sell the assets for US$10.8 bn (note that we take no view on the transaction). While most of the catalysts for BHP have materialised, we remain Buy-rated on the stock as we see material value; BHP continues to trade at a 7% discount to RIO vs. a historical premium of 2% on 12-month-forward consensus EV/EBITDA (I/B/E/S).

Valuation and key risks

We are Buy rated on BLT.L/BHP.AX and value it on 6.5x (50/50 FY19/FY20E) EBITDA to derive our 12-month price targets of 1,950p and A$40 (previously 2,000p/A$42). Our estimates change as we update for the new copper price deck and mtm for 3Q commodity prices and FX. Our EPS estimates rise despite the fall in EBITDA on account of lower tax.

Key risks include: (1) operational issues, especially at the iron ore operations given their importance to FCF generation; (2) a potential asset swap for the onshore assets – this would imply no cash in, which could disappoint investors, in our view; and (3) a significant slowdown in China, which would likely affect demand for key commodities in BHP's portfolio.

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Rio Tinto (RIO.L / RIO.AX): M&A likely ahead as growth in copper sought; remain Neutral

We remain Neutral rated on Rio Tinto (RIO.L / RIO.AX) with 12-month price targets of GBp4,000/A$82.

Focus on copper but no immediate growth projects; M&A likely

Copper is a small part of RIO's earnings profile: as of 2018, we expect copper to contribute <15% to the company's EBITDA. While Rio has a couple of growth projects – the one in the near term being the Oyu Tolgoi underground expansion – the company does not have any other approved growth projects in the pipeline. The other projects, Resolution and La Granja, are too far away to affect investor investment decisions currently, in our view. Given that the company has been vocal about increasing its exposure in copper (note that its expected copper exposure has come down after the sale of its Grasberg stake), we believe the most likely way it would achieve this is through M&A.

Remains a call on iron-ore prices; other commodities too small to move the dial

Rio Tinto has remained a straight call on iron-ore prices as its exposure to the commodity has increased. RIO's focus has been on selling "non-core" assets, which have included high-cost aluminium assets, all of the coal assets and more recently the stake in the Grasberg mine. This has seen the contribution of iron ore to RIO's EBITDA increase to >60% as of 2018, the highest in our coverage. While we see downside to iron-ore prices in the near term, we believe that the company's focus on returns is likely to support the share price in the near term.

Valuation and key risks

We value RIO on an unchanged 6x 50/50 2018/19E EV/EBITDA. Our 12-month price targets are 4,000p/A$82 (previously 4,000p/A$84). Our estimates change as we update for the new copper price deck and mtm for 3Q commodity prices and FX.

Higher/lower iron ore prices, FX, and political and fiscal uncertainty are the key risks to our investment thesis. We are Neutral rated.

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Anglo American (AAL.L): Growth ahead, valuation undemanding; Buy (on CL)

We remain Buy rated on Anglo American, with a 12-month price target of Gbp2,200. The stock is on our Conviction List.

Quellaveco - the first Greenfield project approved in a long time

With its 1H18 results, Anglo American approved the Quellaveco mine, which is the first greenfield mine approved since the commodity downturn started in 2014. Capex was c.US$5-US$5.3 bn and production is expected to be c.300Ktpa. This computes to a capex intensity of c.US$22,250/t vs. an average of US$17,750/t for the Quellaveco mine. The reason for this higher capex intensity is that our analysis also includes a significant number of brownfield expansions, where the capex intensity is obviously lower. The company expects the costs to be c.US$1.05/lb of copper production (real terms). This is an improvement over the guidance that was given previously. Capex is expected to be limited to 1H19 as the company utilises the cash in from Mitsubishi.

Copper to become an increasingly important part of Anglo's earnings driver; other commodity mix favourable too

As of FY17, copper contributed c.17% to Anglo's EBITDA. However, we forecast this number to increase steadily to c.35% by FY2020 on account of higher copper prices and production. The main production increase comes from the improvement in Los Bronces – we forecast production to increase from c.310Kt in 2017 to c.370Kt in 2019. We expect flat production from the remaining mines – note that Quellaveco does not come online until FY23, on our estimates.

More broadly, we remain positive on Anglo's commodity mix: (1) the iron-ore portfolio remains strong, especially given that the lump premium has continued to strengthen amid higher demand from Chinese steel mills; and (2) Met coal also remains strong as the Chinese mills continue to buy higher-quality coking coal; the bid to reduce pollution should be a positive for both the lump premium and coking coal.

Valuation and key risks

We maintain our Buy rating (on CL) on Anglo. We value the shares at 5x (previously 4.5x) 50/50 2018/19E EV/EBITDA, driving a 12-month price target of 2,200p (previously 2,000p). We increase our multiple to reflect the increased contribution of copper – one of our preferred commodities – in the company's earnings. Our estimates change as we update for the new copper price deck and mtm for 3Q commodity prices and FX.

Key risks to our view include lower commodity prices, stronger FX and political risk associated with changes in the South African mining charter.

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Glencore (GLEN.L): Strong growth ahead; remain Buy despite uncertainties

We remain Buy rated on Glencore with a 12-month price target of GBp400.

High-quality copper portfolio; material growth ahead

Glencore has one of the strongest and the most diverse copper portfolios in our coverage. GLEN produced c.1.3 mn tonnes of copper in FY17 and is in the process of ramping up production from two of its mines in Africa – Katanga in DRC and Mopani in Zambia. On our estimate, the mines could add a further c.200Kt this year and upwards of 350Kt next year to GLEN's production profile, taking its total production to over 1.5 mn tonnes by FY2020. Note that as copper volumes ramp up, the cobalt production from GLEN's mines is also set to increase; we expect total cobalt production to increase to c.60Kt by FY20.

Growing volumes (both copper and cobalt), coupled with our positive view on the commodities, should make copper an increasingly important part of GLEN's earnings. We forecast the contribution to increase from c.30% this year to >45% by FY2020.

Investment thesis - DoJ investigation a risk, but we see risks as more than priced in

GLEN remains one of the best positioned stocks in our coverage given its strong balance sheet and attractive growth projects (both in copper, as discussed earlier, and zinc). This balance sheet strength combined with a lack of growth projects in the pipeline (the capex on the growth projects has either been spent or is in the last stages) means that Glencore can focus on investor returns – dividends + buy-backs – which we believe should remain supportive of the share price.

While there are some uncertainties around the investment case owing to the ongoing DoJ investigation, we highlight that the company's fundamentals remain strong and valuation attractive. With a material volume ramp-up ahead, we forecast earnings momentum remaining strong over the next few halves.

Valuation and key risks

We value Glencore on a SOTP, which values the industrial assets at 4x 2018E EV/EBITDA and the marketing division at 15x 2018E P/E, and mark to market the listed entities. We increase our multiple from 3.5x to 4x to reflect the FCF generation capacity of the business. Our estimates change as we update for the new copper deck and mtm for 3Q commodity prices and FX. Our 12-month price target increases from 375p to 400p.

Key risks to our price target and thesis are: (1) uncertainty relating to the ongoing DoJ investigation; (2) lower commodity prices; (3) political and fiscal risks; and (4) FX volatility.

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Norilsk Nickel (NKELyq.L): Well-balanced basket of late cycle commodities; Buy

We remain Buy rated on Nornickel (CEEMEA Focus List), with a 12-month price target of US$24.0.

Copper - 30% of metals basket, key growth project is ramping up

Nornickel enjoys a well-balanced metals exposure, with c.1/3 of revenue coming broadly equally from nickel, copper and PGMs. Nornickel produces c.400kt of Cu pa and expects to increase output further as it has recently launched (hot commissioning started in November 2017) its key growth copper project Bystrinsky GOK, with 70-75kt of Cu and 250-260koz Au output at full ramp-up expected by 2021. Nornickel accounts for c.2% of global copper production, with all mining and processing assets located in Russia.

Investment thesis intact - undervalued play on late-cycle commodities

Norilsk Nickel is the world's largest producer of palladium and one of the largest producers of nickel, platinum, and copper. We believe the market still overlooks the extent to which the company's FCF generation is benefiting from a weakening ruble and a positive outlook on its key metals prices. We see scope for the inflection in FCF to drive a reduction in leverage and support shareholder distributions: we forecast ND/EBITDA to halve by end 2019 to 1.1x (2.1x in 2017), and believe the company will be able to deliver high and growing shareholder returns under different scenarios of dividend payout. We are c.10% ahead of Bloomberg 2019 EBITDA consensus mainly owing to our higher outlook for the nickel price deck. The shares trade at a 2019E dividend yield of 14% (vs. mid cycle of 7.5%) and 2019E EV/EBITDA of 5.3x (vs. mid cycle of 6.2x).

Valuation and key risks

We are Buy rated on Norilsk Nickel (on CEEMEA Focus List). Our 12m PT of US$24.0 (down from US$25.0 on our updated copper price deck) is based on a target multiple of 7.3x (a c.10% premium to Nornickel's past five-year average multiple) applied to 2018-19E EBITDA (methodology unchanged). Key downside risks to our view and price target include a stronger-than-expected ruble, weaker-than-expected commodity prices, cost and capex overruns, value-destructive acquisitions/divestments, and changes in shareholding structure leading to changes in cash allocation and development strategy.

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Antofagasta (ANTO.L): High capex intensity growth to keep FCF suppressed; down to Sell

We downgrade Antofagasta to Sell from Neutral with a reduced 12-month price target of 725p.

Los Pelambres/Centinela expansion to suppress FCF generation

Antofagasta is in the process of evaluating the Los Pelambres and Centinela expansion plans. For Los Pelambres, the capex is likely to be US$1.8 bn (US$1.95 including our assumed capex escalations); we expect first production in 2020 and the mine reaching full capacity of c.100kt by FY2023. Note that this is likely to be implemented in two stages: a c.55Ktpa expansion that is likely to start next year, and the 35ktpa expansion due to start in 2021/22. At Centinela, the company is still evaluating whether to build a new concentrator (adding capacity of 90Ktpd) or to modify the existing one (which adds capacity of 60Ktpd). While a decision has not been taken, we believe it is likely to choose the 90Ktpd option given that the company has the balance sheet power.

It is worth noting that both these projects feature in the fourth quartile of the projects we have analysed. The capex intensity for the projects is > US$23,000/t, significantly higher than the average of US$17,450/t.

Grade tick-up likely to see production move up; we see risks to production guidance for FY18

In the near to medium term, lower grade has led to production disappointing in 1H18. The company has guided to a material pick-up in grade, particularly at the Centinela mine, which should see a significant ramp-up in 2H18. While we forecast a production uplift of c.20% HoH, we still expect the company to miss its FY18 guidance: Anto's FY18 guidance is 705-740Kt vs. our forecast of 700Kt. Any slippage here is likely to mean that the company misses on its FY18 guidance and would be a negative catalyst. Note that the production data from Chilean Copper Association showed a continued decline in production at both Los Pelambres and Centinela in July, which means that the uplift required in the remaining months is even higher.

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Valuation and key risks

We value Anto on a 5.5x (previously 5x) 50/50 2018/19E EV/EBITDA to derive our 12-month price target of 725p (previously 800p), and downgrade the stock to Sell. We increase our target multiple to reflect mid-cycle earnings vs. peak earnings as was implied by our copper price assumptions previously. Our estimates change as we update for the new copper deck and mtm for 3Q commodity prices and FX. Our price target implies downside of 18% vs. average upside of 15% for our coverage. Our 2019 EBITDA estimate is c.10% below StarMine SmartEstimates consensus (Thomson Reuters).

Key risks to our view and price target include higher/lower copper prices than we expect, a weaker/stronger Chilean peso and stronger/weaker operational performance than we forecast. The key near-term risk relates to the guidance cut that we expect the company to announce with the 3Q results. If the company is able to ramp up production at Los-Pelambres/Centinela, this would be a material risk to our thesis.

What would make us more positive: To be more positive, we would need to see the company: (1) move down the cost curve; (2) improve production to reach the guidance; and (3) improve the economics of the brownfield project.

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Exhibit 77: Antofagasta key financials

Antofagasta Plc

Ticker	ANTO.L			Price as at close on 03 Oct 18	GBp 879	Analyst #1	Eugene King
Market Cap & EV	US$11,275mn	US$13,952mn		12-month Price Target	GBp 725	Email	eugene.king@gs.com
Free Float	35%			Upside/ (Downside)	-18%	Analyst #2	Abhinandan Agarwal
Year End	December			Rating	Sell	Email	abhinandan.agarwal@gs.com

Production	2016	2017	2018E	2019E	2020E	2021E
Copper (kt)	709	704	702	775	774	814
Los Pelambres	355	344	345	357	358	385
Centinela concentrates	180	164	144	194	192	205
Zaldivar (Attr.)	52	52	52	56	56	56
Centinela cathodes	56	65	89	92	91	92
Michilla	0	0	0	0	0	0
Antucoya	66	80	71	76	77	76
Enceuntro Oxides	0	0	0	0	0	0
Molybdenum (kt)	7	11	12	12	12	13
Gold (koz)	271	212	182	194	192	205
Silver (koz)	3,799	3,388	2,888	3,099	3,095	3,324
Transport (kt)	6,496	6,085	6,419	6,244	6,244	6,244

Assumptions (year end)	2016	2017	2018E	2019E	2020E	2021E
Copper (US$/t)	4,870	6,170	6,555	6,875	7,000	7,100
Copper (USc/lb)	221	280	297	312	318	322
Copper TC/RC Charges (US$/t)	550	523	465	424	424	424
Molybdenum (US$/t)	14,024	15,518	22,858	20,000	20,000	20,000
Gold (US$/oz)	1,248	1,258	1,262	1,288	1,350	1,450
Silver (US$/oz)	1,714	1,706	1,219	1,717	1,929	2,231
CLP/US$	675	649	634	635	650	650
US$/GBP	1.36	1.29	1.34	1.30	1.30	1.30

Revenue by Division (%)	2016	2017	2018E	2019E	2020E	2021E
Los Pelambres	51%	51%	52%	47%	47%	48%
Centinela	37%	35%	34%	41%	40%	40%
Michilla	0%	0%	0%	0%	0%	0%
Antucoya	8%	11%	10%	10%	0%	0%
Enceuntro Oxides	0%	0%	0%	0%	9%	9%
Centinela DMC	0%	0%	0%	0%	0%	0%
Transport	4%	4%	4%	3%	0%	0%
Water	0%	0%	0%	0%	3%	3%

EBITDA by Division (%)	2016	2017	2018E	2019E	2020E	2021E
Los Pelambres	922	1428	1307	1495	1656	1792
Centinela	563	859	460	914	984	1019
Zaldivar	85	134	65	58	59	58
Michilla	0	0	0	0	0	0
Antucoya	65	207	159	226	227	225
Enceuntro Oxides	0	0	0	0	0	0
Centinela DMC	0	0	0	0	0	0
Transport	73	75	67	65	71	74
Corporate & Exploration	-101	-141	-152	-176	-176	-176

Production Costs (US$/lb)	2016	2017	2018E	2019E	2020E	2021E
Weighted avg gross costs (pre by-products)	156	164	182	177	182	188
Weighted avg net costs (post by-products)	123	124	143	141	146	149

Valuation (x)	2016	2017	2018E	2019E	2020E	2021E
Share price (GBp)	879	879	879	879	879	879
Market Cap (USD mn)	11,746	11,174	11,598	11,265	11,265	11,265
EV (USD mn)	9,464	13,455	13,952	14,156	14,411	15,372
EV/EBITDA - (attrib. EBITDA)	**5.9x**	**5.2x**	**7.3x**	**5.5x**	**5.1x**	**5.1x**
PE	**18.5x**	**14.9x**	**29.4x**	**14.3x**	**12.3x**	**11.0x**
Dividend yield (%)	**2%**	**4%**	**1%**	**3%**	**3%**	**3%**
FCF yield (%)	**0%**	**11%**	**2%**	**3%**	**4%**	**-2%**
EV/GCI	0.6x	0.8x	0.8x	0.7x	0.7x	0.7x
Price/book	1.4x	1.2x	1.2x	1.1x	1.0x	0.9x

Profit & Loss (US$ mn)	2016	2017	2018E	2019E	2020E	2021E
Sales	**3,622**	**4,749**	**4,477**	**5,397**	**5,706**	**6,125**
Operating Costs	-2,100	-2,320	-2,635	-2,873	-2,944	-3,191
EBITDA	**1,522**	**2,430**	**1,841**	**2,523**	**2,762**	**2,934**
D&A	-578	-581	-682	-710	-707	-662
EBIT	**943**	**1,849**	**1,159**	**1,813**	**2,055**	**2,272**
Net finance costs	-59	-68	-63	-53	-47	-55
Others	30	51	-64	-66	-65	-66
Underlying pre-tax profit	**914**	**1,832**	**1,032**	**1,694**	**1,943**	**2,151**
Income tax	-314	-634	-344	-567	-650	-720
Tax rate (%)	34%	35%	33%	33%	33%	33%
Minorities	-221	-447	-304	-339	-378	-402
Underlying net profit	**363**	**750**	**383**	**788**	**915**	**1,030**
Underlying EPS (USD)	0.37	0.76	0.39	0.80	0.93	1.04
Extraordinaries	-222	1	0	0	0	0
Reported net profit	**141**	**751**	**383**	**788**	**915**	**1,030**
Reported EPS (USD)	0.14	0.76	0.39	0.80	0.93	1.04
Shares outstanding (mn)	986	986	986	986	986	986
DPS (USD)	0.18	0.51	0.15	0.30	0.35	0.39
Dividend payout ratio (%)	129%	67%	37%	38%	38%	38%

Cash Flow Analysis (US$ mn)	2016	2017	2018E	2019E	2020E	2021E
Cash flow from operations	**1,013**	**2,190**	**1,218**	**1,658**	**1,973**	**2,014**
Capex	-1,009	-1,002	-963	-1,320	-1,520	-2,220
Free cash flow	**3**	**1,189**	**255**	**338**	**453**	**-206**
Others	-51	-574	-347	-203	-330	-353
Surplus/ (Deficit)	**-48**	**615**	**-92**	**135**	**123**	**-559**

Balance Sheet (US$ mn)	2016	2017	2018E	2019E	2020E	2021E
Cash	2,049	2,252	1,646	1,646	1,646	1,646
Other Current Assets	1,387	1,378	1,223	1,512	1,558	1,709
Total current assets	**3,435**	**3,630**	**2,868**	**3,158**	**3,204**	**3,355**
Net fixed assets	8,738	9,064	9,335	9,944	10,758	12,315
Other long-term assets	1,551	1,515	1,491	1,491	1,491	1,491
Total assets	**13,724**	**14,210**	**13,695**	**14,593**	**15,452**	**17,162**
Short-term debt	837	754	562	562	562	562
Other Current Liabilities	717	809	640	752	775	850
Total current liabilities	**1,554**	**1,562**	**1,202**	**1,314**	**1,337**	**1,412**
Long-term debt	2,283	1,955	1,632	1,497	1,375	1,934
Other long-term liabilities	1,377	1,551	1,489	1,489	1,489	1,489
Total liabilities	**5,214**	**5,068**	**4,323**	**4,300**	**4,200**	**4,835**
Total common equity	6,815	7,318	7,243	7,826	8,407	9,080
Minority interest	1,694	1,823	2,128	2,467	2,845	3,247
Total liabilities & equity	**13,724**	**14,210**	**13,695**	**14,593**	**15,452**	**17,162**
Total Debt	3,120	2,709	2,194	2,060	1,937	2,496
Net Debt	1,072	456	548	414	291	850
Net debt/ EBITDA	0.7x	0.2x	0.3x	0.2x	0.1x	0.3x
Capital Employed	11,630	11,850	11,566	12,353	13,189	14,823

Ratios	2016	2017	2018E	2019E	2020E	2021E
CROCI (%)	8%	13%	7%	10%	10%	10%
Net debt / equity	13%	5%	6%	4%	3%	7%
ROIC (%)	5%	10%	7%	10%	11%	11%
ROA (%)	3%	5%	3%	5%	6%	6%
ROCE (%)	3%	6%	3%	6%	7%	7%
ROE (%)	4%	8%	4%	8%	8%	8%
Gearing (%)	14%	6%	7%	5%	3%	9%

Source: Company data, Goldman Sachs Global Investment Research

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Boliden (BOL.ST): Remain Neutral on lack of catalysts

We remain Neutral rated on Boliden (BOL.ST) with a 12-month price target of Skr250.

A smelter more than a miner, with falling production profile

Boliden owns both mines and smelters with exposure to zinc and copper. On our estimates, activities related to the extraction and refining of copper account for c.40%-45% of Boliden's earnings. Overall, Boliden's smelting capacity in both zinc and copper exceeds its mine production, which leaves the company exposed to the concentrate market. In copper specifically, Boliden currently has a smelting capacity of c.380kt while we estimate its FY18 mine zinc in concentrate production to be around 112kt. In addition, Boliden faces a falling production profile owing to falling copper grades at its Aitik mine and the potential depletion of its Kylyahti mine by 2020E. Hence, investment in exploration/external growth is likely required to maintain a integrated business model in copper.

Remain Neutral on the stock given lack of catalysts

Our pricing deck, in the absence of any material growth drivers, implies a rolling over in Boliden's returns and cash generation from recent highs. Following the recent sell-off in the shares, Boliden trades c.10% below the sector average. However, our Neutral view on the stock reflects a lack of clear catalysts in the near term.

Valuation and key risks

We value Boliden using a 5.5x EV/EBITDA multiple applied to our 2018 estimate to derive a 12-month price target of Skr250 (unchanged). Our estimates change as we update for the new copper deck and mtm for 3Q commodity prices and FX. Our price target is unchanged on account of lower net debt.

Key risks are higher/lower commodity prices, a further deterioration in smelting terms/improvement above our expectations, and a strengthening/weakening Skr vs. the USD.

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First Quantum (FM.TO): Cobre targets likely to be revised but doesn't change our investment thesis; remain Buy

We are Buy rated on First Quantum with a 12-month price target of C$18.

Cobre Panama coming online next year, albeit at a lower level

We continue to expect Cobre Panama to coming online in 2019. However, we believe that the current guidance of c.150Kt for 2019 is on the optimistic side, and forecast lower volumes of c.100kt for next year. This reflects reason the significant construction work still required to be done at the mine, as a result of which we believe that the production targets are likely to be reset. However, we do not believe that the resetting of the target would be a material negative for the shares as most investors we have spoken to believe the 2019 target is optimistic.

Sentinel still growing, capex decision on Kansanshi to be taken soon

From the existing portfolio, First Quantum still has some growth left, mostly from Sentinel, where the mine is yet to reach full production. The bottleneck there is the smelting capacity at Kansanshi, which the company is working around; First Quantum can either invest in a new smelter or use third-party smelters. In addition, we believe that First Quantum will need to take a decision on Kansanshi capex soon (the Kansanshi 2.5 plan was put on hold in 2015).

Zambia risks set to abate over the medium term; deleveraging to drive re-rating

In March 2018, the Zambian Revenue Authority imposed a c.US$8 bn fine on First Quantum for "underpayment of taxes". With its 1Q2018 results, First Quantum stated that it had been through 1/3rd of the documents by value and that it expected the final amount to be small. This was reiterated with the 2Q results. We believe a resolution of this issue, ending the associated uncertainty, would be positively received by the market. We also expect significant deleveraging for First Quantum, which should allow the shares to continue to re-rate; we forecast net debt to EBITDA to decrease from 5x in 2017 to c.1x by 2020E. This reflects production ramps-up at Cobre Panama and capex winding down.

Valuation and key risks

We value First Quantum Minerals on a 50/50 blend of 5.5x 2018/19E EV/EBITDA, giving a 12m price target of C$18 (previously C$24). Our estimates change as we update for the new copper deck and mtm for 3Q commodity prices and FX. Key risks to our view are projects underperforming, Cobre Panama being delayed, weaker copper prices and balance sheet stress.

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Lundin Mining (LUMIN.ST/LUN.TO): Candelaria ramp-up proceeding according to plan; focus likely to remain on inorganic growth

We are Neutral rated on Lundin Mining (LUMIN.ST/LUN.TO) with 12-month price targets of Skr50/C$7.3.

Strong B/S likely to be deployed towards M&A rather than enhanced returns

While Lundin has one of the strongest balance sheets in our coverage, we believe this is unlikely to translate into higher investor returns. In our view, the company's focus remains inorganic growth, and we would expect it to look for alternative acquisitions. While the company has a successful record of making acquisitions, we note that asset valuations, especially copper, are high at present. This creates the risk of dilution in the event of M&A.

While we expect operational improvement at Candelaria, we believe the investor focus is likely be on corporate level activity. As a result, we take a more conservative view and remain Neutral rated on the stock.

Lack of immediate catalysts post withdrawal from Nevsun acquisition

Lundin Mining bid for Nevsun Resources on May 7. However, in September, Nevsun announced that it has entered into a friendly all-cash offer to be acquired by Zijin Mining for US$1.41 bn. This is an all-cash deal and represents a 26% premium to Lundin Mining's offer. Lundin subsequently announced that it would not increase its offer for the company.

We had regarded the announced Nevsun acquisition as an important catalyst for the company. Nevsun intends to build the Timok project, which Lundin had expressed an interest in acquiring for the last couple of years, and which would have provided a growth opportunity for Lundin. However, following the termination of Lundin's approach for Nevsun, we see no immediate alternative catalysts.

Valuation and key risks

We value Lundin Mining (LUN.TO/LUMIN.ST) on a 50/50 blend of 5x (unchanged) 2018/19E EV/EBITDA, giving 12m price targets of C$7.3/Skr50 (previously C$7.5/Skr51). Our estimates change as we update for the new copper deck and mtm for 3Q commodity prices and FX.

Key risks to our view are higher/lower copper and zinc prices, market assessment of potential M&A and operational performance.

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ED_002480_00056658-00082

KAZ Minerals: Growth ahead but balance sheet stretched; remain Neutral

We remain Neutral rated on KAZ Minerals with a 12-month price target of GBp575.

Growth delivered, more ahead...

KAZ Minerals has been the best performing stock in our coverage over the past three years as it has delivered on growth, bringing Bozshakol and Aktogay to production on time and reaching c.300Ktpa of copper production. While this has been a strong performance, investors we have spoken to had hoped that after the company approved the US$1.2 bn Aktogay expansion and moved to sell a stake in its Koksay mine to China Nonferrous Metal Industry's Foreign Engineering and Construction Company Ltd, it was likely to move to a stage where it would delever and start to ramp up investor returns. However, the company more recently announced that it was acquiring the Baimskaya mine for US$900 mn. This positions the company well for growth: Aktogay Phase II should start to deliver tonnes in 2022 and Baimskaya in 2025/26.

...but balance sheet concerns material after Baimskaya acquisition

We believe the key reason why the stock has underperformed this year is concern that the balance sheet could become stretched as the company starts to spend capex on Baimskaya in the next couple of years, together with the last remaining capex on the Aktogay expansion. In addition, the market appeared to have expectations of a period of delevering that would have led to a ramp-up in returns – a catalyst that has been pushed out by at least 7-8 years (on our price forecasts).

We believe that a key development to monitor over the next couple of years will be how the company decides to fund the Baimskaya project. We see three potential options: (1) going alone and using the balance sheet to fund the project; (2) project financing, using local banks/funding sources to fund the project; this normally locks the cash flows from the project for a period of time; or (3) bringing on a partner (as Anglo did with Quellevaco); we believe this is the most likely scenario as not only does it monetise the project but it also reduces the company's risk exposure.

Valuation and Key risks

We value KAZ Minerals on 5x 50/50 2018/19E EV/EBITDA to derive our 12-month price target of 575p (previously 4x 50/50 2018/19E EV/EBITDA to get to 450p). The reason for the increase in our multiple is the new work we have done on Baimskaya, which raises our confidence in the economic viability of the project. Our estimates change as we update for the new copper deck and mtm for 3Q commodity prices and FX. Key risks to our view include higher/lower copper prices, higher/lower production volumes vs. our assumptions and FX. Another potential risk is the material capex coming ahead at Aktogay, and potentially at Baimskaya, which could present risk to the balance sheet.

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Freeport (FCX): Highest copper exposure among the US mining stocks, Maintain Buy

We remain Buy rated on Freeport with a new 12-month price target of $18.

Large, diversified copper miner set to emerge

FCX provides the most concentrated copper exposure across our North American coverage group, with copper expected to contribute 75% of full year revenues by our estimates and gold and molybdenum making up the remainder. FCX is currently developing the Lone Star project in Arizona, which leverages existing mine infrastructure from the Safford operation and is expected to produce 200 mn lbs/year for 20 years, starting toward the end of 2020. FCX also sees future potential for a large sulfide resource at El Abra and numerous other brownfield developments in the US and maintains a 39.6% ownership stake (54% after completion of the feasibility study) in the Lower Zone of the Timok copper-gold project in Serbia with Nevsun.

Final execution of the Grasberg divestment agreement and progress on the mine's transition underground will be the key drivers over 2019

The longstanding negotiations among FCX, Rio Tinto, and the Indonesian government regarding long-term operations and ownership of the Grasberg mine took another step toward full resolution with the September 27, 2018 signing of the Divestment Agreement. The agreement, which will see FCX cede majority ownership of the mine to Inalum, a state-owned company, while maintaining control of operations, investment, and governance, also allows Freeport to maintain essentially the same cash flows as expected pre-divestment. Remaining hurdles through year-end 2018 include anti-trust approvals, finalizing of the mining permit, and documentation and resolution of environmental issues, with the transaction expected to close during 1Q19. Once complete, we look for FCX to focus on the operating challenges at Grasberg, which faces a highly complex transition from an open-pit mine to a fully underground operation – adding some downside risks to production in the near term, in our view.

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Valuation and key risks

Our 12-month price target moves to $18 from $19 on lower EBITDA projections over the next two years, somewhat offset by a higher valuation multiple and a higher NAV. Our price target is derived from an average of two valuation methods: (1) a 6.0x EV multiple on an average of our estimated EBITDA over two four quarter periods: forward quarters 5-8 (3Q19-2Q20) and forward quarters 9-12 (3Q20-2Q21), and (2) an NAV model with an overall discount rate of 8.7%.

Key Risks: (1) FCX and the Indonesian government could still fail to come to a resolution on environmental matters, leading to production cuts or shutdowns at the Grasberg mine; and (2) continued operational issues at the DMLZ or elsewhere could reduce Freeport's ability to meet production guidance and/or push increases in expected cash cost.

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Teck Resources (TECK): Met Coal remains the key driver of earnings, cash flow - maintain Neutral

We remain Neutral rated on TECK/TECK_B.TO and increase our 12-month price targets to US$30/C$38 from US$28/C$37 on new copper and other commodity price assumptions.

TECK operates across base metals, bulks, and energy production

TECK maintains varied mining operations across the Americas, out of which we expect its copper assets to provide 22% of revenues/EBITDA in 2018. Exports of high-quality met coal out of the Pacific Northwest are TECK's most important operations today, contributing nearly 56% of EBITDA (ex corporate expense) in 2018E, while zinc and energy, on our estimates, contribute 20% and 2%, respectively. The company's copper assets today comprise Highland Valley (Canada, 100%), Andacollo (Chile, 90%), Quebrada Blanca (QB1, Chile, 76.5%), and its interest in Antamina (Peru, 22.5%). In total, on a consolidated basis for the three majority-owned mines plus attributable production from Antamina, we expect TECK to report 288kt of copper production for 2018.

Quadra Blanca "QB2" could double copper production by 2024

Since 2015, TECK's main project has been Fort Hills, a large-scale (C$23 billion), long-lived Canadian scale oil sands operation with Suncor as majority owner and operator. Now, the company's attention is rotating toward copper, where TECK has 90% ownership of the C$4.7 billion Quebrada Blanca 2 (QB2) copper project that could produce up to 300ktpa of copper at a "2nd quartile" cost position and a 25 year mine life – leveraging, as TECK's management has highlighted, only 25% of the current reserve and resource base. With regulatory approval of the EIA complete as of August 8, 2018, the company plans to sell down 20%-25% of its ownership to a development partner, chosen over 4Q18, and pursue Board approval soon afterward. First production is projected for mid-2021.

Valuation and key risks

Over the near term, our new reduced GIR copper forecast and changes in FX offset the benefits of marginally higher coking coal prices and lead to reductions in our earnings estimates for TECK. However, higher projected medium-term copper prices lift our NAV. While our forward quarter 5-8 EBITDA estimate decline, a slightly higher multiple and a higher NAV drive our 12-month price targets up to $30/C$38 from $28/$C37.

Key risks: (1) Commodity prices; (2) cost inflation; and (3) better-than-expected results of trials for alternative water treatment at Elkview, which could lower future expectations of coal operating costs and required sustaining capital.

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ED_002480_00056658-00086

Aurubis (NAFG.DE): Remain Neutral on continued bearish outlook for TC/RCs

We remain Neutral rated on Aurubis with a 12-month price target of €60.

Continue to see downside risks to TC/RCs in 2019

We continue to believe that treatment and refining charges are likely to face downward pressure in 2019, mainly as a result of the concentrate deficit we forecast the market to be in. Our forecasts imply a c.10% drop in both TCs and RCs, which implies the company's earnings profile remaining challenged despite the €60 mn cost-cutting programme.

Things that could surprise us

Factors that could surprise us to the upside here are: (1) refining charges: refining charges have remained strong mainly as a result of China imposing bans on certain type of copper imports. While our view remains that this was likely a one-off, China is looking to impose a ban on additional scrap imports; (2) the company has stated that it is looking to sell RFP (flat rolled products), its downstream business (the contribution to earnings from the business is c.€10 mn this year, on our estimates). If a sale of this business resulted in material cash inflows that were returned to shareholders, this would also be a positive catalyst; (3) M&A: The CEO has talked about acquiring more smelting business and growing earnings inorganically. If the company were to make a synergistic acquisition, this would be a positive catalyst for the stock.

Valuation and key risks

Our revised 12m price target of €60 (from €61) values the stock on a 5.5x EV/EBITDA multiple on 50/50 FY18/19E earnings. In our valuation, we assume: (1) benchmark TC/RCs settling at US$75/t and USc7.5/lb vs. this year's level of US$82.5/t and USc8.25/lb; and (2) scrap RCs coming off recent highs (-10% in FY19E vs. FY18E), albeit remaining elevated vs. history given the changes in China's import policy. Our estimates change on account of updated copper prices, and mtm of 3Q commodity prices and FX.

Key risks to our view include: lower/higher-than-expected tailwinds from a recovery in copper scrap availability post recent ferrous price moves; higher/lower sulfuric acid prices; and the efficiency program delivering above/below expectations.

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ED_002480_00056658-00087

KGHM (KGH.WA): Persistently weak FCF generation not priced in; Sell

We remain Sell rated on KGHM with a 12-month price target of PLN89.

KGH copper business

Copper contributes c.70% of KGHM's 2017E top line (the rest is mainly silver). Major copper assets for KGH are located in the south-western part of Poland. KGH also has production facilities in North America (Canada, United States) and a JV with Sumitomo Sierra Gorda (open-pit mine in Chile).

Investment thesis

Our Sell view is based on low cash generation stemming from production reconfiguration amid continued high capex (2018-20E average capex/sales of 15%). This leads to negative FCF for the company even amid a supportive macro environment (for example, in 1H18 when Cu prices were at three-year highs, KGH reported an FCF loss amounting to 9% of its sales (vs. broadly breakeven FCF in the previous five years)). Yet, even after a significant de-rating (down 22% YTD in US$ terms), we believe the current valuation fails to reflect these challenges, with KGH trading at a premium to its own history (2019E EV/EBITDA of 5.5x vs. the five-year historical average of 3.2x). This is unjustified, in our view, given the continued suppressed FCF that we expect over the next three years. At spot macro assumptions (FX, metals), KGH trades at 6.9x EV/EBITDA and a 2% FCF yield for 2019E.

Valuation and key risks

We are Sell rated on KGHM. Our 12-month SOTP-based price target is PLN89 (up slightly from PLN88 on weaker FX). The increase in our estimates reflects our incorporation of our latest copper price assumptions. Our price target rises less significantly owing to an increase in net debt. Key risks to our view are higher-than-expected Cu/Ag prices, a weaker-than-expected PLN/USD, better-than-expected cost management, the disposal/closure of non-performing international assets and easing taxation in Poland.

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ED_002480_00056658-00088

MMG (1208.HK): Benefit from rising copper price, maintain Buy

We remain Buy rated on MMG with a 12-month price target of HK$5.8

Lower guidance for Las Bambas copper production for 2018E

MMG has lowered its Las Bambas copper output guidance to 375kt-395kt from the previous 410kt-430kt for 2018 as: (1) instability events have affected mining rates and access to high-grade ore in Las Bambas; and (2) mill throughput rates have increased but have yet to reach the plan. MMG expects these issues to affect production in 2018 but not in the medium term. Hence, we revise down Las Bambas production by 7% to 382kt in 2018E and 3% to 400kt in 2019E to reflect our own view that geological issues for the mine are likely to continue for a while. We also revise up C1 cost to US$1.1/lb from US$1.0/lb for 2018E owing to lower production volume.

Benefit from rising copper prices

We believe MMG remains a key beneficiary under rising copper prices owing to its high leverage and high exposure to copper (80% of EBITDA in 2019E from copper). Despite lower copper price assumptions for 2018-20 and reduced production volumes from Las Bambas, we expect MMG to generate US$0.99-1.21 bn of free cash flow with a free cash flow yield at 24%-29% for 2018-20E. With strong cash flow and a disciplined investment strategy, we expect net gearing to fall to 193% by 2020E from 682% in 2017A.

Valuation and key risks

Our 12-month target price of HK$5.8 (from HK$6.30) is based on historical P/B vs. ROE correlation, or 2019E P/B of 3.0x and ROE of 28%. We cut our earnings estimates by 30% for 2018, 33% for 2019 and 25% for 2020 to reflect lower copper price assumptions and output from Las Bambas in 2018-19. For each US$0.5/lb change in the copper price, we estimate earnings would move by 58% for 2019.

Key risks to our price target and thesis are: (1) commodity prices including copper, zinc and lead; and (2) operational risks including a sudden decline in ore grade.

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ED_002480_00056658-00089

Zijin (2899.HK): Emerging copper play; maintain Buy

We remain Buy rated on Zijin-H/A with 12-month price targets of HK$3.8 for H-share and Rmb4.8 for A-share.

Continued volume growth, benefit from rising copper/gold prices

We expect Zijin copper output to grow by 17%-25% in 2018-19, driven by ramp-up of the Kolwezi project and expansion of the Duobaoshan project, and copper output to almost double by 2022E from 2017A when the Kamoa project fully ramps up. By 2022, we estimate copper will contribute 57% of total gross profit (from 31% in 2017A) and gold will contribute 27%. Apart from growth from new project ramp-up and existing project expansion, Zijin is also looking for other acquisition opportunities. The company recently announced that it would acquire a 63% interest in RTB Bor Group in Serbia through public bidding and an increase of capital. The company has also proposed a cash takeover of Nevsun at a consideration of CAD$6/share. Both transactions are still in the bidding process and we calculate Zijin would pay Rmb18 bn in total for acquisitions if it secures the two deals on the current proposed terms. We estimate that if completed, these two deals could bring at least 268kt of copper output to Zijin, versus Zijin's 2017 copper output of 208kt. However, as most projects in the deals are greenfield or need upgrades, the timing of operation and earnings contribution is uncertain.

Gold price assumptions change

Our commodities team recently revised down their gold price forecast to US$1,262/oz in 2018 and US$1,288/oz in 2019 from a prior US$1,340/oz in 2018 and US$1,450/oz in 2019 as they believe EM concerns have created a sizeable fall in financial and physical holdings. However, they still expect gradually higher gold prices driven by renewed EM demand.

Valuation and key risks

Our 12-month target prices of HK$3.8 (from HK$3.9) for H-share and Rmb4.8 (from Rmb4.9) for A-share are based on historical P/B vs. ROE correlation, or 2019E P/B of 1.9x/2.8x for H/A-share and ROE of 12%. We cut our earnings estimates by 9% for 2018, 20% for 2019 and 17% for 2020 to reflect lower copper and gold price assumptions.

Key risks to our price target and thesis are: (1) gold and copper prices: FY19E earnings change 11% for every US$100/oz change in the gold price or 5% for every US$0.01/lb change in the copper price; and (2) project execution, which is key to sustaining the company's growth profile.

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ED_002480_00056658-00090

Jiangxi Copper (0358.HK): Fairly valued with no volume growth

We remain Neutral rated on Jiangxi Copper H/A with a 12-month price target of HK$11.5 for H-share and Rmb17.1 for A-share.

Fairly valued with no volume growth

In line with our commodities team's copper price forecast, we expect the SHFE copper price to average US$2.96/lb in 2018 and US$3.06/lb in 2019. Under this copper price assumption, we expect Jiangxi Copper's recurring profit to reach Rmb2.6 bn in 2018 and Rmb2.7 bn in 2019. We believe current valuation, at a 2019E EV/EBITDA of 5x, looks fair considering no volume growth for the company.

China copper demand to maintain low-single-digit growth

We expect Chinese copper demand growth to remain soft at 1%-3% per year for 2018-19. Our recent channel checks with fabricators suggested demand for copper was mostly flat MoM in September 2018, with a continued deceleration of order growth in air conditioners offset by a slight improvement in grid orders – remaining soft overall, in line with seasonal patterns. For each US$0.5/lb change in the copper price, we estimate earnings would move by 23% for 2019E. The company's balance sheet remains healthy, with net gearing at 8%-14% for 2018-20E.

Valuation and key risks

Our 12-month target price is based on historical P/B vs. ROE correlation, or 2019E P/B of 0.7x/1.2x for H/A-share and ROE of 5.4%. Our price targets are HK$11.5 (from HK$12.7) for H-share and Rmb17.1 (from Rmb18.8) for A-share. We cut our earnings estimate by 12% for 2018, 19% for 2019 and 17% for 2020 to reflect lower copper price assumptions.

Key risks to our price target and thesis are: (1) Jiangxi Copper's earnings are highly leveraged to commodity prices (copper and gold), which depend on industry supply additions and global economic growth;)2) changes in government trade policy could have an impact on earnings; and (3) CNY fluctuations would have an impact on earnings.

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Copper supply-demand balance

Exhibit 78: Copper Supply model

('000 tonnes)	2010	2011	2012	2013	2014	2015	2016	2017	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Mine Production																
Base Conc Production	12813	12692	13150	14416	14765	15410	16344	16397	17172	17841	18573	19121	19442	18910	18796	18233
New Conc Production									0	10	171	266	481	750	966	1246
Adjustment									0	0	0	0	0	300	500	1000
Disruption Allowance									-500	-803	-937	-969	-996	-998	-1013	-1024
Total Concs/Precips Production	12813	12692	13150	14416	14765	15410	16344	16397	16672	17048	17806	18418	18926	18962	19249	19455
% change		*-0.9%*	*3.6%*	*9.6%*	*2.4%*	*4.4%*	*6.1%*	*0.3%*	*1.7%*	*2.3%*	*4.5%*	*3.4%*	*2.8%*	*0.2%*	*1.5%*	*1.1%*
Smelter Production																
less direct use concs	-18	-21	-18	-20	-21	-14	-11	-15	-20	-22	-20	-18	-16	-16	-16	-16
Concs available for smelting	12795	12671	13132	14396	14744	15396	16333	16382	16652	17026	17786	18400	18910	18946	19233	19439
Conc stock change	251	-203	170	668	-147	105	215	-117	-50	-100	250	150	150	0	-100	-300
Concs needed by smelters	12544	12874	12962	13728	14891	15291	16118	16499	16702	17126	17536	18250	18760	18946	19333	19739
Smelter losses	-478	-459	-495	-487	-556	-553	-509	-524	-551	-565	-579	-602	-619	-625	-638	-651
Add: Scrap/Resmelted blister	2646	2966	3130	2986	2811	2675	2893	3094	3090	3168	3244	3376	3471	3600	3673	3751
Total Smelter Production	14712	15381	15597	16227	17146	17413	18502	19069	19241	19729	20202	21024	21612	21920	22368	22839
Electro- and Fire-Refined Production																
less resmelted and direct use of blister	-689	-672	-781	-726	-796	-872	-985	-1083	-1068	-1049	-1009	-1084	-1134	-1134	-1134	-1134
Blister stock change	-68	-23	-66	-33	-2	42	136	158	-80	30	30	60	80	10	20	50
Blister required for refineries	14091	14732	14882	15534	16352	16499	17381	17828	18253	18650	19163	19880	20398	20776	21214	21655
Add Scrap	1622	1650	1764	1634	1693	1715	1537	1577	1597	1632	1677	1739	1785	1870	1909	1949
Electro-refined Cu Production	15713	16382	16646	17168	18045	18214	18918	19405	19850	20282	20840	21619	22183	22646	23123	23604
Electrowon Cathode Production																
Base SxEw Production	3236	3345	3510	3652	3712	3785	3825	3689	3692	3848	3826	3563	3398	3203	2999	2647
New SxEw Production									8	22	65	86	123	153	173	185
Adjustment									0	0	0	0	0	0	0	100
Disruption Allowance									-100	-174	-195	-182	-176	-168	-159	-147
Total SxEw Production	3236	3345	3510	3652	3712	3785	3825	3689	3600	3696	3697	3467	3344	3188	3013	2784
% change		*3.4%*	*4.9%*	*4.0%*	*1.7%*	*1.9%*	*1.1%*	*-3.6%*	*-2.4%*	*2.7%*	*0.0%*	*-6.2%*	*-3.5%*	*-4.7%*	*-5.5%*	*-7.6%*
Total Refined Cu Production	18950	19727	20156	20820	21757	21998	22743	23094	23449	23977	24537	25086	25527	25834	26136	26388
% change		*4.1%*	*2.2%*	*3.3%*	*4.5%*	*1.1%*	*3.4%*	*1.5%*	*1.5%*	*2.3%*	*2.3%*	*2.2%*	*1.8%*	*1.2%*	*1.2%*	*1.0%*

Source: Goldman Sachs Global Investment Research, Wood Mackenzie

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Exhibit 79: Copper Demand model

('000 tonnes)	2011	2012	2013	2014	2015	2016	2017	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Consumption - DM															
US	1757	1762	1795	1815	1847	1853	1811	1721	1724	1708	1695	1689	1690	1696	1710
% change y/y	*-0.5%*	*0.3%*	*1.9%*	*1.1%*	*1.8%*	*0.3%*	*-2.3%*	*-5.0%*	*0.2%*	*-0.9%*	*-0.8%*	*-0.4%*	*0.1%*	*0.4%*	*0.8%*
Europe	4083	3735	3773	3835	3670	3701	3754	3822	3867	3918	3974	4030	4088	4147	4207
% change y/y	*1.5%*	*-8.5%*	*1.0%*	*1.6%*	*-4.3%*	*0.8%*	*1.4%*	*1.8%*	*1.2%*	*1.3%*	*1.4%*	*1.4%*	*1.4%*	*1.4%*	*1.4%*
Japan	1003	985	990	1050	1008	985	1025	1046	1078	1077	1074	1071	1067	1062	1058
% change y/y	*-5.4%*	*-1.8%*	*0.5%*	*6.1%*	*-4.0%*	*-2.3%*	*4.1%*	*2.0%*	*3.1%*	*-0.1%*	*-0.3%*	*-0.3%*	*-0.4%*	*-0.5%*	*-0.4%*
Other DM	1774	1626	1637	1600	1588	1625	1648	1608	1575	1547	1531	1523	1521	1526	1537
% change y/y	*-10.2%*	*-8.3%*	*0.7%*	*-2.3%*	*-0.7%*	*2.3%*	*1.4%*	*-2.4%*	*-2.1%*	*-1.8%*	*-1.0%*	*-0.5%*	*-0.1%*	*0.3%*	*0.7%*
Sub-Total DM	**8617**	**8108**	**8195**	**8300**	**8113**	**8164**	**8238**	**8197**	**8244**	**8250**	**8274**	**8313**	**8366**	**8431**	**8512**
% change y/y	*-2.3%*	*-5.9%*	*1.1%*	*1.3%*	*-2.3%*	*0.6%*	*0.9%*	*-0.5%*	*0.6%*	*0.1%*	*0.3%*	*0.5%*	*0.6%*	*0.8%*	*1.0%*
Consumption - EM															
China	7815	8204	9165	9836	10185	10678	11054	11526	11739	12033	12267	12472	12628	12773	12903
% change y/y	*8.5%*	*5.0%*	*11.7%*	*7.3%*	*3.5%*	*4.8%*	*3.5%*	*4.3%*	*1.9%*	*2.5%*	*1.9%*	*1.7%*	*1.3%*	*1.1%*	*1.0%*
Other EM	3175	3262	3326	3485	3628	3727	3748	3853	3995	4147	4363	4637	4974	5375	5846
% change y/y	*-0.1%*	*2.7%*	*2.0%*	*4.8%*	*4.1%*	*2.7%*	*0.6%*	*2.8%*	*3.7%*	*3.8%*	*5.2%*	*6.3%*	*7.3%*	*8.1%*	*8.8%*
Sub-Total EM	**10990**	**11466**	**12491**	**13321**	**13813**	**14405**	**14802**	**15379**	**15734**	**16180**	**16630**	**17109**	**17602**	**18148**	**18749**
% change y/y	*5.9%*	*4.3%*	*8.9%*	*6.6%*	*3.7%*	*4.3%*	*2.8%*	*3.9%*	*2.3%*	*2.8%*	*2.8%*	*2.9%*	*2.9%*	*3.1%*	*3.3%*
Total Global Consumption	**19607**	**19574**	**20686**	**21621**	**21926**	**22569**	**23040**	**23576**	**23978**	**24430**	**24904**	**25422**	**25968**	**26579**	**27261**
% change y/y	*2.1%*	*-0.2%*	*5.7%*	*4.5%*	*1.4%*	*2.9%*	*2.1%*	*2.3%*	*1.7%*	*1.9%*	*1.9%*	*2.1%*	*2.1%*	*2.3%*	*2.6%*
Total Global Production															
Mine Production	16037	16660	18068	18477	19194	20169	20086	20272	20743	21504	21885	22271	22150	22262	22240
% change y/y	*-0.1%*	*3.9%*	*8.5%*	*2.3%*	*3.9%*	*5.1%*	*-0.4%*	*0.9%*	*2.3%*	*3.7%*	*1.8%*	*1.8%*	*-0.5%*	*0.5%*	*-0.1%*
Refined Copper	19727	20156	20820	21757	21998	22743	23094	23449	23977	24537	25086	25527	25834	26136	26388
% change y/y	*4.1%*	*2.2%*	*3.3%*	*4.5%*	*1.1%*	*3.4%*	*1.5%*	*1.5%*	*2.3%*	*2.3%*	*2.2%*	*1.8%*	*1.2%*	*1.2%*	*1.0%*
Global Supply/Demand Balance	120	582	134	136	72	174	54	-126	-1	107	182	105	-134	-442	-873
Inventory															
Exchange (Comex, LME, SHFE)	545	589	507	307	482	539	543								
Other	2867	3405	3621	3957	3855	3972	4022								
Total	3412	3994	4128	4264	4337	4511	4565	4438	4437	4545	4727	4831	4697	4255	3382
Stock days of consumption	64	74	73	72	72	73	72	69	68	68	69	69	66	58	45
Cash Prices (annual average)															
Current Dollars ($/t)	8810	7949	7322	6862	5494	4862	6166	6550	6885	7023	7163	7306	7729	8446	9764
Current Dollars (c/lb)	400	361	332	311	249	221	280	297	312	319	325	331	351	383	443
Real 2018 Dollars ($/t)	9812	8674	7874	7261	5807	5075	6292	6550	6750	6750	6750	6750	7000	7500	8500
Real 2018 Dollars (c/lb)	445	393	357	329	263	230	285	297	306	306	306	306	318	340	386

Source: Goldman Sachs Global Investment Research, Wood Mackenzie

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Copper top projects location

Exhibit 80: Map of projects analysed as part of the Copper Top Projects

Source: Company data

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Copper Top Projects: Summaries

Exhibit 81: Copper Top Projects: Summary

Project	Owner 1	Country	Status	Project type	Board approved	Start date	Announced Capex (US$ mn)	GS Capex (US$ mn)	Unit capex (US$ / t) Cu	Unit capex (US$ / t) Cu equ.	NPV @ 8% (incl sunk) (US$ mn)	NPV @ 8% (2017+) (US$ mn)	Payback (years)	IRR	IRR (2017+)	Cu price required @ risked-IRR	Peak Cu output	LOM avg Cu output	Total cash cost ($/t)	Total cash cost (c/lb)	EBITDA margin
Agua Rica	Yamana Gold	Argentina	Feasibility	Greenfield	No	2023	$2,200	$2,200	$13,750 /t	$10,043 /t	$2,139	$2,139	5.32	19.4%	19.4%	$7,854 /t	200 ktpa	160 ktpa	$4,198 /t	190 c/lb	44%
Ajax	KGHM	Canada	Permitting	Greenfield	No	2021	$900	$1,000	$18,868 /t	$12,953 /t	$336	$370	8.36	14.0%	15.3%	$6,249 /t	69 ktpa	53 ktpa	$4,327 /t	196 c/lb	37%
Aktogay Phase 2	KAZ Minerals	Kazakhstan	Producing	Brownfield	Yes	2021	$1,200	$1,220	$19,629 /t	$18,558 /t	$1,148	$1,148	5.76	16.1%	16.1%	$5,692 /t	81 ktpa	62 ktpa	$3,649 /t	166 c/lb	59%
Andina Phase 2	Codelco	Chile	Feasibility	Brownfield	No	2024	$6,800	$7,600	$22,157 /t	$20,644 /t	$319	$319	9.44	8.6%	8.6%	$8,796 /t	350 ktpa	343 ktpa	$4,498 /t	204 c/lb	46%
Ann Mason	Mason Resources Corp	USA	Scoping	Greenfield	No	2023	$1,351	$1,451	$13,191 /t	$12,284 /t	$821	$821	6.74	15.1%	15.1%	$6,702 /t	121 ktpa	110 ktpa	$4,629 /t	210 c/lb	42%
Asmara	Sichuan R&BMIDC	Eritrea	Permitting	Greenfield	Yes	2021	$559	$609	$26,386 /t	$12,337 /t	$668	$668	6.92	23.1%	23.1%	$6,932 /t	28 ktpa	23 ktpa	$1,683 /t	76 c/lb	49%
Aynak	China Metallurgical Group Corp.	Afghanistan	Permitting	Greenfield	No	2024	$4,400	$4,900	$15,313 /t	$15,313 /t	-$543	-$543	9.66	5.9%	5.9%	$12,509 /t	320 ktpa	320 ktpa	$5,374 /t	244 c/lb	36%
Baimskaya	Baimskaya Mining Company LLC	Russia	Feasibility	Greenfield	Yes	2024	$5,500	$5,600	$31,206 /t	$23,156 /t	$2,350	$2,381	6.35	12.4%	12.5%	$5,433 /t	316 ktpa	179 ktpa	$2,114 /t	96 c/lb	58%
Canariaco Norte	Candente Copper Corp	Peru	Feasibility	Greenfield	No	2023	$1,565	$1,700	$14,286 /t	$13,153 /t	$1,939	$1,939	4.32	21.1%	21.1%	$5,259 /t	166 ktpa	119 ktpa	$3,760 /t	171 c/lb	59%
Carrapateena	OZ Minerals	Australia	Construction	Greenfield	Yes	2020	$687	$789	$12,138 /t	$10,126 /t	$1,224	$1,453	4.05	21.3%	31.4%	$4,233 /t	66 ktpa	65 ktpa	$3,628 /t	165 c/lb	53%
Casino	Western Copper & Gold Corp.	Canada	Permitting	Greenfield	Yes	2023	$3,345	$3,545	$41,357 /t	$25,365 /t	-$432	-$399	11.78	6.7%	6.8%	$8,069 /t	181 ktpa	86 ktpa	$4,836 /t	219 c/lb	33%
Centinela DMC	Antofagasta	Chile	Feasibility	Brownfield	No	2022	$2,700	$2,970	$24,829 /t	$18,425 /t	$726	$726	9.11	10.1%	10.1%	$9,122 /t	130 ktpa	120 ktpa	$4,065 /t	184 c/lb	43%
Cerro Casale	Barrick Gold	Chile	Permitting	Greenfield	No	2025	$6,000	$6,000	$57,313 /t	$25,032 /t	$989	$989	8.66	10.1%	10.1%	$9,964 /t	110 ktpa	105 ktpa	$4,438 /t	201 c/lb	66%
Chambishi	China Non-Ferrous Metals	Zambia	Construction	Greenfield	Yes	2018	$700	$750	$13,777 /t	$10,479 /t	$228	$408	8.17	13.4%	21.8%	$6,800 /t	59 ktpa	54 ktpa	$4,630 /t	210 c/lb	37%
Chuquicamata U/G	Codelco	Chile	Construction	Brownfield	Yes	2020	$4,000	$4,200	$12,764 /t	$11,222 /t	$4,203	$6,670	9.04	13.2%	24.6%	$7,482 /t	366 ktpa	329 ktpa	$4,266 /t	193 c/lb	42%
Cobre Panama	First Quantum	Panama	Construction	Greenfield	Yes	2019	$6,300	$6,350	$20,196 /t	$19,164 /t	$3,505	$8,745	8.59	10.5%	38.7%	$8,883 /t	334 ktpa	314 ktpa	$4,021 /t	182 c/lb	51%
Collahuasi GL4	Glencore	Chile	Pre-feasibility	Brownfield	No	2025	$4,000	$4,350	$14,921 /t	$14,041 /t	$2,888	$2,888	6.53	15.2%	15.2%	$6,651 /t	300 ktpa	292 ktpa	$4,742 /t	215 c/lb	45%
Cotabambas	Panoro Minerals Ltd.	Peru	Pre-feasibility	Greenfield	No	2023	$1,533	$1,633	$24,123 /t	$17,347 /t	$218	$218	9.41	9.7%	9.7%	$8,210 /t	72 ktpa	68 ktpa	$4,144 /t	188 c/lb	39%
Cristalino	Vale	Brazil	Pre-feasibility	Greenfield	No	2025	$1,500	$1,550	$13,129 /t	$12,183 /t	$1,686	$1,686	4.91	17.8%	17.8%	$8,672 /t	121 ktpa	118 ktpa	$4,285 /t	194 c/lb	51%
Cuajone	Southern Copper	Peru	Feasibility	Brownfield	No	2024	$500	$500	$10,200 /t	$9,809 /t	$1,049	$1,049	3.73	24.9%	24.9%	$7,920 /t	50 ktpa	49 ktpa	$4,919 /t	223 c/lb	53%
El Abra mill	Freeport	Chile	Pre-feasibility	Brownfield	No	2027	$5,074	$5,274	$15,502 /t	$15,502 /t	-$2,230	-$2,230	6.00	-8.9%	-8.9%	$4,870 /t	347 ktpa	340 ktpa	$7,515 /t	341 c/lb	36%
El Arco	Southern Copper	Mexico	Scoping	Greenfield	No	2026	$3,000	$3,200	$18,955 /t	$16,936 /t	$890	$890	8.05	11.1%	11.1%	$4,870 /t	190 ktpa	169 ktpa	$8,333 /t	378 c/lb	43%
El Pachón	Glencore	Argentina	Pre-feasibility	Greenfield	No	2026	$4,100	$4,500	$16,243 /t	$15,878 /t	$1,699	$1,699	6.70	13.0%	13.0%	$10,029 /t	402 ktpa	277 ktpa	$4,703 /t	213 c/lb	41%
El Pilar	Southern Copper	Mexico	Construction	Greenfield	Yes	2019	$159	$179	$5,818 /t	$5,818 /t	$409	$409	3.98	31.6%	31.6%	$4,765 /t	33 ktpa	31 ktpa	$4,300 /t	195 c/lb	49%
El Teniente NNM	Codelco	Chile	Construction	Brownfield	Yes	2023	$5,000	$5,100	$12,530 /t	$11,904 /t	$3,497	$4,720	7.35	12.6%	17.2%	$7,460 /t	434 ktpa	407 ktpa	$4,567 /t	207 c/lb	39%
Florence Copper	Taseko Mines Ltd.	USA	Construction	Greenfield	Yes	2018	$200	$220	$6,576 /t	$6,576 /t	$885	$905	6.62	32.1%	38.1%	$4,870 /t	39 ktpa	33 ktpa	$3,971 /t	180 c/lb	56%
Frieda River	Guangdong Rising H.K. (Holdings) Ltd.	PNG	Permitting	Greenfield	No	2027	$3,600	$3,800	$22,782 /t	$17,861 /t	$2,361	$2,361	5.01	18.8%	18.8%	$8,499 /t	290 ktpa	167 ktpa	$3,070 /t	139 c/lb	60%
Galeno	China Minmetals	Peru	Feasibility	Greenfield	No	2026	$2,500	$2,700	$17,161 /t	$14,288 /t	$1,252	$1,252	6.24	15.4%	15.4%	$6,471 /t	164 ktpa	157 ktpa	$3,876 /t	176 c/lb	50%
Galore Creek	Teck Resources	Canada	Pre-feasibility	Greenfield	No	2029	$5,160	$5,460	$38,551 /t	$29,614 /t	-$169	-$169	8.94	7.5%	7.5%	$4,870 /t	158 ktpa	142 ktpa	$4,299 /t	195 c/lb	0%
Grasberg BC	Freeport	Indonesia	Construction	Brownfield	Yes	2016	$6,400	$6,700	$27,245 /t	$20,363 /t	$5,817	$9,643	6.91	13.0%	35.0%	$7,514 /t	429 ktpa	246 ktpa	$2,346 /t	106 c/lb	68%
Grasberg DMLZ	Freeport	Indonesia	Construction	Brownfield	Yes	2015	$3,100	$3,200	$25,562 /t	$18,411 /t	$2,998	$5,346	9.68	13.3%	47.7%	$7,180 /t	245 ktpa	125 ktpa	$2,379 /t	108 c/lb	66%
Haquira	First Quantum	Peru	Scoping	Greenfield	No	2025	$2,058	$2,500	$16,882 /t	$15,275 /t	$1,211	$1,211	6.92	13.9%	13.9%	$6,906 /t	230 ktpa	148 ktpa	$4,741 /t	215 c/lb	46%
Harper Creek	Yellowhead Mining Inc.	Canada	Permitting	Greenfield	No	2025	$799	$960	$17,878 /t	$16,767 /t	$613	$613	6.27	15.6%	15.6%	$5,329 /t	71 ktpa	54 ktpa	$4,786 /t	217 c/lb	48%
Inca de Oro	Guangdong Rising H.K. (Holdings) Ltd.	Chile	Feasibility	Greenfield	No	2026	$800	$1,000	$21,914 /t	$17,903 /t	$220	$220	7.65	10.9%	10.9%	$7,835 /t	59 ktpa	46 ktpa	$4,260 /t	193 c/lb	41%
Jiama Phase II	China Gold International	China	Producing	Brownfield	Yes	2017	$716	$736	$7,050 /t	$5,495 /t	$3,945	$4,664	4.78	28.9%	--	$4,380 /t	110 ktpa	104 ktpa	$3,234 /t	147 c/lb	44%
Josemaria	NGEx Resources	Argentina	Pre-feasibility	Greenfield	No	2025	$2,000	$2,000	$15,385 /t	$11,359 /t	$318	$318	5.43	11.3%	11.3%	$10,971 /t	164 ktpa	130 ktpa	$4,763 /t	216 c/lb	48%
Kamoa-Kakula	Ivanhoe Mines	DRC	Pre-feasibility	Greenfield	No	2024	$2,400	$2,500	$5,152 /t	$5,152 /t	$10,370	$10,370	6.27	28.8%	28.8%	$5,650 /t	623 ktpa	485 ktpa	$3,989 /t	181 c/lb	62%
Kansanshi Sulphide	First Quantum	Zambia	Permitting	Brownfield	No	2021	$565	$585	$9,429 /t	$8,836 /t	$553	$553	4.88	20.8%	20.8%	$5,689 /t	65 ktpa	62 ktpa	$4,294 /t	195 c/lb	49%
Katanga	Glencore	DRC	Construction	Brownfield	Yes	2017	$1,096	$1,159	$4,237 /t	$1,866 /t	$17,184	$17,567	2.05	198.0%	--	$1,243 /t	300 ktpa	274 ktpa	$755 /t	34 c/lb	59%
Kerr-Sulphurets-Mitchell	Seabridge Gold	Canada	Pre-feasibility	Greenfield	No	2025	$5,500	$5,800	$41,312 /t	$18,852 /t	$496	$511	6.90	9.1%	9.1%	$5,967 /t	175 ktpa	140 ktpa	$2,497 /t	113 c/lb	57%
King King	St. Augustine Copper&Gold	Philippines	Permitting	Greenfield	No	2025	$2,042	$2,300	$37,597 /t	$22,900 /t	$683	$683	7.30	12.0%	12.0%	$12,706 /t	94 ktpa	61 ktpa	$3,728 /t	169 c/lb	51%
Koksay	KAZ Minerals	Kazakhstan	Pre-feasibility	Greenfield	No	2025	$1,500	$1,700	$22,431 /t	$20,411 /t	$413	$413	10.60	11.6%	11.6%	$6,686 /t	80 ktpa	76 ktpa	$5,193 /t	236 c/lb	44%
La Granja	Rio Tinto	Peru	Pre-feasibility	Greenfield	No	2028	$7,500	$7,500	$18,195 /t	$18,195 /t	$1,612	$1,612	10.10	11.9%	11.9%	$7,431 /t	501 ktpa	412 ktpa	$4,846 /t	220 c/lb	41%
Lone Star	Freeport	USA	Construction	Greenfield	Yes	2020	$850	$900	$10,992 /t	$10,992 /t	$632	$683	7.87	12.8%	13.5%	$4,870 /t	89 ktpa	82 ktpa	$4,906 /t	223 c/lb	34%
Los Azules	McEwen Mining	Argentina	Pre-feasibility	Greenfield	No	2025	$2,641	$2,691	$16,054 /t	$14,795 /t	$2,104	$2,104	5.29	18.6%	18.6%	$4,870 /t	230 ktpa	168 ktpa	$4,278 /t	194 c/lb	47%
Los Calatos	CD Capital	Peru	Scoping	Greenfield	No	2023	$655	$705	$18,598 /t	$16,345 /t	$462	$462	7.16	14.8%	14.8%	$6,848 /t	38 ktpa	38 ktpa	$4,095 /t	186 c/lb	50%
Los Chancas	Southern Copper	Peru	Scoping	Greenfield	No	2024	$2,800	$2,900	$25,679 /t	$20,729 /t	$543	$543	10.31	10.0%	10.0%	$4,870 /t	126 ktpa	113 ktpa	$4,839 /t	219 c/lb	47%
Los Helados	NGEx Resources	Chile	Pre-feasibility	Greenfield	No	2031	$1,225	$1,325	$8,520 /t	$7,025 /t	$1,727	$1,727	4.38	16.3%	16.3%	$5,817 /t	200 ktpa	156 ktpa	$4,911 /t	223 c/lb	48%
Los Pelambres 205	Antofagasta	Chile	Feasibility	Brownfield	No	2020	$1,800	$1,950	$25,023 /t	$23,847 /t	$27	$118	10.28	8.3%	9.1%	$8,246 /t	99 ktpa	78 ktpa	$4,281 /t	194 c/lb	48%
Mantoverde	Mantos Copper	Chile	Pre-feasibility	Brownfield	yes	2022	$800	$850	$11,586 /t	$10,863 /t	$234	$234	7.75	11.3%	11.3%	$4,870 /t	79 ktpa	73 ktpa	$4,880 /t	221 c/lb	33%
Metalkol	ENRC	DRC	Construction	Greenfield	Yes	2019	$833	$900	$13,514 /t	$5,764 /t	$4,884	$5,608	3.89	30.1%	114.6%	$3,820 /t	70 ktpa	67 ktpa	-$701 /t	-32 c/lb	76%
Michiquillay	Southern Copper	Peru	Scoping	Greenfield	No	2023	$2,500	$2,700	$12,893 /t	$11,314 /t	$569	$631	6.28	16.0%	16.0%	$6,863 /t	223 ktpa	209 ktpa	-$1,516 /t	-69 c/lb	0%
Mina Justa	Minsur	Peru	Feasibility	Greenfield	No	2021	$1,400	$1,500	$19,130 /t	$19,130 /t	$336	$336	6.64	11.5%	11.5%	$7,438 /t	110 ktpa	78 ktpa	$3,923 /t	178 c/lb	60%
Mirador	EcuaCorriente S.A	Ecuador	Construction	Greenfield	Yes	2020	$1,400	$1,500	$19,026 /t	$17,139 /t	$1,696	$2,067	6.80	15.5%	20.1%	$10,303 /t	81 ktpa	79 ktpa	$3,415 /t	155 c/lb	59%
Mopani	Glencore	Zambia	Construction	Brownfield	Yes	2018	$950	$1,025	$10,807 /t	$10,757 /t	$2,126	$3,161	5.04	19.3%	--	$5,489 /t	99 ktpa	95 ktpa	$3,764 /t	171 c/lb	47%
New Prosperity	Taseko Mines Limited	Canada	Pre-feasibility	Greenfield	No	2025	$814	$1,200	$23,509 /t	$13,274 /t	$995	$999	5.75	18.5%	18.6%	$3,557 /t	53 ktpa	51 ktpa	$3,244 /t	147 c/lb	45%
Nueva Union	Gold Corp.	Chile	Feasibility	Greenfield	No	2022	$3,500	$3,800	$21,881 /t	$16,593 /t	$3,458	$3,767	6.23	15.9%	17.7%	$6,105 /t	240 ktpa	174 ktpa	$3,599 /t	163 c/lb	50%
Olympic Dam BFX	BHP Billiton	Australia	Permitting	Brownfield	No	2018	$2,940	$3,040	$18,842 /t	$17,499 /t	$6,681	$6,681	6.97	39.62%	39.6%	$2,653 /t	177 ktpa	161 ktpa	$2,612 /t	118 c/lb	72%
Oyu Tolgoi Block Cave	Rio Tinto	Mongolia	Construction	Brownfield	Yes	2020	$5,095	$5,395	$15,749 /t	$13,374 /t	$4,073	$5,130	7.74	13.9%	17.0%	$6,791 /t	491 ktpa	343 ktpa	$3,891 /t	177 c/lb	52%
Pebble	Northern Dynasty	USA	Pre-feasibility	Greenfield	No	2027	$4,690	$5,800	$19,265 /t	$13,089 /t	$4,306	$4,306	9.74	13.1%	13.1%	$4,604 /t	350 ktpa	301 ktpa	$2,984 /t	135 c/lb	56%
Pulang	Chinalco	China	Producing	Greenfield	Yes	2017	$943	$950	$17,988 /t	$16,061 /t	$174	$1,194	9.68	9.2%	--	$8,221 /t	55 ktpa	53 ktpa	$4,550 /t	206 c/lb	37%
Pumpkin Hollow	Nevada Copper	USA	Construction	Greenfield	Yes	2020	$1,050	$1,100	$12,197 /t	$10,884 /t	$1,330	$1,596	7.28	17.2%	25.0%	$4,938 /t	125 ktpa	90 ktpa	$4,415 /t	200 c/lb	45%
Quebrada Blanca II	Teck Resources	Chile	Permitting	Brownfield	No	2022	$4,714	$4,900	$18,543 /t	$17,314 /t	$3,387	$3,540	7.34	13.9%	14.4%	$7,083 /t	320 ktpa	264 ktpa	$4,349 /t	197 c/lb	52%
Quellaveco	Anglo American	Peru	Construction	Greenfield	Yes	2023	$5,200	$5,400	$22,258 /t	$20,184 /t	$1,775	$1,901	7.82	10.8%	11.0%	$8,750 /t	313 ktpa	243 ktpa	$4,527 /t	205 c/lb	56%
Radomiro Tomic	Codelco	Chile	Feasibility	Brownfield	No	2024	$5,400	$5,900	$17,201 /t	$16,714 /t	$3,654	$3,654	8.14	15.4%	15.4%	$6,553 /t	394 ktpa	343 ktpa	$4,323 /t	196 c/lb	46%
Resolution	Rio Tinto	USA	Scoping	Greenfield	No	2027	$6,000	$6,500	$13,040 /t	$12,279 /t	$4,197	$4,309	5.35	14.6%	15.0%	$5,500 /t	600 ktpa	498 ktpa	$4,509 /t	205 c/lb	45%
Rosemont	Hudbay Minerals	USA	Permitting	Greenfield	No	2022	$1,921	$2,021	$16,136 /t	$14,058 /t	$685	$685	6.41	13.4%	13.4%	$6,005 /t	141 ktpa	125 ktpa	$4,080 /t	185 c/lb	49%
Salobo 3	Vale	Brazil	Pre-feasibility	Brownfield	No	2022	$1,000	$1,100	$18,343 /t	$12,272 /t	$1,817	$1,817	5.14	19.5%	19.5%	$4,870 /t	65 ktpa	60 ktpa	$2,079 /t	94 c/lb	61%
San Nicolas	Teck Resources	Mexico	Pre-feasibility	Greenfield	No	2025	$650	$750	$14,621 /t	$8,641 /t	$1,140	$1,140	3.79	24.4%	24.4%	$4,870 /t	54 ktpa	51 ktpa	$2,685 /t	122 c/lb	61%
Santo Domingo	Capstone Mining	Chile	Feasibility	Greenfield	Yes	2023	$1,750	$1,850	$29,959 /t	$17,588 /t	$1,610	$1,662	5.84	17.2%	17.8%	$5,476 /t	130 ktpa	62 ktpa	$1,251 /t	57 c/lb	81%
Schaft Creek	Teck Resources	Canada	Feasibility	Greenfield	No	2024	$3,257	$3,700	$34,071 /t	$23,834 /t	$7	$8	10.43	8.0%	8.0%	$7,428 /t	125 ktpa	109 ktpa	$5,252 /t	238 c/lb	44%
Sentinel	First Quantum	Zambia	Producing	Greenfield	Yes	2015	$2,000	$2,000	$9,086 /t	$9,086 /t	$5,275	$6,929	5.39	19.7%	--	$5,239 /t	255 ktpa	220 ktpa	$4,126 /t	187 c/lb	59%
Spence growth option	BHP Billiton	Chile	Construction	Brownfield	Yes	2021	$2,460	$2,510	$14,492 /t	$12,933 /t	$3,851	$3,851	5.32	18.8%	18.8%	$5,697 /t	197 ktpa	173 ktpa	$3,652 /t	166 c/lb	64%
Taca Taca	First Quantum	Argentina	Scoping	Greenfield	No	2025	$3,431	$3,900	$17,192 /t	$15,056 /t	$2,456	$2,456	6.84	15.8%	15.8%	$9,437 /t	244 ktpa	227 ktpa	$3,957 /t	179 c/lb	52%
Tampakan	Indophil Resources	Philippines	Feasibility	Greenfield	No	2025	$5,900	$6,100	$16,920 /t	$14,004 /t	$3,406	$3,406	5.81	16.2%	16.2%	$9,007 /t	451 ktpa	361 ktpa	$4,498 /t	204 c/lb	52%
Tenke Phase 3	China Molybdenum	DRC	Feasibility	Brownfield	No	2022	$500	$600	$9,045 /t	$5,214 /t	$1,443	$1,443	2.51	42.8%	42.8%	$4,117 /t	69 ktpa	66 ktpa	$2,829 /t	128 c/lb	61%
Tia Maria	Southern Copper	Peru	Permitting	Greenfield	Yes	2022	$1,400	$1,500	$13,360 /t	$13,360 /t	$1,179	$1,657	7.12	12.6%	18.8%	$7,632 /t	120 ktpa	112 ktpa	$4,041 /t	183 c/lb	56%
Tominsky	Russian Copper Company	Russia	Construction	Greenfield	Yes	2018	$1,183	$1,283	$16,042 /t	$16,042 /t	$2,058	$2,375	nm	18.8%	27.9%	$4,846 /t	105 ktpa	80 ktpa	$3,479 /t	158 c/lb	57%
Toquepala	Southern Copper	Peru	Construction	Brownfield	Yes	2018	$1,300	$1,310	$13,091 /t	$12,121 /t	$2,343	$3,318	6.00	16.2%	67.2%	$6,325 /t	103 ktpa	100 ktpa	$3,829 /t	174 c/lb	56%
Toromocho expansion	Chinalco	Peru	Construction	Brownfield	Yes	2020	$1,360	$1,400	$13,512 /t	$11,601 /t	$2,634	$2,738	5.94	21.2%	23.5%	$5,130 /t	123 ktpa	104 ktpa	$3,494 /t	158 c/lb	60%
Udokan	Baikal Mining Company	Russia	Construction	Greenfield	No	2023	$2,450	$2,695	$21,117 /t	$20,029 /t	$1,141	$1,422	8.13	11.4%	12.8%	$6,799 /t	130 ktpa	128 ktpa	$4,153 /t	188 c/lb	54%
Vizcachitas	Los Andes	Chile	Pre-feasibility	Greenfield	No	2025	$2,900	$3,000	$21,387 /t	$19,384 /t	-$182	-$182	11.23	7.1%	7.1%	$4,870 /t	173 ktpa	140 ktpa	$8,777 /t	398 c/lb	34%
Wafi Golpu	Harmony Gold	PNG	Feasibility	Greenfield	No	2025	$2,800	$3,000	$15,744 /t	$12,732 /t	$3,388	$3,388	5.98	18.2%	18.2%	$9,171 /t	207 ktpa	191 ktpa	$1,894 /t	86 c/lb	56%
Zafranal	Teck Resources	Peru	Pre-feasibility	Greenfield	No	2024	$1,157	$1,270	$32,523 /t	$29,983 /t	-$93	-$93	8.72	6.9%	6.9%	$9,148 /t	89 ktpa	39 ktpa	$4,962 /t	225 c/lb	38%
Total	-	-	-	-	-	-	$216,628	$230,910	$17,548 /t	$14,614 /t	$163,975	$190,116	14.72	15.0%	19.3%	$7,067 /t	15987 ktpa	13159 ktpa	$44 /t	2 c/lb	52%

Source: Company data, Wood Mackenzie, Goldman Sachs Global Investment Research

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Exhibit 82: Top Projects: Copper production details to 2030E

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	2016	2017	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Agua Rica	0	0	0	0	0	0	0	76	152	200	200	200	200	200	200
Ajax	0	0	0	0	0	6	24	60	69	63	60	60	56	56	58
Aktogay Phase 2	0	0	0	0	0	33	76	81	81	81	81	60	60	60	60
Andina Phase 2	0	0	0	0	0	0	0	0	140	233	350	350	350	350	350
Ann Mason	0	0	0	0	0	0	0	60	101	121	121	121	121	121	121
Asmara	0	0	0	0	0	8	25	28	28	28	28	28	28	28	28
Aynak	0	0	0	0	0	0	0	0	39	79	158	319	319	319	319
Baimskaya	0	0	0	0	0	0	0	0	0	0	34	99	180	219	286
Canariaco Norte	0	0	0	0	0	0	0	79	166	166	121	121	121	121	121
Carrapateena	0	0	0	0	66	66	66	64	64	64	64	64	64	64	64
Casino	0	0	0	0	0	0	0	5	10	42	80	84	76	77	77
Centinela DMC	0	0	0	0	0	0	0	14	72	130	130	130	130	130	130
Cerro Casale	0	0	0	0	0	0	0	0	0	28	76	110	110	110	110
Chambishi	0	0	11	37	59	59	59	59	59	59	59	59	59	59	59
Chuquicamata U/G	0	0	0	0	52	104	157	209	261	313	366	366	366	366	366
Cobre Panama	0	0	0	100	250	334	334	334	334	334	334	334	334	320	320
Collahuasi GL4	0	0	0	0	0	0	0	0	0	123	259	300	300	300	300
Cotabambas	0	0	0	0	0	0	0	18	36	72	72	72	72	72	72
Cristalino	0	0	0	0	0	0	0	0	0	55	121	121	121	121	121
Cuajone	0	0	0	0	0	0	0	0	17	50	50	50	50	50	50
El Abra mill	0	0	0	0	0	0	0	0	0	0	0	36	72	145	217
El Arco	0	0	0	0	0	0	0	0	0	0	7	26	66	131	190
El Pachón	0	0	0	0	0	0	0	0	0	0	201	402	402	402	263
El Pilar	0	0	0	5	19	33	33	33	33	33	33	33	33	33	33
El Teniente NNM	0	0	0	0	0	0	0	32	190	317	434	434	434	434	434
Florence Copper	0	0	2	2	4	12	18	24	39	39	39	39	39	39	39
Frieda River	0	0	0	0	0	0	0	0	0	0	0	0	96	175	290
Galeno	0	0	0	0	0	0	0	0	0	0	82	115	164	164	164
Galore Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	10	48
Grasberg DMLZ	12	9	8	13	66	169	245	187	187	187	187	187	161	161	161
Grasberg BC	8	11	12	23	89	189	305	384	429	310	310	310	310	310	310
Haquira	0	0	0	0	0	0	0	0	0	46	138	230	149	149	149
Harper Creek	0	0	0	0	0	0	0	0	0	20	61	71	71	59	59
Inca de Oro	0	0	0	0	0	0	0	0	0	0	30	59	59	59	44
Jiama Phase II	0	29	55	86	110	110	110	110	110	110	110	110	110	110	110
Josemaria	0	0	0	0	0	0	0	0	0	13	64	129	164	150	146
Kamoa-Kakula	0	0	0	0	0	0	0	0	24	48	233	377	369	360	406
Kansanshi Sulphide	0	0	0	0	0	16	65	65	65	65	65	65	65	65	65
Katanga	0	3	150	300	300	300	300	300	300	300	300	300	300	300	300
Kerr-Sulphurets-Mit	0	0	0	0	0	0	0	0	0	9	18	45	89	134	175
King King	0	0	0	0	0	0	0	0	0	37	94	94	75	75	71
Koksay	0	0	0	0	0	0	0	0	0	11	34	80	80	80	80
La Granja	0	0	0	0	0	0	0	0	0	0	0	0	27	73	82
Lone Star	0	0	0	0	3	15	37	89	89	89	89	89	89	89	89
Los Azules	0	0	0	0	0	0	0	0	0	206	220	169	174	230	229
Los Calatos	0	0	0	0	0	0	0	23	38	38	38	38	38	38	38
Los Chancas	0	0	0	0	0	0	0	0	10	29	48	78	126	126	126
Los Helados	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Los Pelambres 205	0	0	0	0	45	54	75	99	99	99	99	76	76	76	76
Mantoverde	0	0	0	0	0	0	10	49	79	79	79	79	79	79	79
Michiquillay	0	0	0	0	0	0	0	56	112	223	223	223	223	223	223
Metalkol	0	0	0	10	50	70	70	70	70	70	70	70	70	70	70
Mina Justa	0	0	0	0	0	22	59	79	110	110	110	110	110	110	110
Mirador	0	0	0	0	31	51	81	81	81	81	81	81	81	81	81
Mopani	0	0	31	67	99	99	99	99	99	99	99	99	99	99	99
Nueva Union	0	0	0	0	0	0	87	175	196	227	227	227	240	240	240
New Prosperity	0	0	0	0	0	0	0	0	0	32	53	53	53	53	53
Olympic Dam BFX	0	0	38	45	76	76	123	177	177	177	177	177	177	177	177
Oyu Tolgoi Block Ca	0	0	0	0	16	44	109	164	218	300	327	409	491	491	491
Pebble	0	0	0	0	0	0	0	0	0	0	0	17	87	140	175
Pulang	0	11	39	55	55	55	55	55	55	55	55	55	55	55	55
Pumpkin Hollow	0	0	0	0	7	9	18	45	90	125	125	125	125	125	125
Quebrada Blanca II	0	0	0	0	0	0	91	183	229	274	320	274	274	274	274
Quellaveco	0	0	0	0	0	0	0	23	69	115	184	313	313	313	313
Radomiro Tomic	0	0	0	0	0	0	0	0	99	148	197	296	345	394	394
Resolution	0	0	0	0	0	0	0	0	0	0	0	218	436	600	600
Rosemont	0	0	0	0	0	0	56	141	141	132	132	132	132	132	132
Salobo 3	0	0	0	0	0	4	16	47	51	51	51	51	56	61	65
San Nicolas	0	0	0	0	0	0	0	0	0	18	36	54	54	54	54
Santo Domingo	0	0	0	0	0	0	0	74	130	87	55	55	55	55	55
Schaft Creek	0	0	0	0	0	0	0	0	5	24	48	77	96	120	125
Sentinel	139	190	220	235	255	236	236	236	236	236	236	236	236	236	236
Spence growth optic	0	0	0	0	0	72	161	188	197	197	197	197	197	197	197
Taca Taca	0	0	0	0	0	0	0	0	0	61	153	244	237	237	237
Tampakan	0	0	0	0	0	0	0	0	0	104	261	417	451	375	375
Tia Maria	0	0	0	0	0	0	36	60	96	120	120	120	120	120	120
Tenke Phase 3	0	0	0	0	0	0	34	69	69	69	69	69	69	69	69
Tominsky	0	0	0	7	53	74	105	105	105	105	105	105	105	105	105
Toquepala	0	0	40	68	102	102	102	103	103	103	103	103	103	103	103
Toromocho expansic	0	0	0	0	18	35	70	110	123	110	110	110	110	110	110
Udokan	0	0	0	0	0	0	0	39	78	130	130	130	130	130	130
Vizcachitas	0	0	0	0	0	0	0	0	0	5	20	39	69	99	128
Wafi Golpu	0	0	0	0	0	0	0	0	0	48	97	101	154	207	207
Zafranal	0	0	0	0	0	0	0	0	7	30	59	89	89	89	63

Source: Company data, Goldman Sachs Global Investment Research

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Exhibit 83: Top Projects: Copper risked projects summary

Project	Owner 1	Country	Status	Project type	Board approved	Start date	Announced Capex (US$ mn)	GS Capex (US$ mn)	Unit capex (US$ / t) Cu	Unit capex (US$ / t) Cu equ.	NPV @ 8% (incl. sunk) (US$ mn)	NPV @ 8% (2018+) (US$ mn)	Payback (years)	IRR	IRR (2018+)	Cu price required @ risked-IRR	Peak Cu output	LOM avg Cu output	Total cash cost ($/t)	Total cash cost (c/lb)
Aktogay Phase 2	KAZ Minerals	Kazakhstan	Producing	Brownfield	Yes	2021	$1,200	$1,220	**$19,629 /t**	**$18,558 /t**	$1,148	$1,148	5.76	**16.1%**	**16.1%**	**$5,692 /t**	81 ktpa	62 ktpa	$3,649 /t	166 c/lb
Asmara	Sichuan R&BMIDC	Eritrea	Permitting	Greenfield	Yes	2021	$559	$609	**$26,386 /t**	**$12,337 /t**	$668	$668	6.92	**23.1%**	**23.1%**	**$6,932 /t**	28 ktpa	23 ktpa	$1,683 /t	76 c/lb
Aynak	China Metallurgical Gro	Afghanistan	Permitting	Greenfield	No	2024	$4,400	$4,900	**$15,313 /t**	**$15,313 /t**	-$543	-$543	9.66	**5.9%**	**5.9%**	**$12,509 /t**	320 ktpa	320 ktpa	$5,374 /t	244 c/lb
Baimskaya	Baimskaya Mining Comp	Russia	Feasibility	Greenfield	Yes	2024	$5,500	$5,600	**$31,206 /t**	**$23,156 /t**	$2,350	$2,381	6.35	**12.4%**	**12.5%**	**$5,433 /t**	316 ktpa	179 ktpa	$2,114 /t	96 c/lb
Carrapateena	OZ Minerals	Australia	Construction	Greenfield	Yes	2020	$687	$789	**$12,138 /t**	**$10,126 /t**	$1,224	$1,453	4.05	**21.3%**	**31.4%**	**$4,233 /t**	66 ktpa	65 ktpa	$3,628 /t	165 c/lb
Casino	Western Copper & Gold	Canada	Permitting	Greenfield	Yes	2023	$3,345	$3,545	**$41,357 /t**	**$25,365 /t**	-$432	-$399	11.78	**6.7%**	**6.8%**	**$8,069 /t**	181 ktpa	86 ktpa	$4,836 /t	219 c/lb
Chambishi	China Non-Ferrous Met	Zambia	Construction	Greenfield	Yes	2018	$700	$750	**$13,777 /t**	**$10,479 /t**	$228	$408	8.17	**13.4%**	**21.8%**	**$6,800 /t**	59 ktpa	54 ktpa	$4,630 /t	210 c/lb
Chuquicamata U/G	Codelco	Chile	Construction	Brownfield	Yes	2020	$4,000	$4,200	**$12,764 /t**	**$11,222 /t**	$4,203	$6,670	9.04	**13.2%**	**24.6%**	**$7,482 /t**	366 ktpa	329 ktpa	$4,266 /t	193 c/lb
Cobre Panama	First Quantum	Panama	Construction	Greenfield	Yes	2019	$6,300	$6,350	**$20,196 /t**	**$19,164 /t**	$3,505	$8,745	8.59	**10.5%**	**38.7%**	**$8,883 /t**	334 ktpa	314 ktpa	$4,021 /t	182 c/lb
El Pilar	Southern Copper	Mexico	Construction	Greenfield	Yes	2019	$159	$179	**$5,818 /t**	**$5,818 /t**	$409	$409	3.98	**31.6%**	**31.6%**	**$4,765 /t**	33 ktpa	31 ktpa	$4,300 /t	195 c/lb
El Teniente NNM	Codelco	Chile	Construction	Brownfield	Yes	2023	$5,000	$5,100	**$12,530 /t**	**$11,904 /t**	$3,497	$4,720	7.35	**12.6%**	**17.2%**	**$7,460 /t**	434 ktpa	407 ktpa	$4,567 /t	207 c/lb
Florence Copper	Taseko Mines Ltd.	USA	Construction	Greenfield	Yes	2018	$200	$220	**$6,576 /t**	**$6,576 /t**	$885	$905	6.62	**32.1%**	**38.1%**	**$4,870 /t**	39 ktpa	33 ktpa	$3,971 /t	180 c/lb
Grasberg BC	Freeport	Indonesia	Construction	Brownfield	Yes	2016	$6,400	$6,700	**$27,245 /t**	**$20,363 /t**	$5,817	$9,643	6.91	**13.0%**	**35.0%**	**$7,514 /t**	429 ktpa	246 ktpa	$2,346 /t	106 c/lb
Grasberg DMLZ	Freeport	Indonesia	Construction	Brownfield	Yes	2015	$3,100	$3,200	**$25,562 /t**	**$18,411 /t**	$2,998	$5,346	9.68	**13.3%**	**47.7%**	**$7,180 /t**	245 ktpa	125 ktpa	$2,379 /t	108 c/lb
Jiama Phase II	China Gold Internationa	China	Producing	Brownfield	Yes	2017	$716	$736	**$7,050 /t**	**$5,495 /t**	$3,945	$4,664	4.78	**28.9%**	--	**$4,380 /t**	110 ktpa	104 ktpa	$3,234 /t	147 c/lb
Katanga	Glencore	DRC	Construction	Brownfield	Yes	2017	$1,096	$1,159	**$4,237 /t**	**$1,866 /t**	$17,184	$17,567	2.05	**198.0%**	--	**-$1,243 /t**	300 ktpa	274 ktpa	$755 /t	34 c/lb
Lone Star	Freeport	USA	Construction	Greenfield	Yes	2020	$850	$900	**$10,992 /t**	**$10,992 /t**	$632	$683	7.87	**12.8%**	**13.5%**	**$4,870 /t**	89 ktpa	82 ktpa	$4,906 /t	223 c/lb
Mantoverde	Mantos Copper	Chile	Pre-feasibilit	Brownfield	yes	2022	$800	$850	**$11,586 /t**	**$10,863 /t**	$234	$234	7.75	**11.3%**	**11.3%**	**$4,870 /t**	79 ktpa	73 ktpa	$4,880 /t	221 c/lb
Metalkol	ENRC	DRC	Construction	Greenfield	Yes	2019	$833	$900	**$13,514 /t**	**$5,764 /t**	$4,884	$5,608	3.89	**30.1%**	**114.6%**	**$3,820 /t**	70 ktpa	67 ktpa	$701 /t	32 c/lb
Mirador	EcuaCorriente S.A	Ecuador	Construction	Greenfield	Yes	2020	$1,400	$1,500	**$19,026 /t**	**$17,139 /t**	$1,696	$2,067	6.80	**15.5%**	**20.1%**	**$10,303 /t**	81 ktpa	79 ktpa	$3,415 /t	155 c/lb
Mopani	Glencore	Zambia	Construction	Brownfield	Yes	2018	$950	$1,025	**$10,807 /t**	**$10,757 /t**	$2,126	$3,161	5.04	**19.3%**	--	**$5,489 /t**	99 ktpa	95 ktpa	$3,764 /t	171 c/lb
Olympic Dam BFX	BHP Billiton	Australia	Permitting	Brownfield	No	2018	$2,940	$3,040	**$18,842 /t**	**$17,499 /t**	$6,681	$6,681	6.97	**40%**	**39.6%**	**$2,653 /t**	177 ktpa	161 ktpa	$2,612 /t	118 c/lb
Oyu Tolgoi Block Cav	Rio Tinto	Mongolia	Construction	Brownfield	Yes	2020	$5,095	$5,395	**$15,749 /t**	**$13,374 /t**	$4,073	$5,130	7.74	**13.9%**	**17.0%**	**$6,791 /t**	491 ktpa	343 ktpa	$3,891 /t	177 c/lb
Pulang	Chinalco	China	Producing	Greenfield	Yes	2017	$943	$950	**$17,988 /t**	**$16,061 /t**	$174	$1,194	9.68	**9.2%**	--	**$8,221 /t**	55 ktpa	53 ktpa	$4,550 /t	206 c/lb
Pumpkin Hollow	Nevada Copper	USA	Construction	Greenfield	Yes	2020	$1,050	$1,100	**$12,197 /t**	**$10,884 /t**	$1,330	$1,596	7.28	**17.2%**	**25.0%**	**$4,938 /t**	125 ktpa	90 ktpa	$4,415 /t	200 c/lb
Quellaveco	Anglo American	Peru	Construction	Greenfield	Yes	2023	$5,200	$5,400	**$22,258 /t**	**$20,184 /t**	$1,775	$1,901	7.82	**10.8%**	**11.0%**	**$8,750 /t**	313 ktpa	243 ktpa	$4,527 /t	205 c/lb
Santo Domingo	Capstone Mining	Chile	Feasibility	Greenfield	Yes	2023	$1,750	$1,850	**$29,959 /t**	**$17,588 /t**	$1,610	$1,662	5.84	**17.2%**	**17.8%**	**$5,476 /t**	130 ktpa	62 ktpa	$1,251 /t	57 c/lb
Sentinel	First Quantum	Zambia	Producing	Greenfield	Yes	2015	$2,000	$2,000	**$9,086 /t**	**$9,086 /t**	$5,275	$6,929	5.39	**19.7%**	--	**$5,239 /t**	255 ktpa	220 ktpa	$4,126 /t	187 c/lb
Spence growth option	BHP Billiton	Chile	Construction	Brownfield	Yes	2021	$2,460	$2,510	**$14,492 /t**	**$12,933 /t**	$3,851	$3,851	5.32	**18.8%**	**18.8%**	**$5,697 /t**	197 ktpa	173 ktpa	$3,652 /t	166 c/lb
Tia Maria	Southern Copper	Peru	Permitting	Greenfield	Yes	2022	$1,400	$1,500	**$13,360 /t**	**$13,360 /t**	$1,179	$1,657	7.12	**12.6%**	**18.8%**	**$7,632 /t**	120 ktpa	112 ktpa	$4,041 /t	183 c/lb
Tominsky	Russian Copper Compar	Russia	Construction	Greenfield	Yes	2018	$1,183	$1,283	**$16,042 /t**	**$16,042 /t**	$2,058	$2,375	nm	**18.8%**	**27.9%**	**$4,846 /t**	105 ktpa	80 ktpa	$3,479 /t	158 c/lb
Toquepala	Southern Copper	Peru	Construction	Brownfield	Yes	2018	$1,300	$1,310	**$13,091 /t**	**$12,121 /t**	$2,343	$3,318	6.00	**16.2%**	**67.2%**	**$6,325 /t**	103 ktpa	100 ktpa	$3,829 /t	174 c/lb
Toromocho expansior	Chinalco	Peru	Construction	Brownfield	Yes	2020	$1,360	$1,400	**$13,512 /t**	**$11,601 /t**	$2,634	$2,738	5.94	**21.2%**	**23.5%**	**$5,130 /t**	123 ktpa	104 ktpa	$3,494 /t	158 c/lb
Total - Risked	-	-	-	-	-	-	$67,536	$70,230	**$16,301 /t**	**$13,071 /t**	$84,693	$109,833	7.99	**16.3%**	**32.7%**	**$6,799 /t**	5,455 ktpa	4,308 ktpa	$510 /t	23 c/lb

Source: Company data, Goldman Sachs Global Investment Research

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Exhibit 84: Top Projects: Copper unapproved projects production details to 2030E

Project	Owner 1	Country	Status	Project type	Board approved	Start date	Announced Capex (US$ mn)	GS Capex (US$ mn)	Unit capex (US$ / t) Cu	Unit capex (US$ / t) Cu equ.	NPV @ 8% (incl. sunk) (US$ mn)	NPV @ 8% (2018+) (US$ mn)	Payback (years)	IRR	IRR (2018+)	Cu price required @ risked IRR	Peak Cu output	LOM avg Cu output	Total cash cost ($/t)	Total cash cost (c/lb)	EBITDA margin
Ajax	KGHM	Canada	Permitting	Greenfield	No	2021	$900	$1,000	$18,868 /t	$12,953 /t	$336	$370	8.36	14.0%	15.3%	$6,249 /t	69 ktpa	53 ktpa	$4,327 /t	196 c/lb	35%
Agua Rica	Yamana Gold	Argentina	Feasibility	Greenfield	No	2023	$2,200	$2,200	$13,750 /t	$10,043 /t	$2,139	$2,139	5.32	19.4%	19.4%	$7,854 /t	200 ktpa	160 ktpa	$4,198 /t	190 c/lb	44%
Andina Phase 2	Codelco	Chile	Feasibility	Brownfield	No	2024	$6,800	$7,600	$22,157 /t	$20,644 /t	$319	$319	9.44	8.6%	8.6%	$8,796 /t	350 ktpa	343 ktpa	$4,498 /t	204 c/lb	46%
Ann Mason	Mason Resources Corp	USA	Scoping	Greenfield	No	2023	$1,351	$1,451	$13,191 /t	$12,284 /t	$821	$821	6.74	15.1%	15.1%	$5,702 /t	121 ktpa	110 ktpa	$4,629 /t	210 c/lb	42%
Aynak	China Metallurgical Group Corp.	Afghanistan	Permitting	Greenfield	No	2024	$4,400	$4,900	$15,313 /t	$15,313 /t	-$543	-$543	9.66	5.9%	5.9%	$12,509 /t	320 ktpa	320 ktpa	$5,374 /t	244 c/lb	36%
Canariaco Norte	Candente Copper Corp	Peru	Feasibility	Greenfield	No	2023	$1,565	$1,700	$14,286 /t	$13,153 /t	$1,939	$1,939	4.32	21.1%	21.1%	$5,259 /t	166 ktpa	119 ktpa	$3,760 /t	171 c/lb	58%
Centinela DMC	Antofagasta	Chile	Feasibility	Brownfield	No	2022	$2,700	$2,970	$24,829 /t	$18,425 /t	$726	$726	9.11	10.1%	10.1%	$9,122 /t	130 ktpa	120 ktpa	$4,065 /t	184 c/lb	43%
Cerro Casale	Barrick Gold	Chile	Permitting	Greenfield	No	2025	$6,000	$6,000	$57,313 /t	$25,032 /t	$989	$989	8.66	10.1%	10.1%	$9,964 /t	110 ktpa	105 ktpa	$4,438 /t	201 c/lb	66%
Collahuasi GL4	Glencore	Chile	Pre-feasibility	Brownfield	No	2025	$4,000	$4,350	$14,921 /t	$14,041 /t	$2,888	$2,888	6.53	15.2%	15.2%	$6,651 /t	300 ktpa	292 ktpa	$4,742 /t	215 c/lb	45%
Cotabambas	Panoro Minerals Ltd.	Peru	Pre-feasibility	Greenfield	No	2023	$1,533	$1,633	$24,123 /t	$17,347 /t	$218	$218	9.41	9.7%	9.7%	$8,210 /t	72 ktpa	68 ktpa	$4,144 /t	188 c/lb	39%
Cristalino	Vale	Brazil	Pre-feasibility	Greenfield	No	2025	$1,500	$1,550	$13,129 /t	$12,183 /t	$1,686	$1,686	4.91	17.8%	17.8%	$8,672 /t	121 ktpa	118 ktpa	$4,285 /t	194 c/lb	51%
Cuajone	Southern Copper	Peru	Feasibility	Brownfield	No	2024	$500	$500	$10,200 /t	$9,809 /t	$1,049	$1,049	3.73	24.9%	24.9%	$7,920 /t	50 ktpa	49 ktpa	$4,919 /t	223 c/lb	53%
El Abra mill	Freeport	Chile	Pre-feasibility	Brownfield	No	2027	$5,074	$5,274	$15,502 /t	$15,502 /t	-$2,230	-$2,230	6.00	-8.9%	-8.9%	$4,870 /t	347 ktpa	340 ktpa	$7,515 /t	341 c/lb	0%
El Arco	Southern Copper	Mexico	Scoping	Greenfield	No	2026	$3,000	$3,200	$18,955 /t	$16,936 /t	$890	$890	8.05	11.1%	11.1%	$4,870 /t	190 ktpa	169 ktpa	$8,333 /t	378 c/lb	0%
El Pachón	Glencore	Argentina	Pre-feasibility	Greenfield	No	2026	$4,100	$4,500	$16,243 /t	$15,878 /t	$1,699	$1,699	6.70	13.0%	13.0%	$10,029 /t	402 ktpa	277 ktpa	$4,703 /t	213 c/lb	0%
Frieda River	Guangdong Rising H.K. (Holdings)	PNG	Permitting	Greenfield	No	2027	$3,600	$3,800	$22,782 /t	$17,861 /t	$2,361	$2,361	5.01	18.8%	18.8%	$8,499 /t	290 ktpa	167 ktpa	$3,070 /t	139 c/lb	0%
Galore Creek	Teck Resources	Canada	Pre-feasibility	Greenfield	No	2029	$5,160	$5,460	$38,551 /t	$29,614 /t	-$169	-$169	8.94	7.5%	7.5%	$4,870 /t	158 ktpa	142 ktpa	$4,299 /t	195 c/lb	0%
Galeno	China Minmetals	Peru	Feasibility	Greenfield	No	2026	$2,500	$2,700	$17,161 /t	$14,288 /t	$1,252	$1,252	6.24	15.4%	15.4%	$6,471 /t	164 ktpa	157 ktpa	$3,876 /t	176 c/lb	0%
Haquira	First Quantum	Peru	Scoping	Greenfield	No	2025	$2,058	$2,500	$16,882 /t	$15,275 /t	$1,211	$1,211	6.92	13.9%	13.9%	$6,906 /t	230 ktpa	148 ktpa	$4,741 /t	215 c/lb	46%
Harper Creek	Yellowhead Mining Inc.	Canada	Permitting	Greenfield	No	2025	$799	$960	$17,878 /t	$16,767 /t	$613	$613	6.27	15.6%	15.6%	$5,329 /t	71 ktpa	54 ktpa	$4,786 /t	217 c/lb	48%
Inca de Oro	Guangdong Rising H.K. (Holdings)	Chile	Feasibility	Greenfield	No	2026	$800	$1,000	$21,914 /t	$17,903 /t	$220	$220	7.65	10.9%	10.9%	$7,835 /t	59 ktpa	46 ktpa	$4,260 /t	193 c/lb	0%
Josemaria	NGEx Resources	Argentina	Pre-feasibility	Greenfield	No	2025	$2,000	$2,000	$15,385 /t	$11,359 /t	$318	$318	5.43	11.3%	11.3%	$10,971 /t	164 ktpa	130 ktpa	$4,763 /t	216 c/lb	46%
Kamoa-Kakula	Ivanhoe Mines	DRC	Pre-feasibility	Greenfield	No	2024	$2,400	$2,500	$5,152 /t	$5,152 /t	$10,370	$10,370	6.27	28.8%	28.8%	$5,650 /t	623 ktpa	485 ktpa	$3,989 /t	181 c/lb	62%
Kansanshi Sulphide	First Quantum	Zambia	Permitting	Brownfield	No	2021	$565	$585	$9,429 /t	$8,836 /t	$553	$553	4.88	20.8%	20.8%	$5,689 /t	65 ktpa	62 ktpa	$4,294 /t	195 c/lb	49%
Kerr-Sulphurets-Mitch	Seabridge Gold	Canada	Pre-feasibility	Greenfield	No	2025	$5,500	$5,800	$41,312 /t	$18,852 /t	$496	$511	6.90	9.1%	9.1%	$5,967 /t	175 ktpa	140 ktpa	$2,497 /t	113 c/lb	57%
King King	St. Augustine Copper&Gold	Philippines	Permitting	Greenfield	No	2025	$2,042	$2,300	$37,597 /t	$22,900 /t	$683	$683	7.30	12.0%	12.0%	$12,706 /t	94 ktpa	61 ktpa	$3,728 /t	169 c/lb	51%
Koksay	KAZ Minerals	Kazakhstan	Pre-feasibility	Greenfield	No	2025	$1,500	$1,700	$22,431 /t	$20,411 /t	$413	$413	10.60	11.6%	11.6%	$6,686 /t	80 ktpa	76 ktpa	$5,193 /t	236 c/lb	44%
La Granja	Rio Tinto	Peru	Pre-feasibility	Greenfield	No	2028	$7,500	$7,500	$18,195 /t	$18,195 /t	$1,612	$1,612	10.10	11.9%	11.9%	$7,431 /t	501 ktpa	412 ktpa	$4,846 /t	220 c/lb	0%
Los Azules	McEwen Mining	Argentina	Pre-feasibility	Greenfield	No	2025	$2,641	$2,691	$16,054 /t	$14,795 /t	$2,104	$2,104	5.29	18.6%	18.6%	$4,870 /t	230 ktpa	168 ktpa	$4,278 /t	194 c/lb	46%
Los Calatos	CD Capital	Peru	Scoping	Greenfield	No	2023	$655	$705	$18,598 /t	$16,345 /t	$462	$462	7.16	14.8%	14.8%	$6,848 /t	38 ktpa	38 ktpa	$4,095 /t	186 c/lb	50%
Los Chancas	Southern Copper	Peru	Scoping	Greenfield	No	2024	$2,800	$2,900	$25,679 /t	$20,729 /t	$543	$543	10.31	10.0%	10.0%	$4,870 /t	126 ktpa	113 ktpa	$4,839 /t	219 c/lb	47%
Los Helados	NGEx Resources	Chile	Pre-feasibility	Greenfield	No	2031	$1,225	$1,325	$8,520 /t	$7,025 /t	$1,727	$1,727	4.38	16.3%	16.3%	$5,817 /t	200 ktpa	156 ktpa	$4,911 /t	223 c/lb	0%
Los Pelambres 205	Antofagasta	Chile	Feasibility	Brownfield	No	2020	$1,800	$1,950	$25,023 /t	$23,847 /t	$27	$118	10.28	8.3%	9.1%	$8,246 /t	99 ktpa	78 ktpa	$4,281 /t	194 c/lb	47%
Michiquillay	Southern Copper	Peru	Scoping	Greenfield	No	2023	$2,500	$2,700	$12,893 /t	$11,314 /t	$569	$631	6.28	16.0%	16.0%	$6,863 /t	223 ktpa	209 ktpa	$1,516 /t	69 c/lb	43%
Mina Justa	Minsur	Peru	Feasibility	Greenfield	No	2021	$1,400	$1,500	$19,130 /t	$19,130 /t	$336	$336	6.64	11.5%	11.5%	$7,438 /t	110 ktpa	78 ktpa	$3,923 /t	178 c/lb	60%
Nueva Union	Gold Corp.	Chile	Feasibility	Greenfield	No	2022	$3,500	$3,800	$21,881 /t	$16,593 /t	$3,458	$3,767	6.23	15.9%	17.7%	$6,105 /t	240 ktpa	174 ktpa	$3,599 /t	163 c/lb	51%
New Prosperity	Taseko Mines Limited	Canada	Pre-feasibility	Greenfield	No	2025	$814	$1,200	$23,509 /t	$13,274 /t	$995	$999	5.75	18.5%	18.6%	$3,557 /t	53 ktpa	51 ktpa	$3,244 /t	147 c/lb	45%
Pebble	Northern Dynasty	USA	Pre-feasibility	Greenfield	No	2027	$4,690	$5,800	$19,265 /t	$13,089 /t	$4,306	$4,306	9.74	13.1%	13.1%	$4,604 /t	350 ktpa	301 ktpa	$2,984 /t	135 c/lb	0%
Quebrada Blanca II	Teck Resources	Chile	Permitting	Brownfield	No	2022	$4,714	$4,900	$18,543 /t	$17,314 /t	$3,387	$3,540	7.34	13.9%	14.4%	$7,083 /t	320 ktpa	264 ktpa	$4,349 /t	197 c/lb	51%
Radomiro Tomic	Codelco	Chile	Feasibility	Brownfield	No	2024	$5,400	$5,900	$17,201 /t	$16,714 /t	$3,654	$3,654	8.14	15.4%	15.4%	$6,553 /t	394 ktpa	343 ktpa	$4,323 /t	196 c/lb	46%
Resolution	Rio Tinto	USA	Scoping	Greenfield	No	2027	$6,000	$6,500	$13,040 /t	$12,279 /t	$4,197	$4,309	5.35	14.6%	15.0%	$5,500 /t	600 ktpa	498 ktpa	$4,509 /t	205 c/lb	45%
Rosemont	Hudbay Minerals	USA	Permitting	Greenfield	No	2022	$1,921	$2,021	$16,136 /t	$14,058 /t	$685	$685	6.41	13.4%	13.4%	$6,005 /t	141 ktpa	125 ktpa	$4,080 /t	185 c/lb	49%
Salobo 3	Vale	Brazil	Pre-feasibility	Brownfield	No	2022	$1,000	$1,100	$18,343 /t	$12,272 /t	$1,817	$1,817	5.14	19.5%	19.5%	$4,870 /t	65 ktpa	60 ktpa	$2,079 /t	94 c/lb	63%
San Nicolas	Teck Resources	Mexico	Pre-feasibility	Greenfield	No	2025	$650	$750	$14,621 /t	$8,641 /t	$1,140	$1,140	3.79	24.4%	24.4%	$4,870 /t	54 ktpa	51 ktpa	$2,685 /t	122 c/lb	61%
Schaft Creek	Teck Resources	Canada	Feasibility	Greenfield	No	2024	$3,257	$3,700	$34,071 /t	$23,834 /t	$7	$8	10.43	8.0%	8.0%	$7,428 /t	125 ktpa	109 ktpa	$5,252 /t	238 c/lb	44%
Taca Taca	First Quantum	Argentina	Scoping	Greenfield	No	2025	$3,431	$3,900	$17,192 /t	$15,056 /t	$2,456	$2,456	6.84	15.8%	15.8%	$9,437 /t	244 ktpa	227 ktpa	$3,957 /t	179 c/lb	59%
Tampakan	Indophil Resources	Philippines	Feasibility	Greenfield	No	2025	$5,900	$6,100	$16,920 /t	$14,004 /t	$3,406	$3,406	5.81	16.2%	16.2%	$9,007 /t	451 ktpa	361 ktpa	$4,498 /t	204 c/lb	52%
Tenke Phase 3	China Molybdenum	DRC	Feasibility	Brownfield	No	2022	$500	$600	$9,045 /t	$5,214 /t	$1,443	$1,443	2.51	42.8%	42.8%	$4,117 /t	69 ktpa	66 ktpa	$2,829 /t	128 c/lb	61%
Udokan	Baikal Mining Company	Russia	Construction	Greenfield	No	2023	$2,450	$2,695	$21,117 /t	$20,029 /t	$1,141	$1,422	8.13	11.4%	12.8%	$6,799 /t	130 ktpa	128 ktpa	$4,153 /t	188 c/lb	54%
Wafi Golpu	Harmony Gold	PNG	Feasibility	Greenfield	No	2025	$2,800	$3,000	$15,744 /t	$12,732 /t	$3,388	$3,388	5.98	18.2%	18.2%	$9,171 /t	207 ktpa	191 ktpa	$1,894 /t	86 c/lb	56%
Zafranal	Teck Resources	Peru	Pre-feasibility	Greenfield	No	2024	$1,157	$1,270	$32,523 /t	$29,983 /t	-$93	-$93	8.72	6.9%	6.9%	$9,148 /t	89 ktpa	39 ktpa	$4,962 /t	225 c/lb	38%
Total - Unapproved	-	-	-	-	-	-	$149,092	$160,680	$18,155 /t	$15,409 /t	$79,282	$80,283	6.04	13.8%	13.9%	$7,307 /t	10,532 ktpa	8,851 ktpa	$97 /t	4 c/lb	50%

Source: Company data, Goldman Sachs Global Investment Research

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Modeling each project – how we do it?

Below is a summary of how we model each project:

- We model the production profile of each project using the most recent information available. Where applicable, we include specific company guidance on production profiles and otherwise model output according to average LOM production information. Unless otherwise indicated by company guidance, we use reserve/resource details to determine the total mine life of each project.
- Based on disclosed grades, we include all by-product production to compute the Cu equivalent price requirements.
- Revenues of each project are determined using our GS commodities pricing assumptions for 2017-2020E, and we add 3% of price inflation for each year thereafter.
- Computing costs, we assume cost deflation of 1% over the next four years and inflation of c.3% thereafter. Unless otherwise specified by companies, we use a 50% split between costs in local currency and USD. Where applicable, we apply our GS forecasts for currencies over 2017-2020E – alternatively rates are set at spot.
- We add estimates for project D&A as well as royalties & taxes depending on the overall life of mine and jurisdiction of each project.
- We follow company guidance on initial capex assumptions and escalate growth capex estimates based on our assumptions. In term of sustaining capex, we model this as a percentage of revenue across all projects (we adjust this percentage where company guidance is available and the overall level of sustaining capex is significantly different from our assumption).
- To discount the cash flows computed, we apply a discount rate of across all projects; note that NPV 2017+ numbers exclude any cash flows incurred before 2017.
- Finally, to compute the required copper price for each project we set a required IRR based on the jurisdiction of each project.

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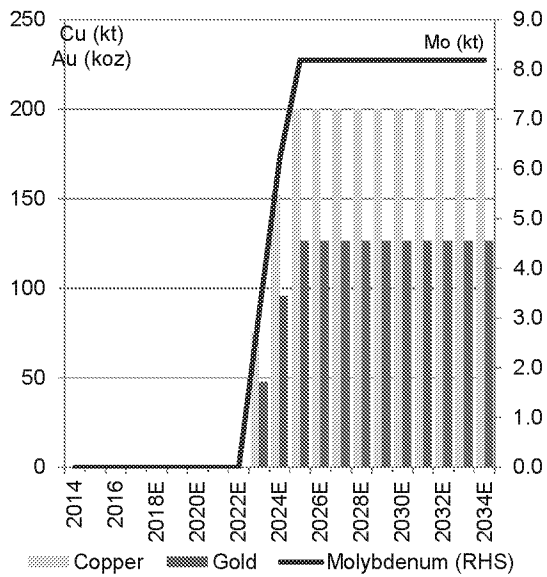
Top Projects: Copper summaries

Exhibit 85: Agua Rica

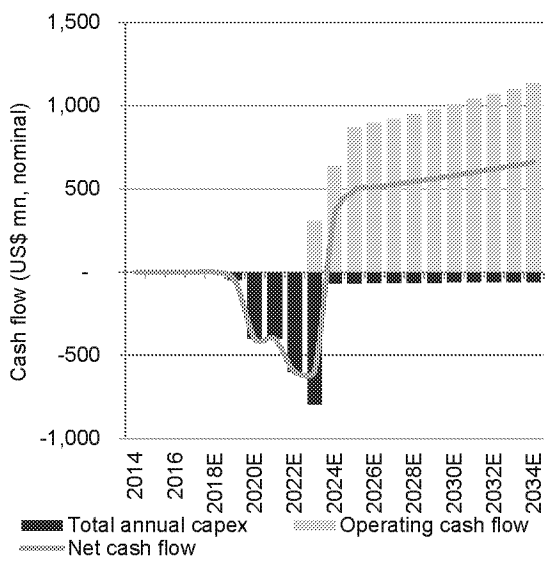
Agua Rica	Argentina	160 ktpa	US$2,200 mn	19% IRR

The Agua Rica project is located approximately 35 km from the Alumbrera mine in Argentina. The project is owned by Yamana Gold and is currently in the feasibility stage. The company is currently in the process of evaluating 2 options: a) a large-scale open pit scenario which contemplates integration with the neighbouring Alumbera mines (Yamana owns a 12.5% stake in the company). Under this scenario, the projected mine life could be 22 years with annual production levels of 200Kt of copper, 109Koz of gold, 1.6Moz of silver and 6Kt of Molybdenum; 2) The smaller stand alone scenario includes an open pit mine and underground mine and a combined open pit and underground mine. The underground scenario employs the application of sub-level caving. The projected mine life is 28 years with the annual production being 67Kt of copper, 43Koz of gold, 2Kt of Molybdenum and 363koz of silver. The feasibility study completed in 2016 for the open pit scenario and as such this scenario is technically advanced and development ready. Technical studies continue to advance the lower throughput standalone scenarios towards completion of a preliminary economic assessment later this year (2018) and a pre-feasibility study in 2019. Yamana continues to evaluate the alternative options and we currently model scenario 1 as our base case with slight capex escalations and commissioning in 2023.

Production profile



Cash flow chart



Economics summary

Internal rate of return	19%
NPV (including sunk costs)	US$2,139
NPV (2018+)	US$2,139
Cu required @ 25%	US$7,854 /t
Capex	US$2,200 mn
Capex / t Cu production	US$13,750
Capex / t Cu equ. production	US$10,043
Project type	Greenfield
Project status	Feasibility
Ore reserves / resources	909 mt
Copper grade	0.49% Cu
Contained copper	4,454 kt
Commissioning	2023
Peak copper production	200 ktpa
Average LOM production	160 ktpa
Life of mine	22
Gross unit cost	US$4,405 /t
Net unit cost (C1)	US$2,667 /t

Source: Company data, Goldman Sachs Global Investment Research

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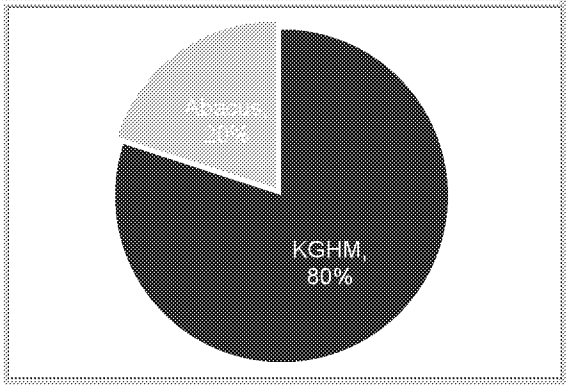
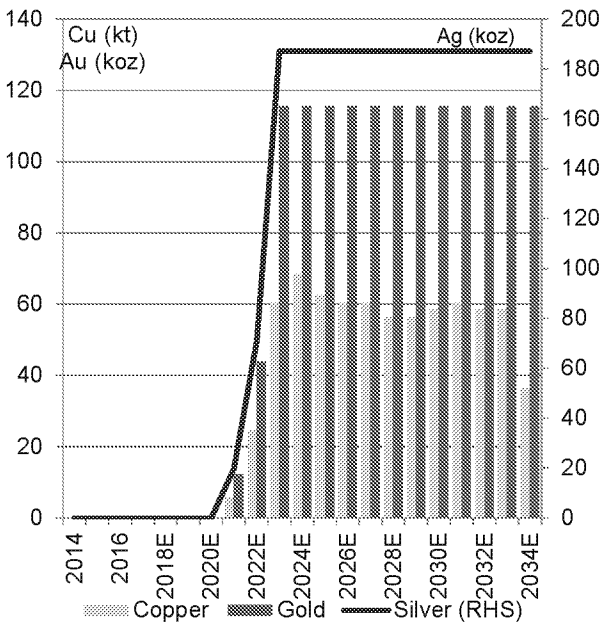
Exhibit 86: Ajax

Ajax	Canada	53 ktpa	US$1,000 mn	14% IRR

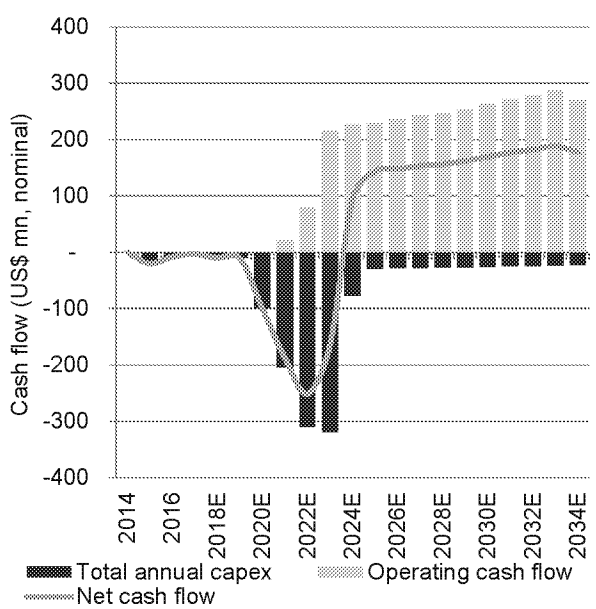
The Ajax project is an open-pit copper-gold mine located in British Columbia, Canada. It is a JV between KGHM (80% stake) and Abacus Mining (20% stake). The mine is expected to have a LOM of 18 years with average production of 53 ktpa of copper in concentrate and 125 koz of gold with total guided capex of US$1.3 bn (we adjust for inflation). The project is currently in the permitting phase. In December 2017, the Ministers of Environment and of Energy, Mines and Petroleum Resources of BC decided against the granting of an environmental assessment certificate for the Ajax project. In their opinion the project would have significant adverse effects and forwarded the project to the Canadian Ministry of Fisheries, Oceans and the Ministry of Natural Resources. In June 2018 the Canadian government rejected the proposed Ajax mine following the earlier decision by British Columbia to withhold the environmental certificate. The respective ministries will review the matter, while the federal government (comprised of various federal ministries) will make the final decision as to whether the project's adverse effects are sufficiently justified to allow the project to go ahead despite the negative impact. We expect construction of the mine to start in 2020 with first production no earlier than 2024.



Production profile



Cash flow chart



Economics summary

Internal rate of return	14%
NPV (including sunk costs)	US$336
NPV (2018+)	US$370
Cu required @ 10%	US$6,249 /t
Capex	US$1,000 mn
Capex / t Cu production	US$18,868
Capex / t Cu equ. production	US$12,953
Project type	Greenfield
Project status	Permitting
Ore reserves / resources	426 mt
Copper grade	0.29% Cu
Contained copper	1,235 kt
Commissioning	2021
Peak copper production	69 ktpa
Average LOM production	53 ktpa
Life of mine	18
Gross unit cost	US$5,495 /t
Net unit cost (C1)	US$3,206 /t

Source: Company data, Goldman Sachs Global Investment Research

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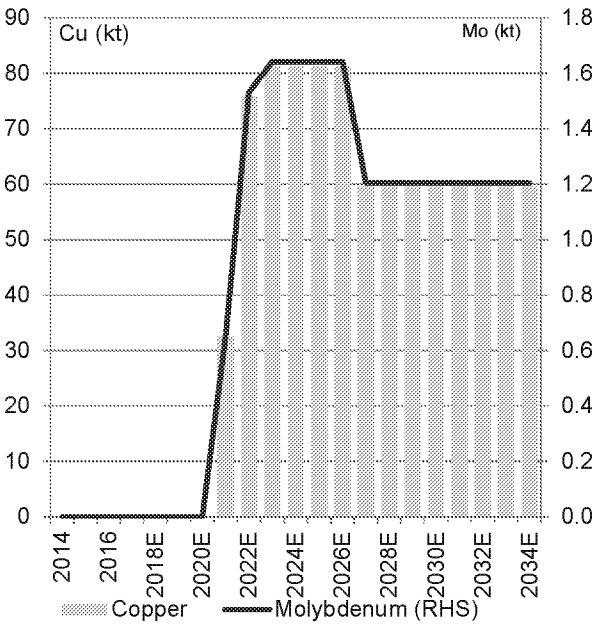
Exhibit 87: Aktogay Phase 2

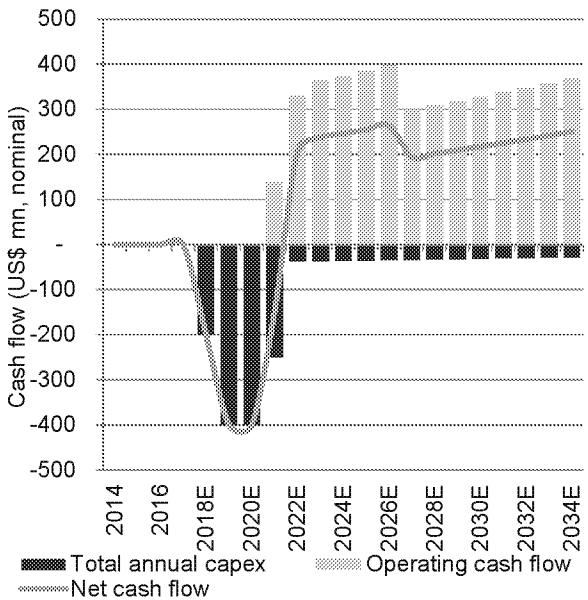
Aktogay Phase 2	Kazakhstan	62 ktpa	US$1,220 mn	16% IRR

The Aktogay mine is located in eastern Kazakhstan and is solely owned by KAZ Minerals. With the mine having reached approximately the steady state production of c.100kt, the company announced in Dec. 2017 to go ahead with the US$1.2bn expansion of the project. Key details: a) Second concentrator will double the current sulphide ore processing capacity from 25 to 50mtpa; b) Of the US$1.2bn capex, US$200mn will be spent in 2018 with the remaining being spent in 2019/20; c) The new concentrator starts to ramp up in 2H21; d) Copper production from sulphide ore at Aktogay will increase by 80Kt to c. 170Ktpa from 2022-27 - supported by higher grades. However, the increase will fall to 60Kt post 2027 as grades come down; e) The net cash cost guidance to 2027 following the expansion is unchanged at 100-120 USc/lb; f) Due to the expansion, the mine life has been reduced from 50 years to 28 years; g) Sustaining capex is expected to increase from US$30-40mn to US$50-US$60mn from 2022 onwards.

Production profile



Cash flow chart



Economics summary

Internal rate of return	16%
NPV (including sunk costs)	US$1,148
NPV (2018+)	US$1,148
Cu required @ 12%	US$5,692 /t
Capex	US$1,220 mn
Capex / t Cu production	US$19,629
Capex / t Cu equ. production	US$18,558
Project type	Brownfield
Project status	Producing
Ore reserves / resources	1,469 mt
Copper grade	0.60% Cu
Contained copper	8,813 kt
Commissioning	2021
Peak copper production	81 ktpa
Average LOM production	62 ktpa
Life of mine	28
Gross unit cost	US$2,725 /t
Net unit cost (C1)	US$2,344 /t

Source: Company data, Goldman Sachs Global Investment Research

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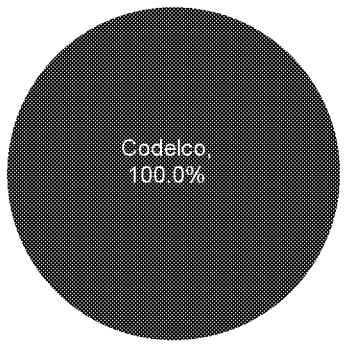
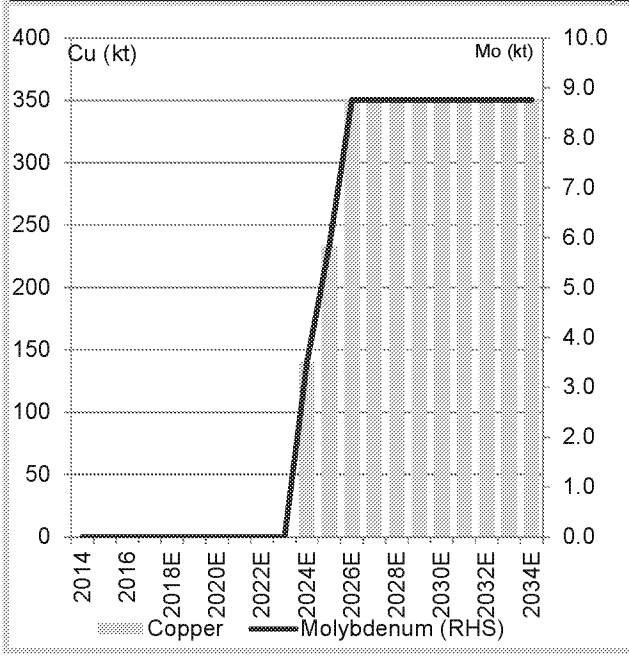
Exhibit 88: Andina Phase 2

Andina Phase 2	Chile	343 ktpa	US$7,600 mn	9% IRR

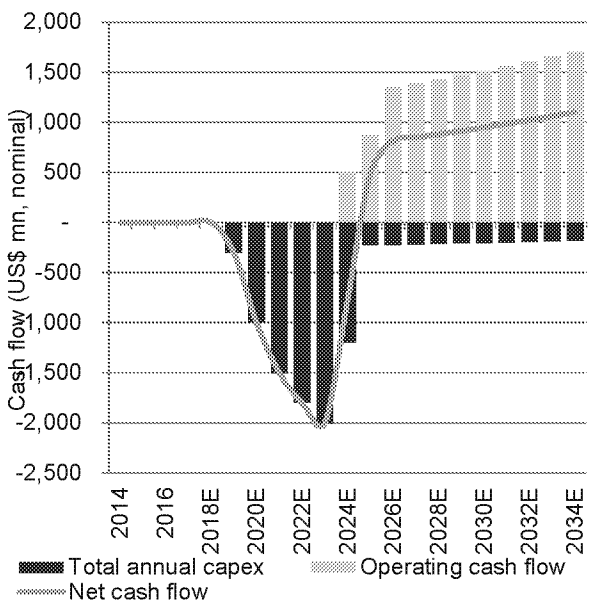
The Andina mine is owned by Codelco and located at Saladillo, 50 km northeast of Santiago in Chile. After the completion of phase one of the project, which took processing capacity from 72 ktpd to an average 94 ktpd, resulting in an increase of 70 ktpa of copper, the company is planning to embark on phase two of the project. The second phase was set to ramp up daily processing capacity by 150 kt to a total of 244 kt. The mine is expected to have an extended LOM given the 47 Mt copper resource base of the deposit. In September 2015, Codelco decided to suspend the project in its current form, seeking to create an alternative project that required less investment, optimises water usage and reduces its environmental impact. The company announced earlier this year that it was planning to alter its Andina mine as a result of glaciers. The project will take approx. 3 years to carry out and remains reliant upon the improvement of an environmental impact study. Whilst there has been limited newsflow on the expansion programme, given the US$250mn investment, we believe that the project is likely to be delayed. We expect the construction of the project to start in 2019 with first production in 2024.



Production profile



Cash flow chart



Economics summary

Internal rate of return	9%
NPV (including sunk costs)	US$319
NPV (2018+)	US$319
Cu required @ 15%	US$8,796 /t
Capex	US$7,600 mn
Capex / t Cu production	US$22,157
Capex / t Cu equ. production	US$20,644
Project type	Brownfield
Project status	Feasibility
Ore reserves / resources	965 mt
Copper grade	0.75% Cu
Contained copper	7,238 kt
Commissioning	2024
Peak copper production	350 ktpa
Average LOM production	343 ktpa
Life of mine	19
Gross unit cost	US$3,633 /t
Net unit cost (C1)	US$3,161 /t

Source: Company data, Goldman Sachs Global Investment Research

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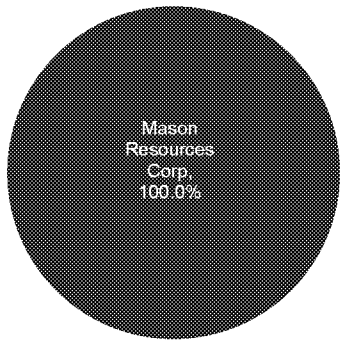
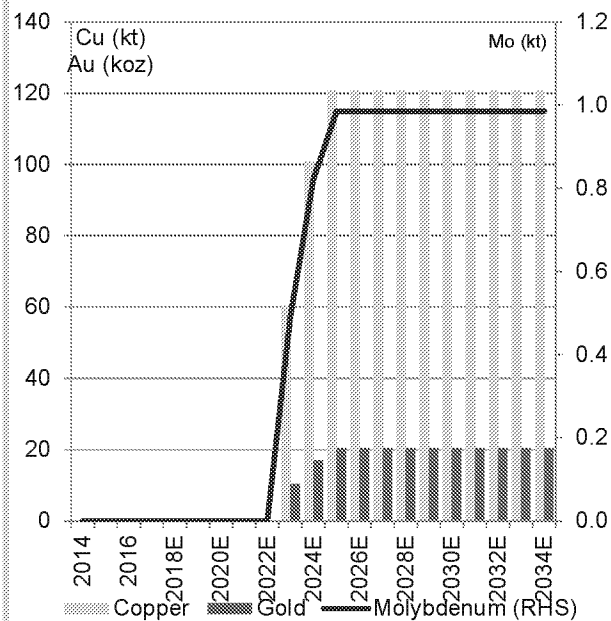
Exhibit 89: Ann Mason

Ann Mason	USA	110 ktpa	US$1,451 mn	15% IRR

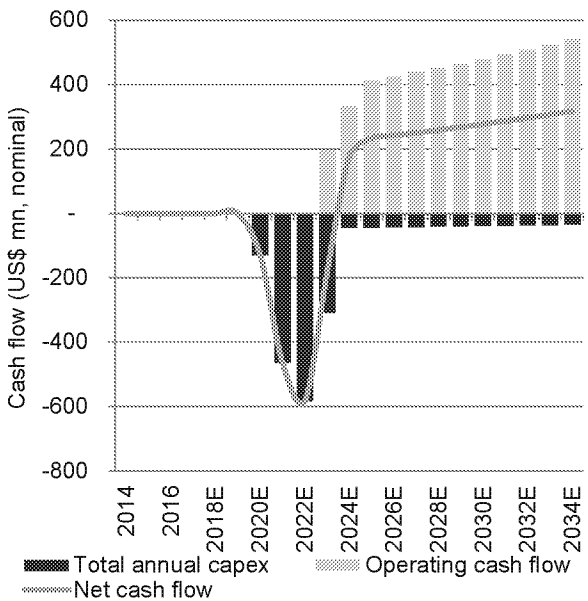
Ann Mason, located in the state of Nevada in the US, is a copper-molybdenum project with two known mineral deposits. Mason Resouces Corp. is the sole owner of the project. An updated Preliminary Economic Assessment report was submitted in May 2017, which envisions an open pit and conventional sulphide flotation milling operation with throughput of 120 ktpd and a 21-year LOM. The average annual production from the mine is expected to be c.110 ktpa of copper, c.1 ktpa of molybdenum, 20 kozpa of gold and 480 kozpa of silver. As per the latest resource statement, the mine has total resources of 1,400 mt with an average copper grade of 0.32%. Entree Gold which used to own the project recently spun-out its two US operations - Ann Mason and Lordsburg - to focus on its other investments. The company is curently evaluating options for its Ann Mason project which may include optimising certain aspects of the 2017 PEA, commencing a pre-feasibility study. Capex spend guidance for 2018 is <US$1mn. Given the various permitting processes and various stages that the project still has to go through, we do not expect production from the mine before 2023 and add inflation expectations to the guided capex while awaiting further details from the company.



Production profile



Cash flow chart



Economics summary

Internal rate of return	15%
NPV (including sunk costs)	US$821
NPV (2018+)	US$821
Cu required @ 10%	US$5,702 /t
Capex	US$1,451 mn
Capex / t Cu production	US$13,191
Capex / t Cu equ. production	US$12,284
Project type	Greenfield
Project status	Scoping
Ore reserves / resources	1,400 mt
Copper grade	0.32% Cu
Contained copper	4,480 kt
Commissioning	2023
Peak copper production	121 ktpa
Average LOM production	110 ktpa
Life of mine	21
Gross unit cost	US$3,860 /t
Net unit cost (C1)	US$3,418 /t

Source: Company data, Goldman Sachs Global Investment Research

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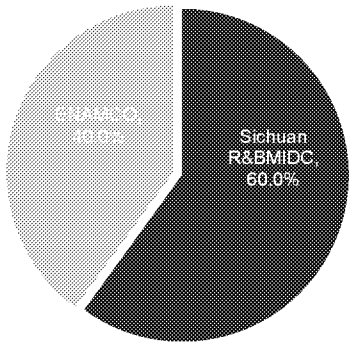
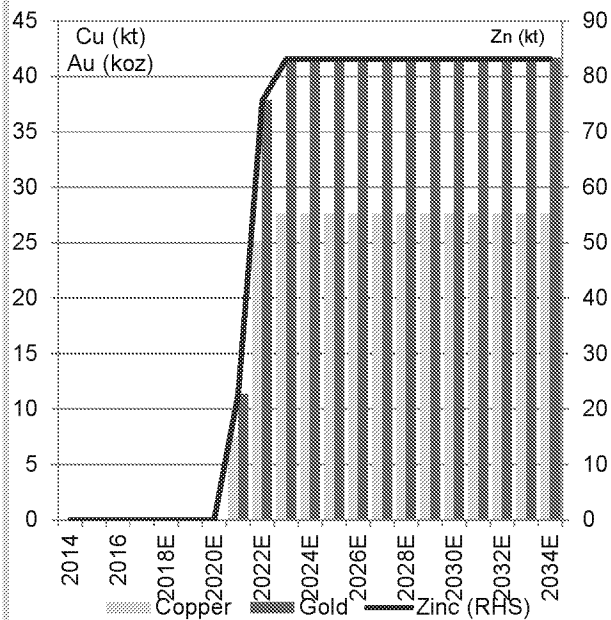
Exhibit 90: Asmara

Asmara	Eritrea	23 ktpa	US$609 mn	23% IRR

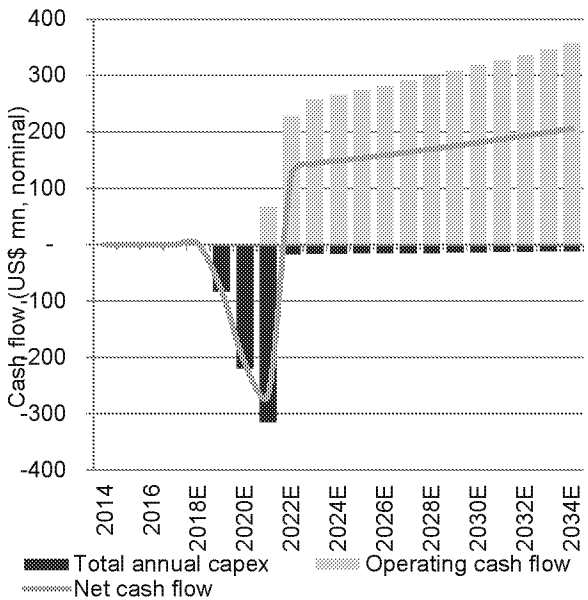
Asmara is a copper-gold-zinc mine located in Eritrea. Sichuan Road and Bridge Mining Investment Development Corp. acquired a 60% stake in the project from Sunridge Gold Corp in April 2016. The Eritrean government, through Eritrean National Mining Corporation (ENAMCO), holds the remaining 40% stake. The feasibility study of the project was submitted in in May 2013 and the Social and Environmental Impact Assessment Report in April 2014. The Asmara project operators obtained the mining license in October 2015. The project has a three-phase outline and on achieving full production is expected to produce 29 kt of copper, 42 koz of gold, 83 kt of zinc and 1 moz of silver annually. The life of the mine is 17 years. The total guided capex as per the feasibility study for all the phases of the project is US$560 mn (life of mine capex for Phases 1, 2 and 3 (gold, copper and zinc) are estimated at US$76.3mn, $428.2mn and $54.4mn); we add slight inflation expectations to this number. Given the change in ownership of the project and very limited newsflow, we expect a slower start to the project with first capex in 2019 and first production in 2021 - we will not be surprised should the project be further delayed.



Production profile



Cash flow chart



Economics summary

Internal rate of return	23%
NPV (including sunk costs)	US$668
NPV (2018+)	US$668
Cu required @ 25%	US$6,932 /t
Capex	US$609 mn
Capex / t Cu production	US$26,386
Capex / t Cu equ. production	US$12,337
Project type	Greenfield
Project status	Permitting
Ore reserves / resources	57 mt
Copper grade	0.81% Cu
Contained copper	458 kt
Commissioning	2021
Peak copper production	28 ktpa
Average LOM production	23 ktpa
Life of mine	17
Gross unit cost	US$8,402 /t
Net unit cost (C1)	-US$1,854 /t

Source: Company data, Goldman Sachs Global Investment Research

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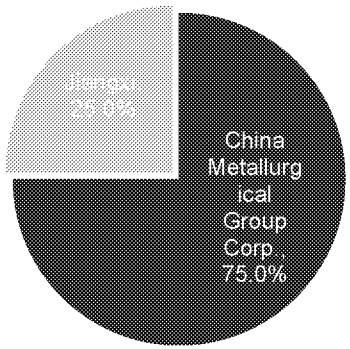
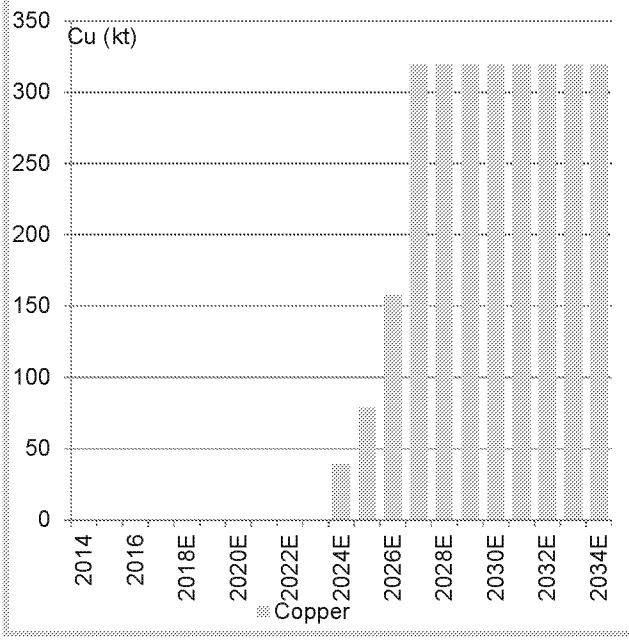
Exhibit 91: Aynak

Aynak	Afghanistan	320 ktpa	US$4,900 mn	6% IRR

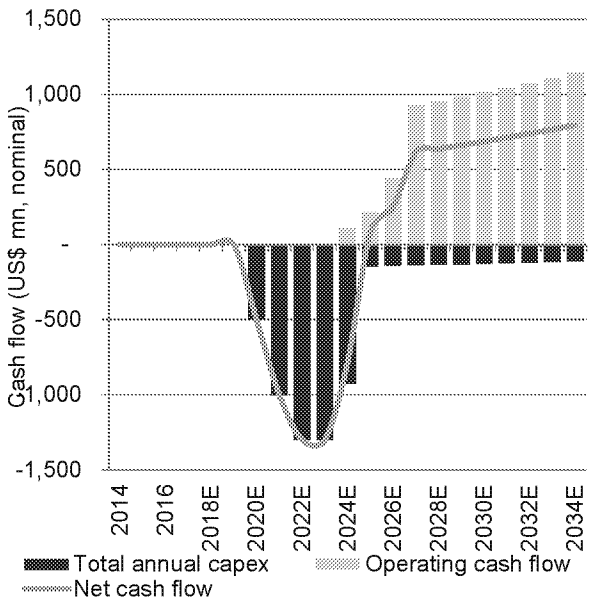
The Aynak mine is located in the north of Logar Province c.35 km southeast of Kabul, in the middle east of Afghanistan. The mine was first discovered in the early 1970s. The ownership of the mine is shared between China Metallurgical Group Corp (75%) and Jiangxi (25%, but Jiangxi will receive 50% of the production). The group officially signed an agreement on May 25, 2008 with the Afghan government to develop the deposit. Phase I of the project is expected to deliver an operation that will produce an average 320 ktpa of copper. The project has received approval, and pre-construction was initially set to commence in 2013 with pre-stripping in 2014 before commercial production starting in 2016. This timeline has not been adhered, as security concerns have delayed work on the project since 2007. The newsflow around the project has continued to indicate that multiple issues remain. More recently, the Ministry of Mines and Petroleum said that they had wrapped up their assessment of a list of demands by Chinese contractor for the mine and that the report would be sent to the high economic council. According to the reports, the Chinese consortium has requested to renegotiate the contracts. There is also an apparent lack of phosphate resources, which is required for further processing of copper ore, and according to news media the Afghan govt. is to provide.



Production profile



Cash flow chart



Economics summary

Internal rate of return	6%
NPV (including sunk costs)	-US$543
NPV (2018+)	-US$543
Cu required @ 25%	US$12,509 /t
Capex	US$4,900 mn
Capex / t Cu production	US$15,313
Capex / t Cu equ. production	US$15,313
Project type	Greenfield
Project status	Permitting
Ore reserves / resources	350 mt
Copper grade	1.20% Cu
Contained copper	4,200 kt
Commissioning	2024
Peak copper production	320 ktpa
Average LOM production	320 ktpa
Life of mine	14
Gross unit cost	US$3,974 /t
Net unit cost (C1)	US$3,974 /t

Source: Company data, Goldman Sachs Global Investment Research

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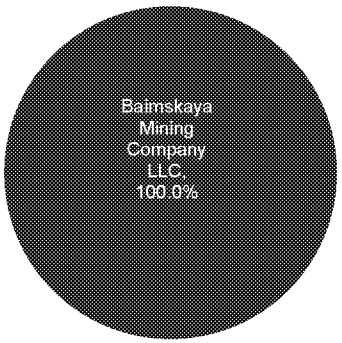
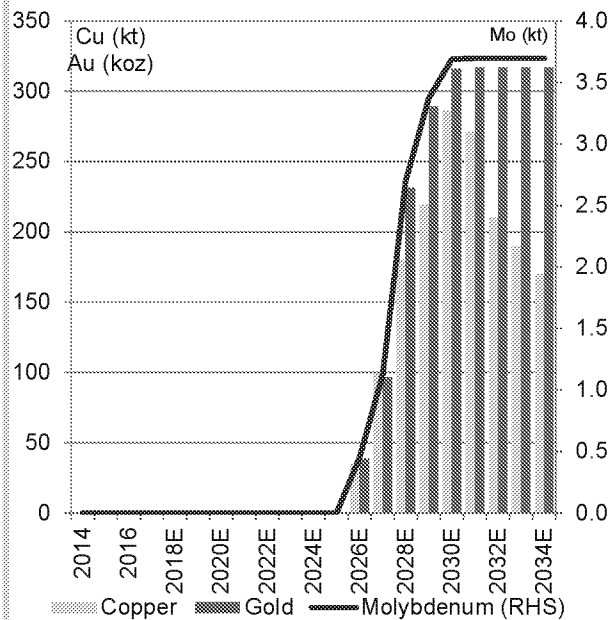
Exhibit 92: Baimskaya

Baimskaya	Russia	179 ktpa	US$5,600 mn	12% IRR

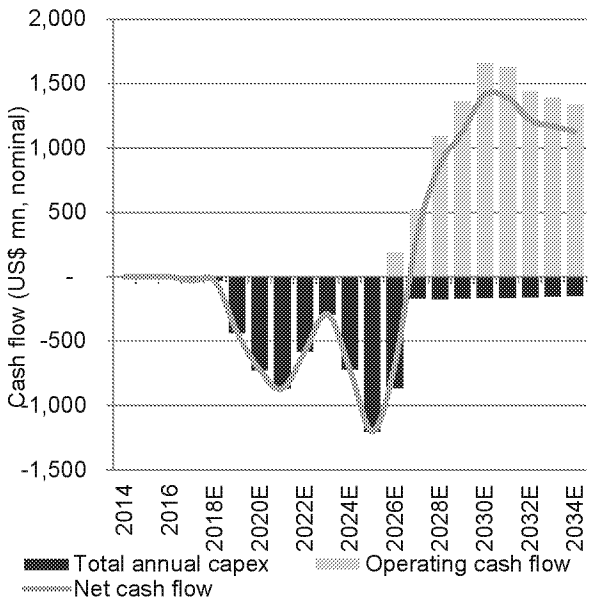
Baimskaya is one of the largest undeveloped copper-porphyry deposits globally with resource potential over 23mt of copper and 64moz of gold. Baimskaya is currently 100% owned by Baimskaya Mining Company LLC, part of Millhouse Capital. In 2017, the project's Pre-Feasibility Study was completed by FLUOR (Canada). Preparation of the Feasibility Study is underway. Project development implies construction of on-site concentrator with annual processing capacity of 30+30 mln t of ore (in 2 phases). Total investment is estimated by company at US$4.2 bn (excl. infrastructure, which is state-funded). State permission for project development has been received, including participation of foreign financial and industrial partners. KAZ Minerals recently announced that it was looking to buy this project for US$900mn (cash + equity) and that it would look to develop it. The company has said that it would look to do its own feasibility study (FS) and would look at options to develop this project post the FS.



Production profile



Cash flow chart



Economics summary

Internal rate of return	12%
NPV (including sunk costs)	US$2,350
NPV (2018+)	US$2,381
Cu required @ 12%	US$5,433 /t
Capex	US$5,600 mn
Capex / t Cu production	US$31,206
Capex / t Cu equ. production	US$23,156
Project type	Greenfield
Project status	Feasibility
Ore reserves / resources	2,024 mt
Copper grade	0.43% Cu
Contained copper	8,703 kt
Commissioning	2024
Peak copper production	316 ktpa
Average LOM production	179 ktpa
Life of mine	25+
Gross unit cost	US$3,202 /t
Net unit cost (C1)	US$3,202 /t

Source: Company data, Goldman Sachs Global Investment Research

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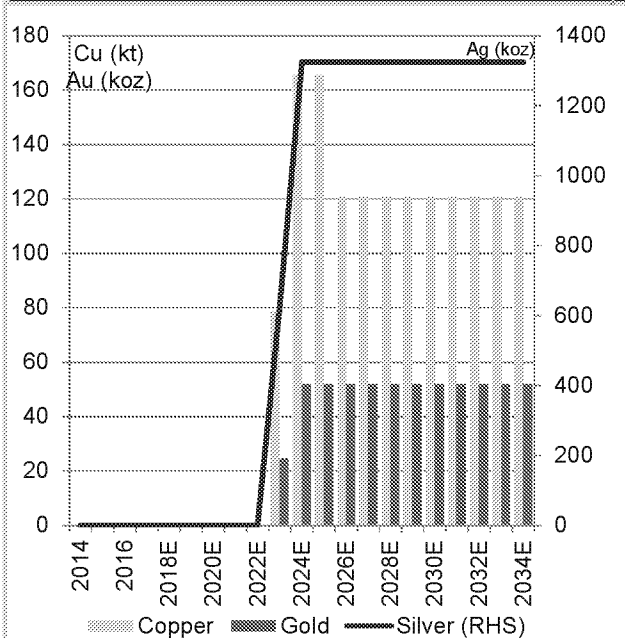
Exhibit 93: Canariaco Norte

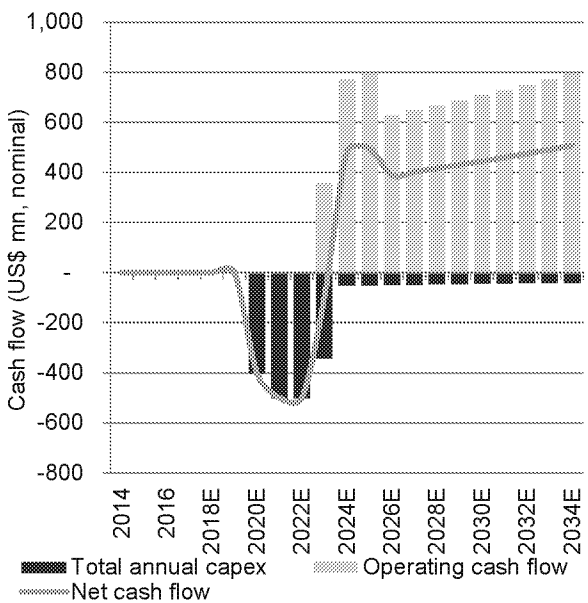
Canariaco Norte	Peru	119 ktpa	US$1,700 mn	21% IRR

The Canariaco Norte porphyry copper deposit was discovered in northern Peru in the 1970s and was acquired by Candente Copper Corp (the present owner) in 2001. Reports have suggested that the feasibility study has shown the deposit could support the operation of a 100-110 ktpd throughput rate (up from 95 kt in the PFS owing to the recommendation of a larger SAG mill), producing 127 kt of copper pa and for a period spanning more than 20 years. The company's estimated capital outlay for the project was US$1.6 bn in the pre-feasibility study in 2011 (up from US$1.44 bn previously). A number of permits are required to support project development and operation. At this stage of the Project, environmental liabilities are limited to those expected for an exploration-stage project, and include reclamation of drill pads and access roads. There have been some interesting developments recently: a) The NSR (net smelter royalty) over the project was recently acquired by Anglo Pacific Group from Entree Resources; b) Several infrastructure programmes have recently been initiated by the Peruvian govt. in the district of Canaris which could potentially see the project being fast tracked. We still think it likely takes long for the company to get financing in place for the project.

Production profile



Cash flow chart



Economics summary

Internal rate of return	21%
NPV (including sunk costs)	US$1,939
NPV (2018+)	US$1,939
Cu required @ 15%	US$5,259 /t
Capex	US$1,700 mn
Capex / t Cu production	US$14,286
Capex / t Cu equ. production	US$13,153
Project type	Greenfield
Project status	Feasibility
Ore reserves / resources	752 mt
Copper grade	0.52% Cu
Contained copper	3,912 kt
Commissioning	2023
Peak copper production	166 ktpa
Average LOM production	119 ktpa
Life of mine	22
Gross unit cost	US$2,838 /t
Net unit cost (C1)	US$2,294 /t

Source: Company data, Goldman Sachs Global Investment Research

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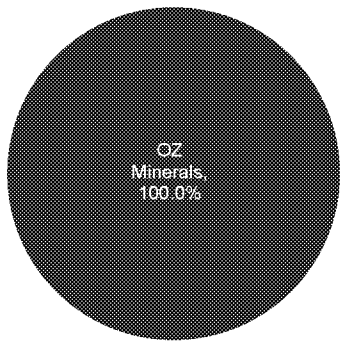
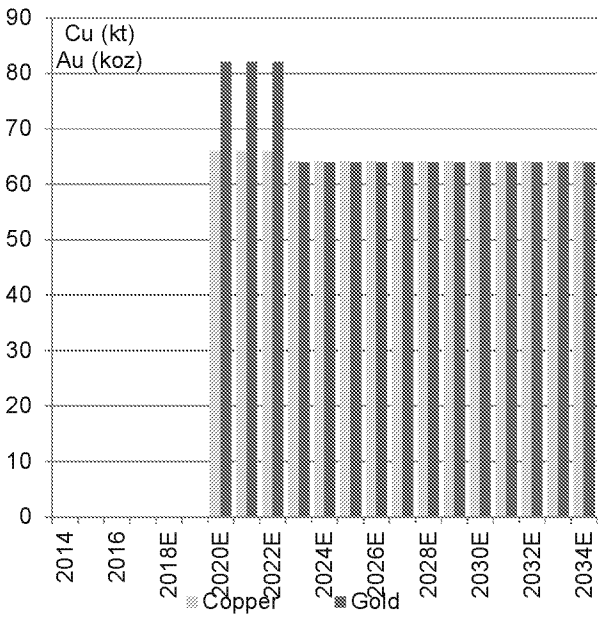
Exhibit 94: Carrapateena

Carrapateena	Australia	65 ktpa	US$789 mn	21% IRR

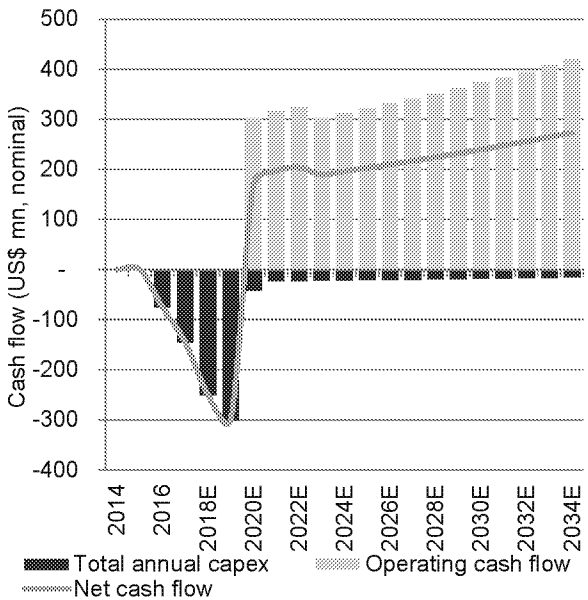
Carrapateena is a copper-gold deposit located in South Australia, 130 km north of Port Augusta. OZ Minerals acquired the Carrapateena copper-gold project from Teck Australia Pty in 2011 for US$250mn. The pre-feasibility study was released in November 2016 and the feasibility study was released in Aug. 2017. According to the FS the capex for the mine is A$916mn (c.US$750mn). The mine will have a life of 20 years with an estimated annual copper production of 65Kt and gold production of 67Koz. According to the company, the mine starts production in 4Q19 (we slightly delay it and expect first production in 2020). The company retains an expansion optionality in the throughput and resource extensions given the highly prospective region. According to Oz Minerals, it has sufficient cash balance and cash flows to finance the project. During 2019 OZ Minerals plans to conduct a scoping study.



Production profile



Cash flow chart



Economics summary

Internal rate of return	21%
NPV (including sunk costs)	US$1,224
NPV (2018+)	US$1,453
Cu required @ 10%	US$4,233 /t
Capex	US$789 mn
Capex / t Cu production	US$12,138
Capex / t Cu equ. production	US$10,126
Project type	Greenfield
Project status	Construction
Ore reserves / resources	79 mt
Copper grade	1.80% Cu
Contained copper	1,422 kt
Commissioning	2020
Peak copper production	66 ktpa
Average LOM production	65 ktpa
Life of mine	20
Gross unit cost	US$3,633 /t
Net unit cost (C1)	US$2,126 /t

Source: Company data, Goldman Sachs Global Investment Research

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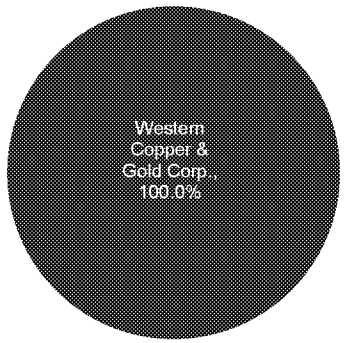
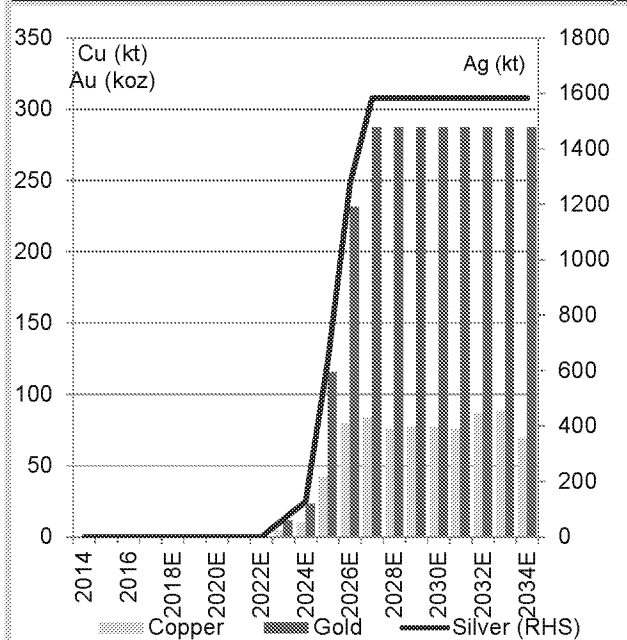
Exhibit 95: Casino

Casino	Canada	86 ktpa	US$3,545 mn	7% IRR

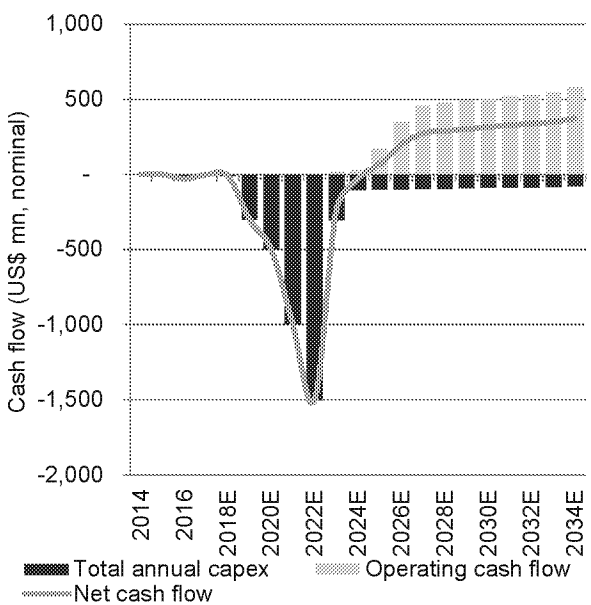
The Casino project, 100% owned by Western Copper and Gold Corporation, is a copper-gold project located in Western Central Yukon, Canada. The Casino porphyry copper-gold-molybdenum deposit will be developed as a conventional truck-shovel, open pit mine, initially processing the gold bearing oxide cap as a heap leach operation. Peak copper production is expected to be c.128 ktpa and gold production c.400 koz. The company finished the bankable feasibility study in January 2013 and submitted the EIA in January 2014, followed by two supplemental information reports in 2015. The project has been stuck in the permitting stage with no newsflow yet on the project financing being secured. The company however did update the market recently, commenting that the review undertaken of the 2013 economic metrics indicated that they were still relevant at the current commodity price / fx. In an encouraging development, the Yukon Territorial govt. and Federal govt. said that they will fund the initial 82 km of the existing access road to standards required by Casino project and 30% of the funding for the additional 126 km of the access road. However, given the considerable environmental hurdles, the company has decided to delay the submission of the Environmental and Socio-Economic Statement to the end of 2018. As such we have delayed the start of the project to 2023 from 2021 previously.



Production profile



Cash flow chart



Economics summary

Internal rate of return	7%
NPV (including sunk costs)	-US$432
NPV (2018+)	-US$399
Cu required @ 10%	US$8,069 /t
Capex	US$3,545 mn
Capex / t Cu production	US$41,357
Capex / t Cu equ. production	US$25,365
Project type	Greenfield
Project status	Permitting
Ore reserves / resources	965 mt
Copper grade	0.20% Cu
Contained copper	1,930 kt
Commissioning	2023
Peak copper production	181 ktpa
Average LOM production	86 ktpa
Life of mine	28+
Gross unit cost	US$6,699 /t
Net unit cost (C1)	US$2,905 /t

Source: Company data, Goldman Sachs Global Investment Research

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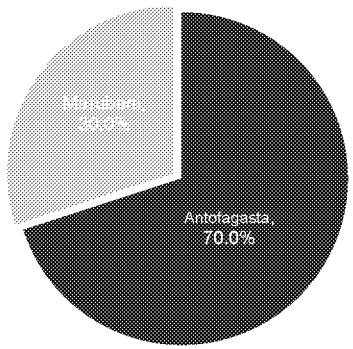
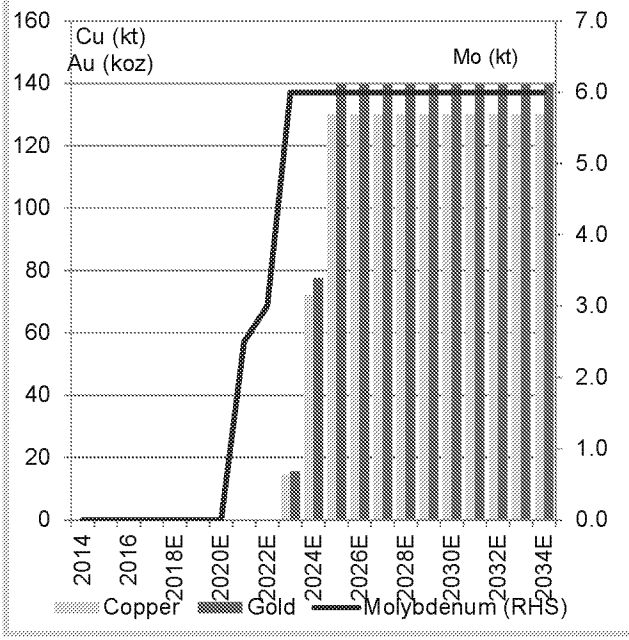
Exhibit 96: Centinela DMC

Centinela DMC	Chile	120 ktpa	US$2,970 mn	10% IRR

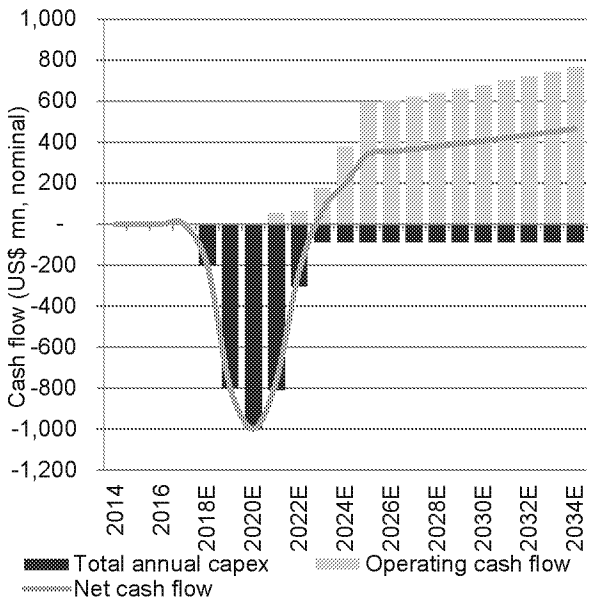
The Centinela DMC project consists of a single concentrator to be fed by the Esperanza Sur and Encuentro Sulphides deposits. Antofagasta continues to explore options for the development of deposits in the Centinela Mining District and decided that the most effective option would be if both deposits fed into a single concentrator. The company constructed a US$125 mn, 2.4Kt Molybedum plant, in 1H18 with first sales made in July 2018. The pre-feasibility study for the copper expansion project was completed at the end of 2015 and the EIA for the project has been received. The latest plan encompasses a 90 ktpd concentrator plant with annual copper output of c.140 ktpa, gold output of c.150 kozpa and Molybdenum output of 6 ktpa. However, the company is in the process of conducting a review of whether it can expand the existing concentrator (for which the PFS is underway). This will be a brownfield project with lower capex and lower construction risk, and as such lower risk associated with the project. However, there aren't enough details available for us to model this. The FS to build a second concentrator is expected to be completed by 2018 end and given either project would take 18-24 months for board approval, increased production would likely be from 2023. We model the first alternative- the expansion of existing conc is 2nd alternative.



Production profile



Cash flow chart



Economics summary

Internal rate of return	10%
NPV (including sunk costs)	US$726
NPV (2018+)	US$726
Cu required @ 15%	US$9,122 /t
Capex	US$2,970 mn
Capex / t Cu production	US$24,829
Capex / t Cu equ. production	US$18,425
Project type	Brownfield
Project status	Feasibility
Ore reserves / resources	2,065 mt
Copper grade	0.44% Cu
Contained copper	9,086 kt
Commissioning	2022
Peak copper production	130 ktpa
Average LOM production	120 ktpa
Life of mine	28+
Gross unit cost	US$4,769 /t
Net unit cost (C1)	US$2,535 /t

Source: Company data, Goldman Sachs Global Investment Research

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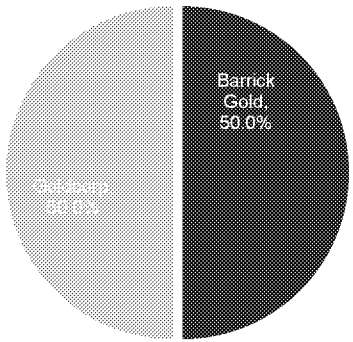
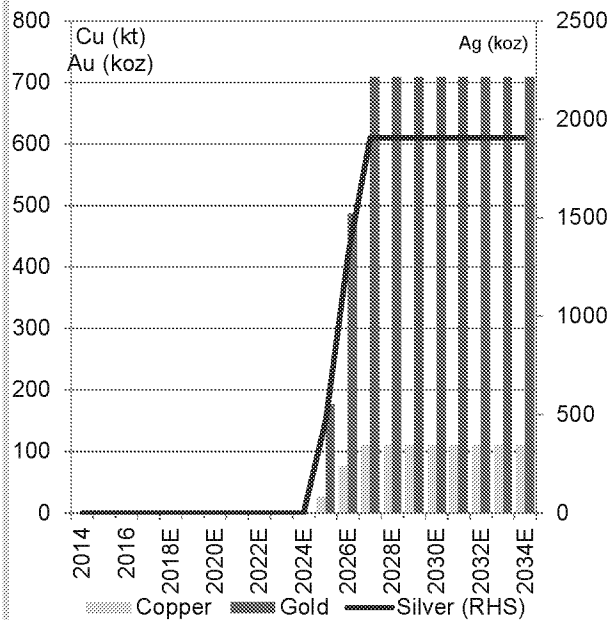
Exhibit 97: Cerro Casale

Cerro Casale	Chile	105 ktpa	US$6,000 mn	10% IRR

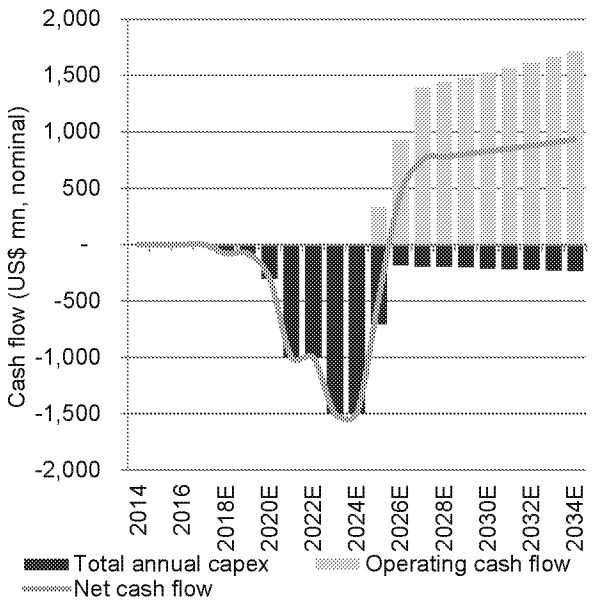
The Cerro Casale deposit is located in the Maricunga district of Region III in Chile. Ownership of the deposit is shared between Barrick Gold (50%) and Goldcorp (50%) after Barrick sold a 25% stake to Goldcorp and Kinross sold its 25% stake to Goldcorp in 2017. As part of the Goldcorp acquisition of the 50% stake in Cerro Casale, the company is required to spend a minimum of US$80mn in each successive 2-year period until the deferred payment obligation of US$260mn is satisfied. If Goldcorp does not spend the minimum in any two-year period, Goldcorp will instead be required to make a payment to Barrick equal to 50% of the shortfall, with a corresponding reduction in the deferred payment obligation. The 2 companies have formed a dedicated project team that will undertake 24 months of concept studies on the combined project. The target for this year is update geological review and model for the mine. A pre-feasibility study is also likely to be commenced this year. Given that the feasibility study commences this year, we believe it is fair to assume that the construction of the project doesn't start before 2020/21 with first production in 2025. Note that this is a delay of 3 years vs. our previous estimate.



Production profile



Cash flow chart



Economics summary

Internal rate of return	10%
NPV (including sunk costs)	US$989
NPV (2018+)	US$989
Cu required @ 15%	US$9,964 /t
Capex	US$6,000 mn
Capex / t Cu production	US$57,313
Capex / t Cu equ. production	US$25,032
Project type	Greenfield
Project status	Permitting
Ore reserves / resources	1,198 mt
Copper grade	0.60% Cu
Contained copper	7,186 kt
Commissioning	2025
Peak copper production	110 ktpa
Average LOM production	105 ktpa
Life of mine	22
Gross unit cost	US$4,996 /t
Net unit cost (C1)	-US$3,513 /t

Source: Company data, Goldman Sachs Global Investment Research

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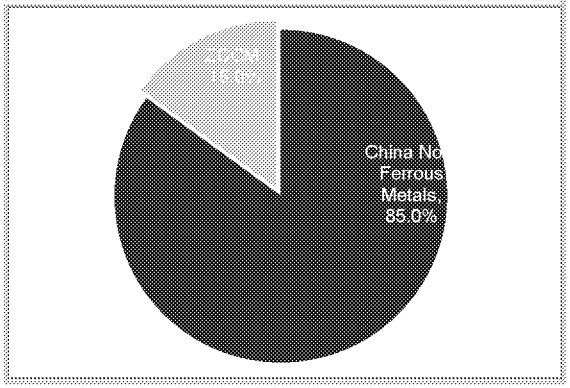
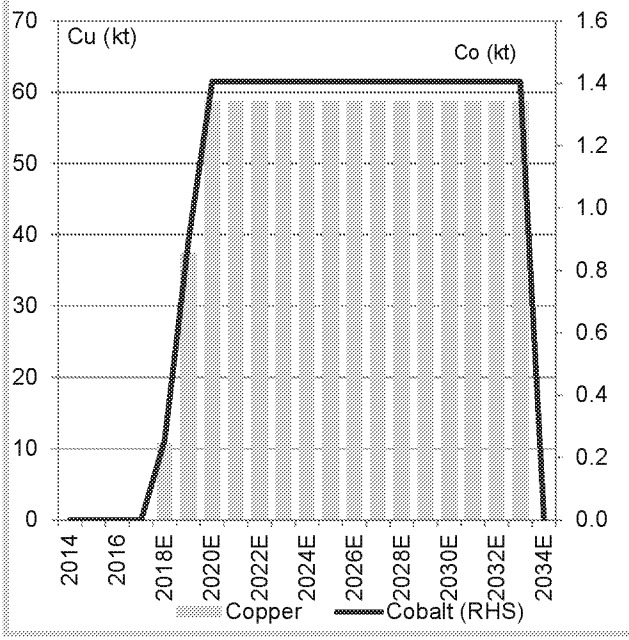
Exhibit 98: Chambishi

Chambishi	Zambia	54 ktpa	US$750 mn	13% IRR

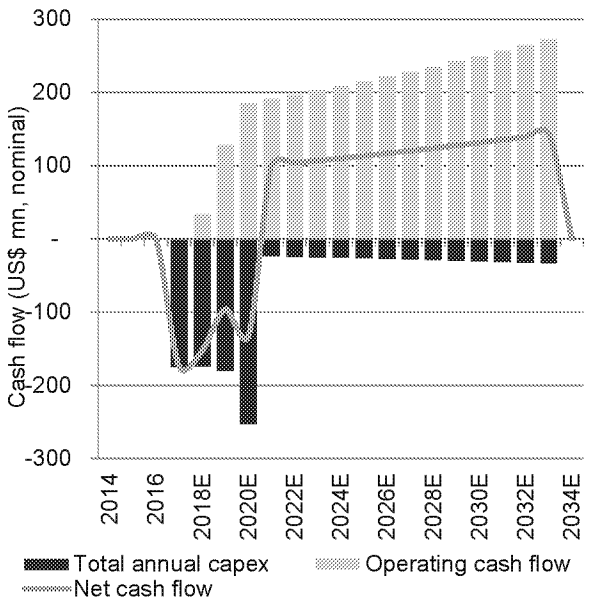
Chambishi is a copper mine in Zambia owned by China Non-Ferrous Metals (which owns 85% of the mine) and ZCCM (which owns 15%). The Chambishi copper deposits are classic Zambian-type Lower Roan hosted Copperbelt deposits. Chambishi and Mwambashi are located on the western limb of the Kafue Anticline, the dominant structural feature of the eastern Zambian Copperbelt, with the deposits themselves located on the margins of a palaeo-basin known as the Chambishi Basin. The core business of Chambishi is in refining copper and cobalt, the majority of which is sourced from DRC. As of mid-2016, CNMC reported that the construction of the Chambishi SouthEast mine - which adds c.60Kt to the mines' production profile at a capex of c.US$700mn (we add US$50mn to that number) will be completed by c.3Q18.



Production profile



Cash flow chart



Economics summary

Internal rate of return	13%
NPV (including sunk costs)	US$228
NPV (2018+)	US$408
Cu required @ 15%	US$6,800 /t
Capex	US$750 mn
Capex / t Cu production	US$13,777
Capex / t Cu equ. production	US$10,479
Project type	Greenfield
Project status	Construction
Ore reserves / resources	59 mt
Copper grade	1.83% Cu
Contained copper	1,082 kt
Commissioning	2018
Peak copper production	59 ktpa
Average LOM production	54 ktpa
Life of mine	16
Gross unit cost	US$4,963 /t
Net unit cost (C1)	US$3,224 /t

Source: Company data, Goldman Sachs Global Investment Research

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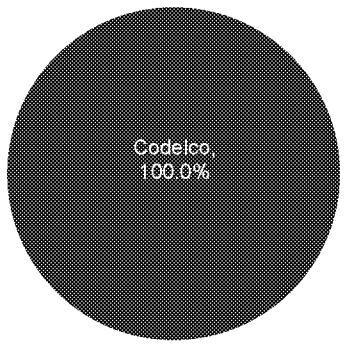
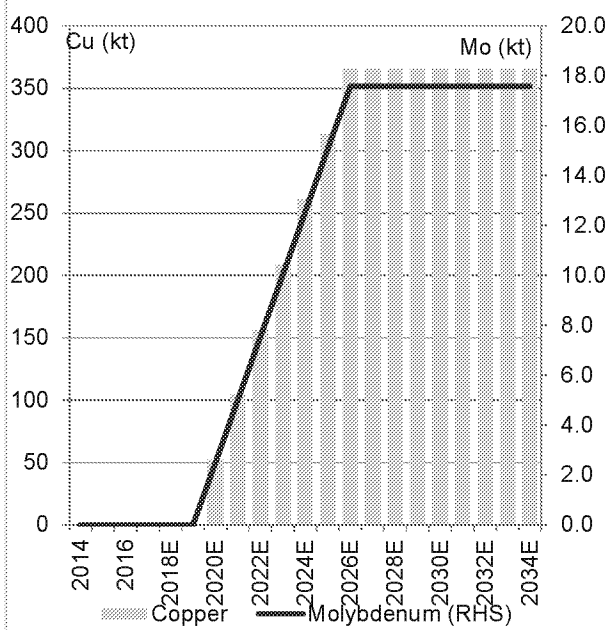
Exhibit 99: Chuquicamata U/G

Chuquicamata U/G	Chile	329 ktpa	US$4,200 mn	13% IRR

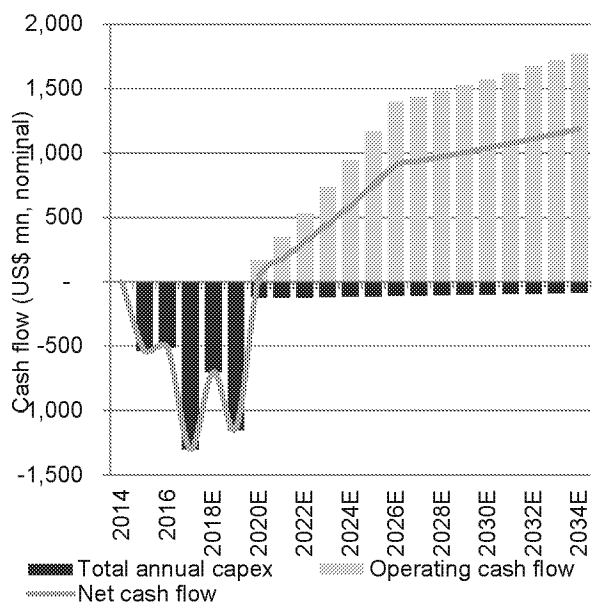
The Chuquicamata mine is located in Chile and is wholly owned by Codelco. The development of the underground mine is designed to exploit part of the remaining mineral resources once the current Chuquicamata open pit mine is exhausted, around 2020. The underground operation is expected to produce an average annual output of 366 kt of copper over a 29-year life of mine; this compares with open pit output of 340 kt in 2014. The feasibility study for the project was completed in 4Q12, three years after it commenced. Final board approval was given in mid-2014 and the project progress stood at 50% at the end of 1Q17. The company modified the underground expansion plan in May 2017 in order to enhance efficiencies in the operations by planning to mine three underground levels instead of four as envisaged earlier. However, the modification is not expected to have an impact on the production profile of the mine. Codelco filed an EIA (environmental impact assessment) report to carry out major upgrades at the mine. According to the latest newsflow, the underground portion of the mine should start to produce copper from 3Q19. However, given our experience with similar moves, we believe that there is some risk, and as such we take a more cautious view and assume first production in 2020.



Production profile



Cash flow chart



Economics summary

Internal rate of return	13%
NPV (including sunk costs)	US$4,203
NPV (2018+)	US$6,670
Cu required @ 15%	US$7,482 /t
Capex	US$4,200 mn
Capex / t Cu production	US$12,764
Capex / t Cu equ. production	US$11,222
Project type	Brownfield
Project status	Construction
Ore reserves / resources	1,333 mt
Copper grade	0.73% Cu
Contained copper	9,731 kt
Commissioning	2020
Peak copper production	366 ktpa
Average LOM production	329 ktpa
Life of mine	29
Gross unit cost	US$4,087 /t
Net unit cost (C1)	US$3,181 /t

Source: Company data, Goldman Sachs Global Investment Research

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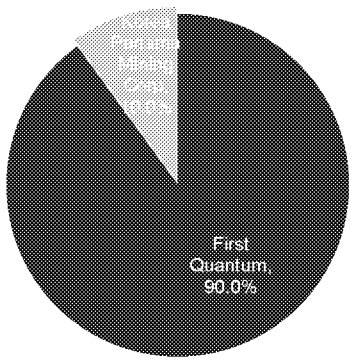
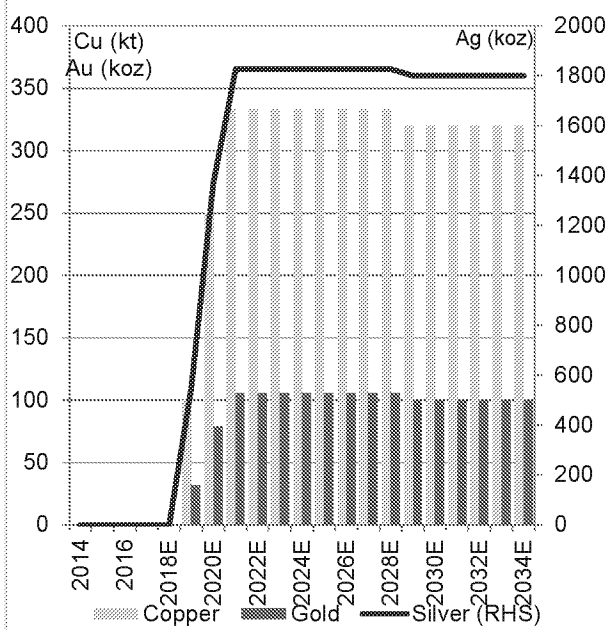
Exhibit 100: Cobre Panama

Cobre Panama	Panama	314 ktpa	US$6,350 mn	11% IRR

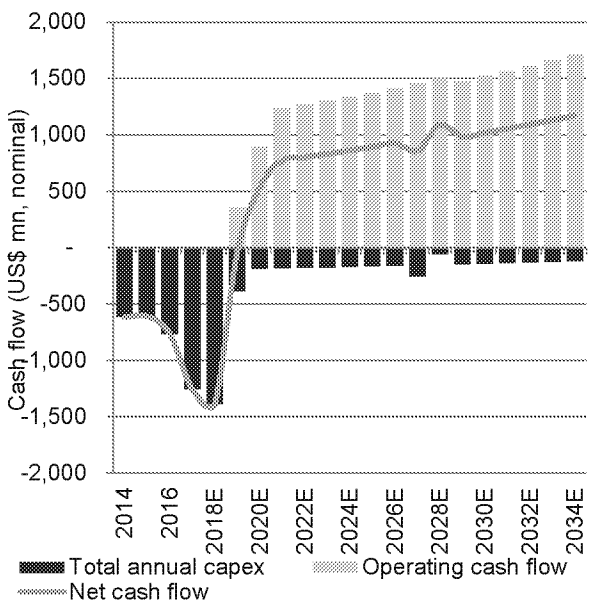
Cobre Panama is a large open pit copper development located 120km west of Panama City. The mine is 90% owned by First Quantum following the acquisition of Inmet Mining in 1H13, with the remaining 10% owned by Korea Panama Mining Corporation (KPMC) for which the company in its FY17 results gave new guidance for the mine. It expects the mine to reach commercial production in 2019 with production of 150Kt and reaching full capacity of 320Kt by 2020. The company also took up the capex estimate for the mine from US$5.5bn to US$6.3bn (we add c. US$50mn to the capex, in line with our inflation expectations). However, some events more recently have led us to think the 2019 guidance may not be achievable, notably there was a 6-week strike by workers at the mine which has delayed the construction. All the electrical wiring still needs to be completed, as a result of which we see a small downside to the production estimates for next year - we forecast copper production of 100Kt for 2019. First Quantum has sufficient funds to get the mine to commercial production, in our view.



Production profile



Cash flow chart



Economics summary

Internal rate of return	11%
NPV (including sunk costs)	US$3,505
NPV (2018+)	US$8,745
Cu required @ 15%	US$8,883 /t
Capex	US$6,350 mn
Capex / t Cu production	US$20,196
Capex / t Cu equ. production	US$19,164
Project type	Greenfield
Project status	Construction
Ore reserves / resources	3,182 mt
Copper grade	0.38% Cu
Contained copper	12,092 kt
Commissioning	2019
Peak copper production	334 ktpa
Average LOM production	314 ktpa
Life of mine	32+
Gross unit cost	US$3,179 /t
Net unit cost (C1)	US$2,843 /t

Source: Company data, Goldman Sachs Global Investment Research

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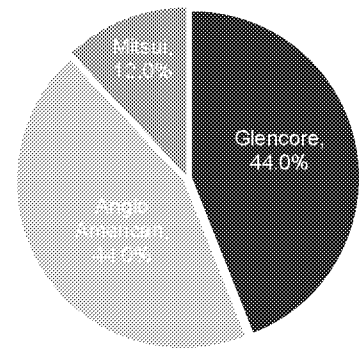
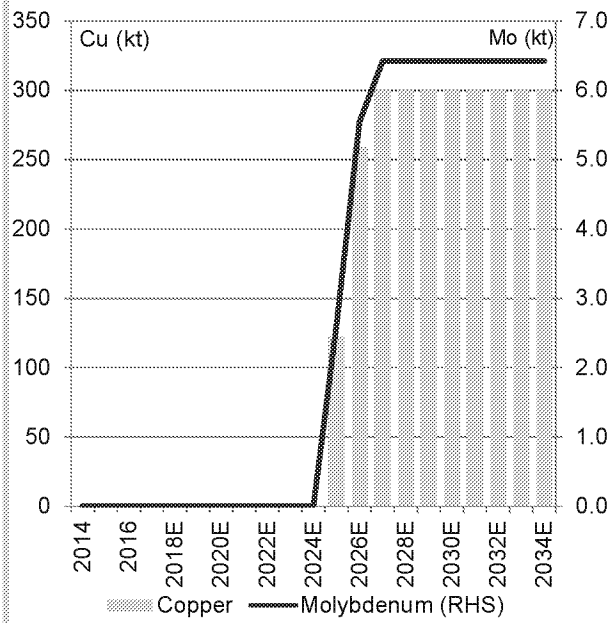
Exhibit 101: Collahuasi GL4

Collahuasi GL4	Chile	292 ktpa	US$4,350 mn	15% IRR

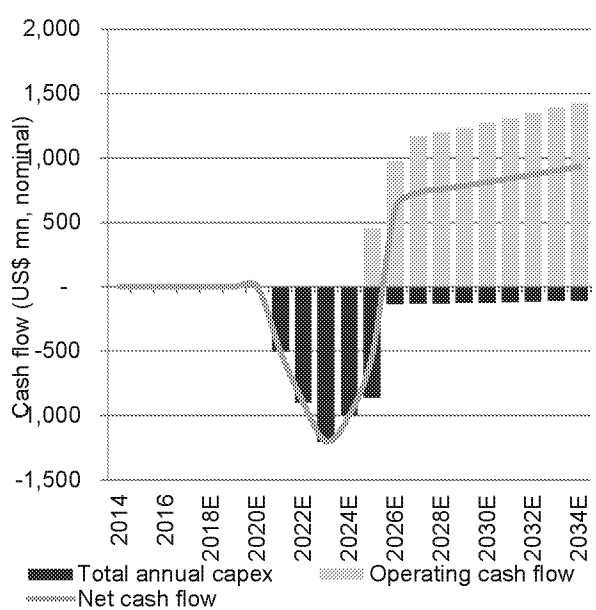
The Collahuasi mine is located on the Andean plateau in northern Chile. The ownership of the mine is shared between Glencore (44%) and Anglo American (44%) with the remaining stake held by Mitsui. The group of owners have undertaken a prefeasibility study into phase three of the expansion project which involves the construction of one, or possibly two, grinding lines. The introduction of these grinds would increase the concentrator plant capacity from 160 ktpd to either 270 ktpd or 380 ktpd, taking total copper production at the mine to 1 mtpa. The project is currently in the pre-feasibility stage. However, it had been deprioritised as Anglo and Glencore needed to resolve operating challenges at the underlying Collahuasi mine in 2012/13 and both major partners addressed high debt levels as prices fell below expected levels. There have been no updates provided on the project since. Estimated total capex for the project is US$4-6 bn depending on whether the owners decide on one or two 110 ktpd lines. Water issues will need to be resolved before any expansion can be done as any expansion would require pumping of desalinated sea water. The environmental study which was scheduled for 2017 was delayed last year and is to be submitted in 2018. Anglo has said that it plans to first invest in Quellaveco project and that Collahuasi expansion is at least 6 years away (our base case remains 2025).



Production profile



Cash flow chart



Economics summary

Internal rate of return	15%
NPV (including sunk costs)	US$2,888
NPV (2018+)	US$2,888
Cu required @ 15%	US$6,651 /t
Capex	US$4,350 mn
Capex / t Cu production	US$14,921
Capex / t Cu equ. production	US$14,041
Project type	Brownfield
Project status	Pre-feasibility
Ore reserves / resources	3,220 mt
Copper grade	0.93% Cu
Contained copper	29,946 kt
Commissioning	2025
Peak copper production	300 ktpa
Average LOM production	292 ktpa
Life of mine	26+
Gross unit cost	US$3,633 /t
Net unit cost (C1)	US$3,229 /t

Source: Company data, Goldman Sachs Global Investment Research

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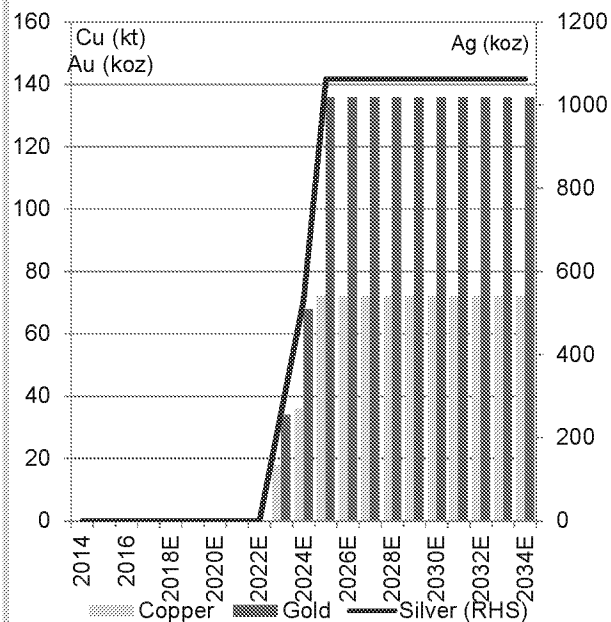
Exhibit 102: Cotabambas

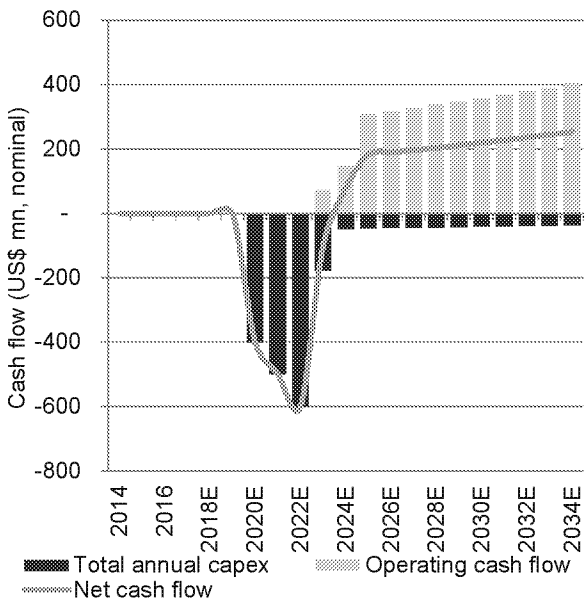
Cotabambas	Peru	68 ktpa	US$1,633 mn	10% IRR

Cotabambas is a greenfield open pit copper-gold-silver project located in Cotabambas Province of Peru. Panoro Minerals Ltd. is the sole owner of the project. The Preliminary Economic Assessment (PEA) for the project was published in April 2015. An updated PEA was published in September 2015, which envisages a concentrator plant with a throughput of 80 ktpd over a mine life of 20 years. The pre-feasibility study for the project is currently being conducted with guided development capex of US$1.5 bn (our estimate includes some inflation). In March 2016, the company entered into an early deposit precious metal streaming agreement with Silver Wheaton for an upfront payment of US$140 mn for 25% of payble gold production and 100% of silver production, for which the company is entitled to receive US$14.0 million spread over up to 9 years as an early deposit, with payments to be used to fund expenses related to the Cotabambas Project. Panoro has completed 6.6 kms of exploration and step-out drilling targeting areas of oxide, sulfide and skarn mineralization. The company this year plans to extend to program to up to 10 kms.

Production profile



Cash flow chart



Economics summary

Internal rate of return	10%
NPV (including sunk costs)	US$218
NPV (2018+)	US$218
Cu required @ 15%	US$8,210 /t
Capex	US$1,633 mn
Capex / t Cu production	US$24,123
Capex / t Cu equ. production	US$17,347
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	117 mt
Copper grade	0.42% Cu
Contained copper	492 kt
Commissioning	2023
Peak copper production	72 ktpa
Average LOM production	68 ktpa
Life of mine	21
Gross unit cost	US$5,450 /t
Net unit cost (C1)	US$2,720 /t

Source: Company data, Goldman Sachs Global Investment Research

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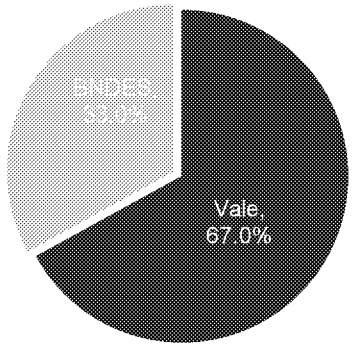
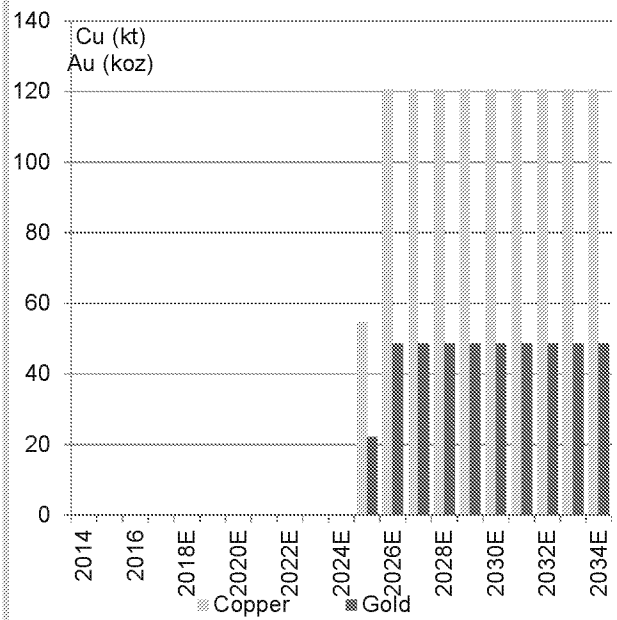
Exhibit 103: Cristalino

Cristalino	Brazil	118 ktpa	US$1,550 mn	18% IRR

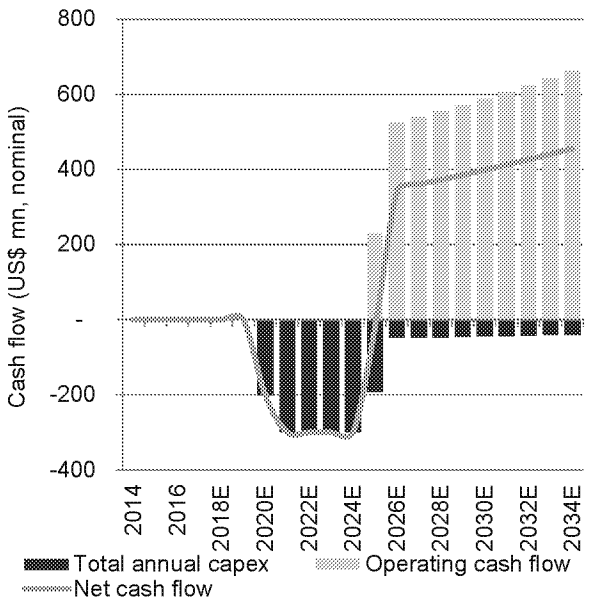
Cristalino, located in the Carajás copper region, Pará, Brazil, is a copper mine owned by Vale (67%) and BNDES (33%). A pre-feasibility study of the project was carried out in 2008/09 with a planned throughput of 16 mtpa. There have been no recent updates on the project from its owners as the focus has been on iron ore projects. We currently estimate the project commences in 2025, and assume a capex of US$1,800mn (assumption taken from WoodMac). There have been no updates from Vale on this project, as such we see the probability of this project coming online as very low.



Production profile



Cash flow chart



Economics summary

Internal rate of return	18%
NPV (including sunk costs)	US$1,686
NPV (2018+)	US$1,686
Cu required @ 25%	US$8,672 /t
Capex	US$1,550 mn
Capex / t Cu production	US$13,129
Capex / t Cu equ. production	US$12,183
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	379 mt
Copper grade	0.66% Cu
Contained copper	2,501 kt
Commissioning	2025
Peak copper production	121 ktpa
Average LOM production	118 ktpa
Life of mine	25
Gross unit cost	US$3,293 /t
Net unit cost (C1)	US$2,779 /t

Source: Company data, Goldman Sachs Global Investment Research

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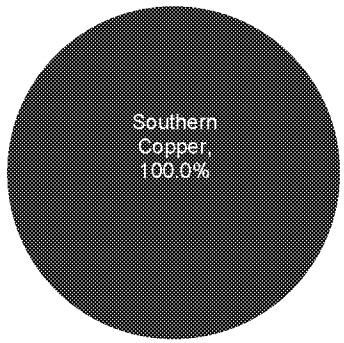
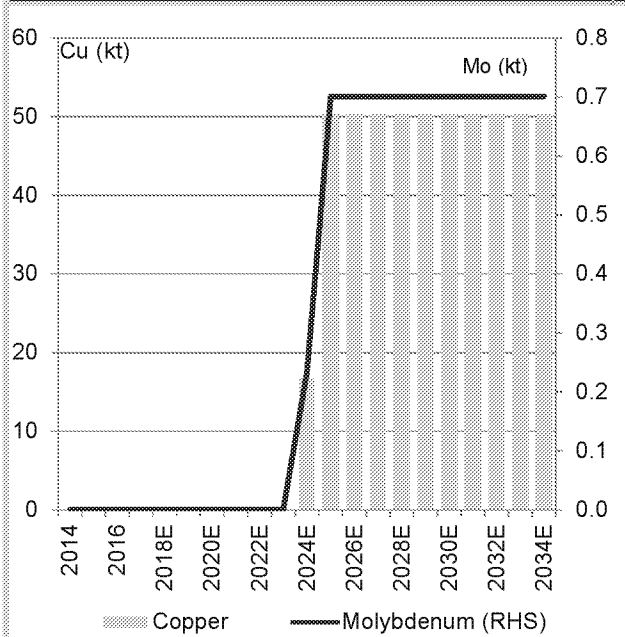
Exhibit 104: Cuajone

Cuajone	Peru	49 ktpa	US$500 mn	19% IRR

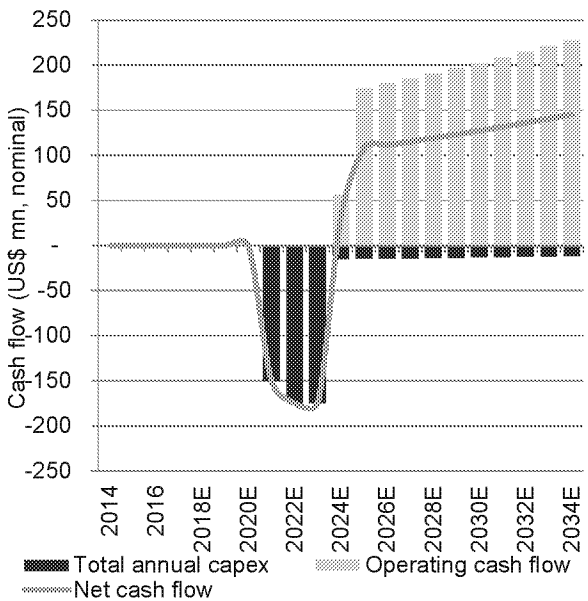
The Cuajone mine is located in southern Peru, 840 km from Lima and is wholly owned by Southern Copper. The operation currently produces c.160 ktpa of copper and is undergoing productivity upgrades to raise production by a further 22 ktpa. The company is also planning a concentrator upgrade at a later date, raising production capacity by a further 50 ktpa, with planned start-up from 2018. The project is still in the early stages and is not yet board approved. The preliminary capex estimate from the company is US$500 mn. There has been little newsflow on the project ever since it was postponed as the company prioritised Toquepala concentrator expansion over Cuajone expansion. The project doesn't feature in the company's latest list of potential projects for the near term, and as such we don't expect it to be greenlit in the near future. We expect the capex spend to start post 2020 with first production sometime in 2024.



Production profile



Cash flow chart



Economics summary

Internal rate of return	19%
NPV (including sunk costs)	US$600
NPV (2018+)	US$600
Cu required @ 15%	US$5,939 /t
Capex	US$500 mn
Capex / t Cu production	US$10,200
Capex / t Cu equ. production	US$9,809
Project type	Brownfield
Project status	Feasibility
Ore reserves / resources	1,782 mt
Copper grade	0.52% Cu
Contained copper	9,177 kt
Commissioning	2024
Peak copper production	50 ktpa
Average LOM production	49 ktpa
Life of mine	27+
Gross unit cost	US$3,633 /t
Net unit cost (C1)	US$3,370 /t

Source: Company data, Goldman Sachs Global Investment Research

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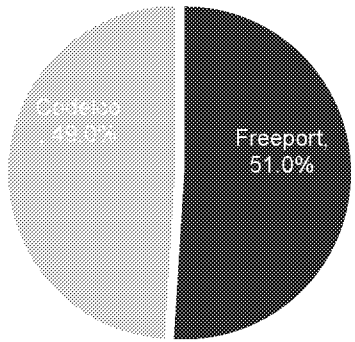
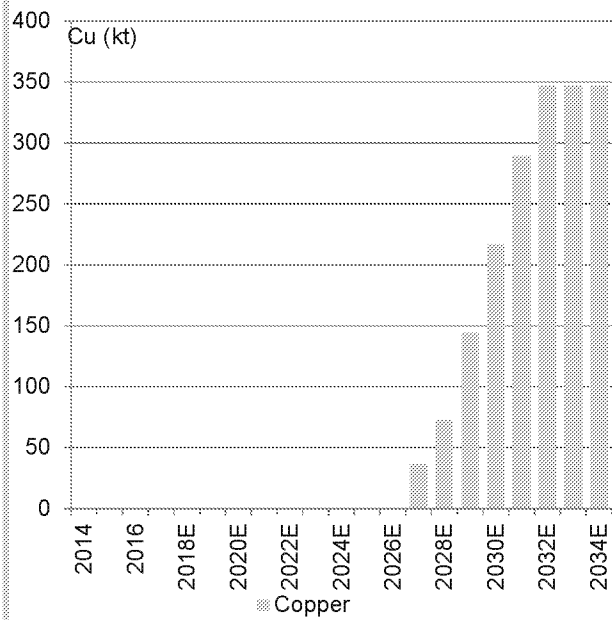
Exhibit 105: El Abra

El Abra mill	Chile	340 ktpa	US$5,274 mn	-9% IRR

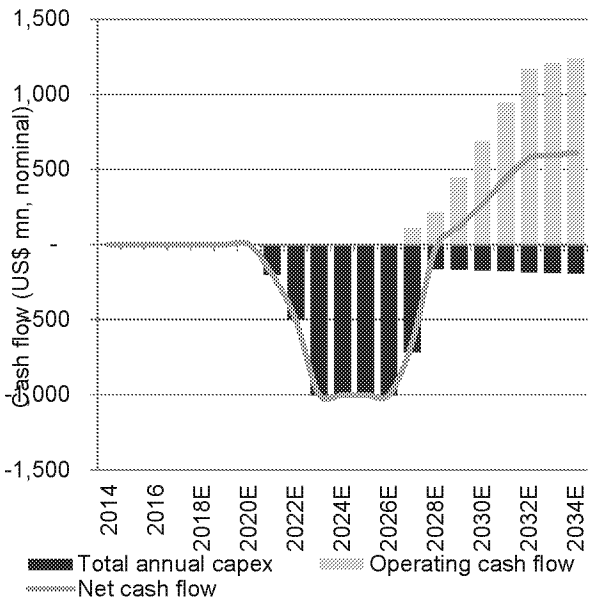
El Abra is a producing copper project locaed in Chile jointly owned by Freeport (51%) and Codelco (49%). The mine as of now is a SxEw project but there is a significant sulfide resource which the company estimates at 2bn tonnes at > 0.45% copper grade. Freeport is currently in the process of advancing technical studies for the project to build a 240kt/d concentrator - similar to the one it built at Cerro Verde. The estimated production according to the company could be c. 340Kt. There have been little details on the capex / costs etc. of the mine. Our assumption of the capex is based on the Cerro Verde capex (given that this project is similar to that one). We estimate the capex to be c. US$5.3bn for the project. According to the company it needs at least 3-4 years for feasibility and permitting with another 3-4 years needed for construction. Given Freeport has other projects it is pursuing right now, we believe that this is unlikely to be at the top of its priority list. As such we expect construction of this project to start in 2021 with first production in 2027 and the mine reaching full capacity by 2030.



Production profile



Cash flow chart



Economics summary

Internal rate of return	-9%
NPV (including sunk costs)	-US$2,230
NPV (2018+)	-US$2,230
Cu required @ 15%	US$4,870 /t
Capex	US$5,274 mn
Capex / t Cu production	US$15,502
Capex / t Cu equ. production	US$15,502
Project type	Brownfield
Project status	Pre-feasibility
Ore reserves / resources	394 mt
Copper grade	0.44% Cu
Contained copper	1,734 kt
Commissioning	2027
Peak copper production	347 ktpa
Average LOM production	340 ktpa
Life of mine	8
Gross unit cost	US$3,854 /t
Net unit cost (C1)	US$3,854 /t

Source: Company data, Goldman Sachs Global Investment Research

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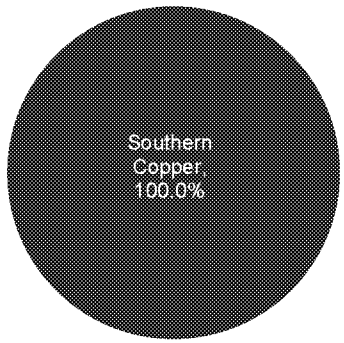
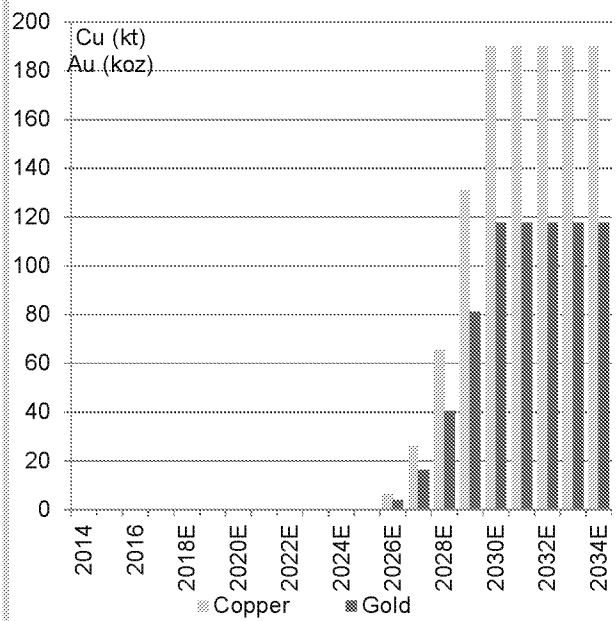
Exhibit 106: El Arco

El Arco	Mexico	169 ktpa	US$3,200 mn	11% IRR

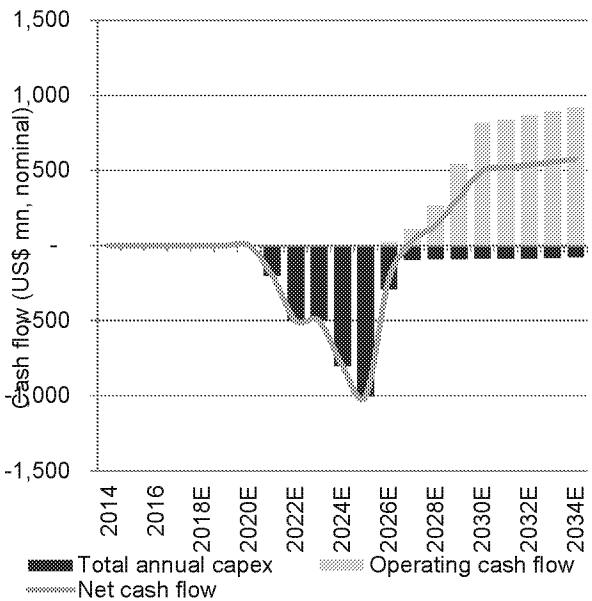
El Arco is a copper deposit located in the central part of the Baja California peninsula with ore reserves over 2.7bn tonnes. Copper grade is c. 0.4% and gold grade is 0.11g/t. The project includes an open-pit mine combining concentrator and SX-EW operations with an estimated production of 190Kt of copper and 105Koz of gold. The company since 2015 has been conducting exploration activities and the plan remains to continue to conduct those this year. In addition, Southern Copper will begin an engineering study to define optimization alternatives for the project and update the feasibility study, besides further analysis in the electrical energy supply. There are no capex estimates for the mine, as such based on our analysis, we assume capex of US$3.2bn (this includes an escalation of US$200mn). We assume first capex spend in 2021 with the mine beginning commercial production by 2026 and reaching full capacity by 2030.



Production profile



Cash flow chart



Economics summary

Internal rate of return	11%
NPV (including sunk costs)	US$890
NPV (2018+)	US$890
Cu required @ 12%	US$4,870 /t
Capex	US$3,200 mn
Capex / t Cu production	US$18,955
Capex / t Cu equ. production	US$16,936
Project type	Greenfield
Project status	Scoping
Ore reserves / resources	2,700 mt
Copper grade	0.40% Cu
Contained copper	10,773 kt
Commissioning	2026
Peak copper production	190 ktpa
Average LOM production	169 ktpa
Life of mine	25+
Gross unit cost	US$3,970 /t
Net unit cost (C1)	US$3,182 /t

Source: Company data, Goldman Sachs Global Investment Research

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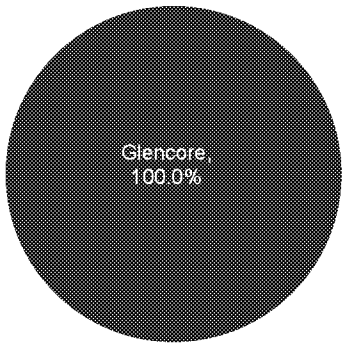
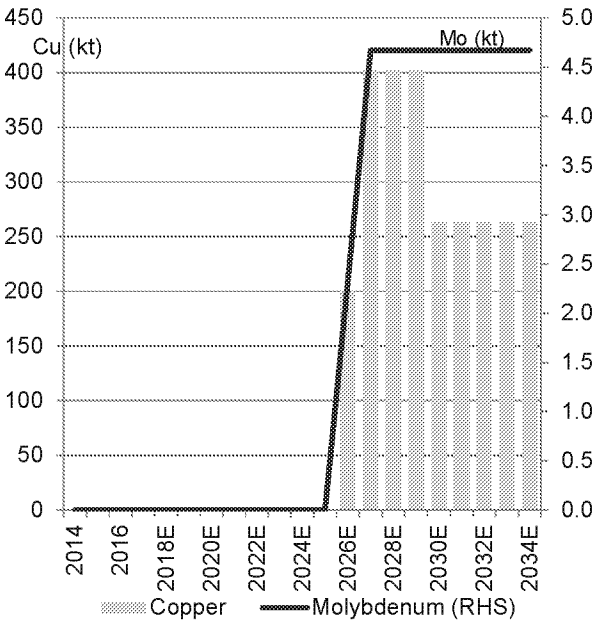
Exhibit 107: El Pachon

El Pachón	Argentina	277 ktpa	US$4,500 mn	13% IRR

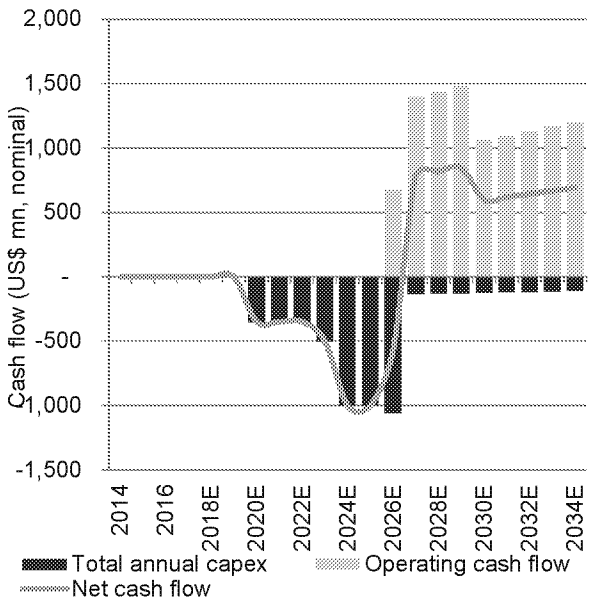
Glencore acquired the El Pachón asset as part of its Falconbridge acquisition in 2006. The mine is situated in west Argentina. The next steps would include completing the environmental and social impact assessment and progressing the feasibility study. Once complete, the project team would need to present the EIA to the relevant authorities in Argentina and Chile (given the copper will be shipped from Chile as the project falls under the Mining Integration Treaty signed in 1997 by Argentina and Chile). The environmental requirements for the project have been made more stringent with the passing of legislation that requires miners to perform an inventory of glacial ice before constructing. Glencore's last guided capex estimate was US$4.1 bn for the development of the mine. The company has guided to total production of 400 ktpa of copper for the first five years of operations, along with silver and molybdenum by-products. There has been no update from the company regarding this project of late, although there has been recent comments from Argentina's San Juan government for Glencore to decide whether to develop the project. As a result, we see elevated risk of delays to previous plans and a potential change in ownership. We delay the project start by 2 years (from 2024-2026) and see low probability that the project comes online.



Production profile



Cash flow chart



Economics summary

Internal rate of return	13%
NPV (including sunk costs)	US$1,699
NPV (2018+)	US$1,699
Cu required @ 25%	US$10,029 /t
Capex	US$4,500 mn
Capex / t Cu production	US$16,243
Capex / t Cu equ. production	US$15,878
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	1,590 mt
Copper grade	0.55% Cu
Contained copper	8,745 kt
Commissioning	2026
Peak copper production	402 ktpa
Average LOM production	277 ktpa
Life of mine	25+
Gross unit cost	US$3,860 /t
Net unit cost (C1)	US$3,534 /t

Source: Company data, Goldman Sachs Global Investment Research

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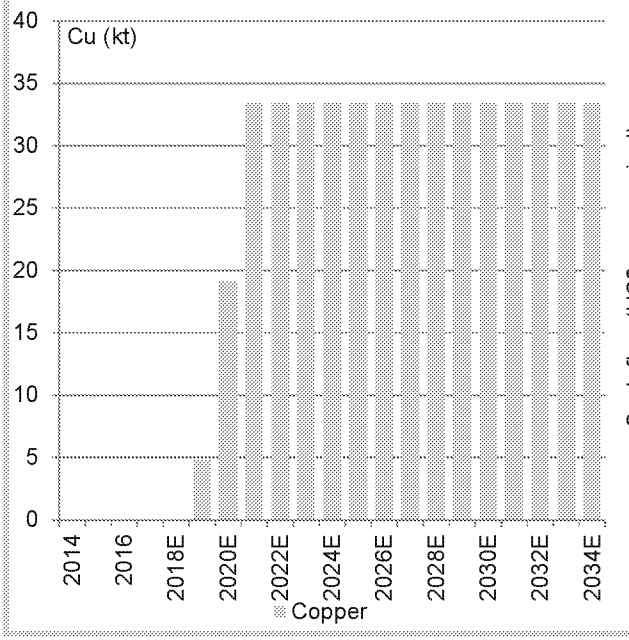
Exhibit 108: El Pilar

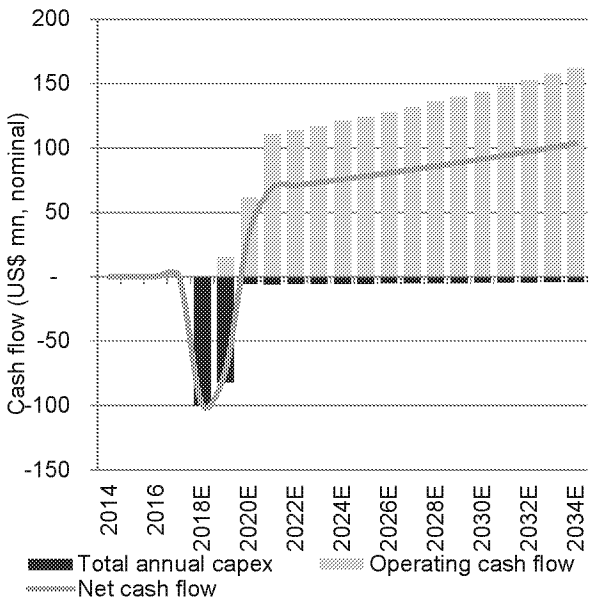
El Pilar	Mexico	31 ktpa	US$179 mn	32% IRR

El Pilar, located in the state of Sonora, Mexico, is a greenfield open pit copper project. Southern Copper, the sole owner of the project, acquired the mine from Mercator Minerals Ltd. in July 2015 for a total consideration of US$100 mn cash. El Pilar is located about 45 km from Southern Copper's existing Buenavista mine. A feasibility study for the mine was published in 2011 and updated in 2012. The project envisages a conventional open-pit mine and a SX-EW plant producing 35 ktpa of copper cathodes over an initial 14-year mine life. As per the latest resource statement, the mine contains 325 Mt of ore, with copper content of 0.29%. The company was initially guiding for first production in 2018 with total capex of US$300 mn, however faced delays. According to the latest announcement by the company, it is looking to spend c. US$159 mn at the project to bring it into production next year (our estimate adjusts for inflation). The ore will be transported by truck from the pit to the primary crushers of the La Caridad concentrator. This will increase the over-all mineral ore grade (from 0.34% at La Caridad to 0.78% expected from Pilares). The company is currently preparing the mine plan and expects production to start in 2019.

Production profile



Cash flow chart



Economics summary

Internal rate of return	32%
NPV (including sunk costs)	US$409
NPV (2018+)	US$409
Cu required @ 12%	US$4,765 /t
Capex	US$179 mn
Capex / t Cu production	US$5,818
Capex / t Cu equ. production	US$5,818
Project type	Greenfield
Project status	Construction
Ore reserves / resources	295 mt
Copper grade	0.29% Cu
Contained copper	859 kt
Commissioning	2019
Peak copper production	33 ktpa
Average LOM production	31 ktpa
Life of mine	16
Gross unit cost	US$3,179 /t
Net unit cost (C1)	US$3,179 /t

Source: Company data, Goldman Sachs Global Investment Research

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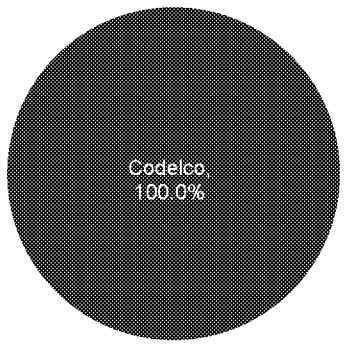
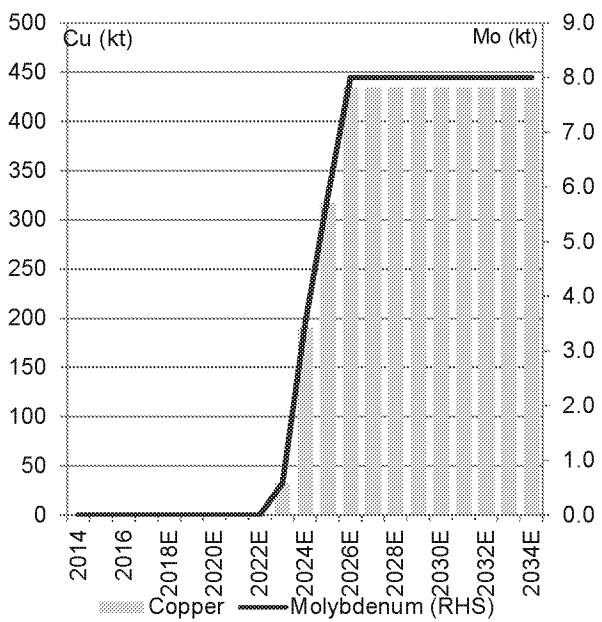
Exhibit 109: El Teniente NNM

El Teniente NNM	Chile	407 ktpa	US$5,100 mn	13% IRR

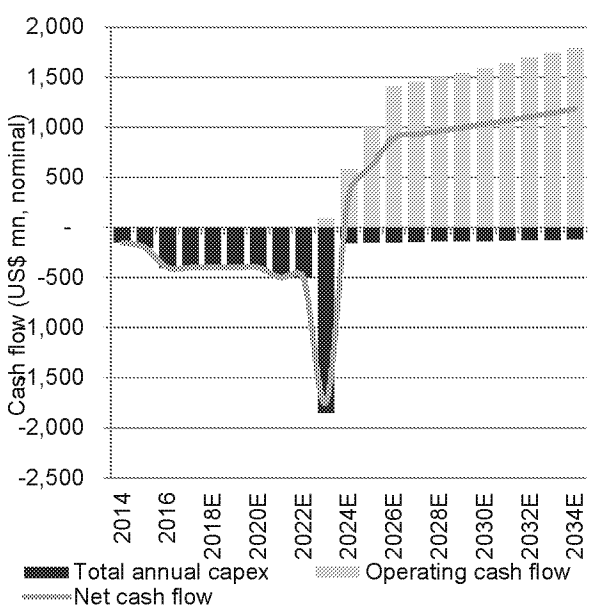
The El Teniente mine is located in Chile, about 150 km south of Santiago, and is the world's largest underground copper mine. The operation is wholly owned by Codelco. By the beginning of 2018 the El Teniente Division was facing short and medium term significant copper production challenges - copper production in 2017 was down from 475Kt (in 2016) to 464Kt. This is due to both copper grades going down and the depletion of some of the current exploitation areas. To address this, the company is working on both the development of the NNM (Nuevo Nivel Mina) that to Dec 2017 had an advance of 44.6% and the ramp up is expected for 2023 and the development of other mines/projects. To offset the lower head grades, the Colon concentrator could be marginally expanded to 143.5kt/d ore. The NNM project is not an expansion programme, rather it is a medium term structural project intended to prolong production at El Teniente for an additional 50 years, allowing the Division to maintain copper production of around 400kt/a. We believe that risks are skewed to the downside on the mine transitioning smoothly on the guided timeline. In July Codleco approved a US$2bn investment and revised capex for the project to US$5bn from US$3bn prior. First ore extraction is expected for 2023 including 35t/d of copper, rising to 140t/d as the mine becomes fully operational.



Production profile



Cash flow chart



Economics summary

Internal rate of return	13%
NPV (including sunk costs)	US$3,497
NPV (2018+)	US$4,720
Cu required @ 15%	US$7,460 /t
Capex	US$5,100 mn
Capex / t Cu production	US$12,530
Capex / t Cu equ. production	US$11,904
Project type	Brownfield
Project status	Construction
Ore reserves / resources	1,583 mt
Copper grade	0.68% Cu
Contained copper	10,764 kt
Commissioning	2023
Peak copper production	434 ktpa
Average LOM production	407 ktpa
Life of mine	28+
Gross unit cost	US$3,974 /t
Net unit cost (C1)	US$3,627 /t

Source: Company data, Goldman Sachs Global Investment Research

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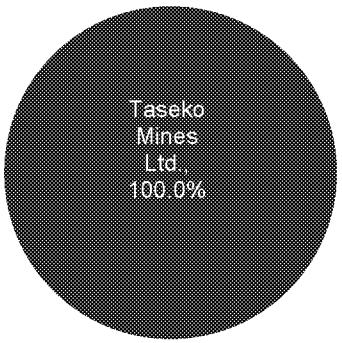
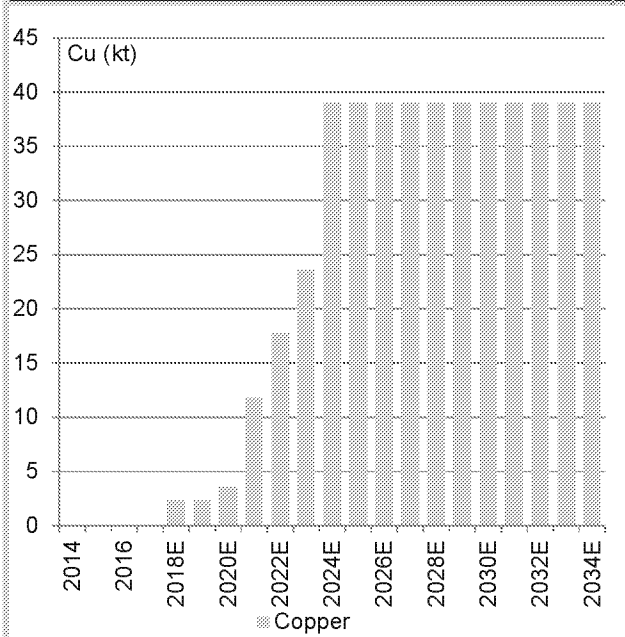
Exhibit 110: Florence Copper

Florence Copper	USA	33 ktpa	US$220 mn	32% IRR

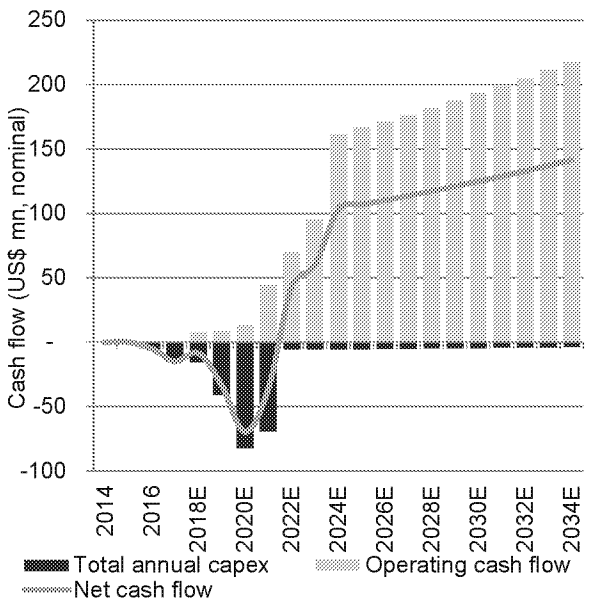
Florence Copper is a small copper project fully owned by Taseko Mines located in Phoenix USA. In September 2017, the company announced that it was moving forward with the construction of the Production Test Facility ("PTF") for the Florence Copper Project. The SX/EW plant and the associated wellfield, comprised of 24 production, monitoring, observation and point of compliance wells, will be built for approximately US$25 mn. The project is on-time and on budget with expenditures in the first quarter being approximately CAD$14.3mn or US$10.8 mn. The capex is guided to be c. US$210mn (we add US$20mn - inflation expectations). At full production the mine will produce c. 40ktpa of copper over a minelife of c. 20 years. The project has met every requirement by both the state and federal governments. The company forecasts that the project should start commercial production by 2Q18 and reach full production by FY20.



Production profile



Cash flow chart



Economics summary

Internal rate of return	32%
NPV (including sunk costs)	US$885
NPV (2018+)	US$905
Cu required @ 10%	US$4,870 /t
Capex	US$220 mn
Capex / t Cu production	US$6,576
Capex / t Cu equ. production	US$6,576
Project type	Greenfield
Project status	Construction
Ore reserves / resources	345 mt
Copper grade	0.36% Cu
Contained copper	1,242 kt
Commissioning	2018
Peak copper production	39 ktpa
Average LOM production	33 ktpa
Life of mine	21
Gross unit cost	US$2,729 /t
Net unit cost (C1)	US$2,729 /t

Source: Company data, Goldman Sachs Global Investment Research

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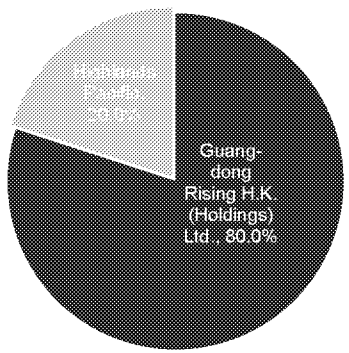
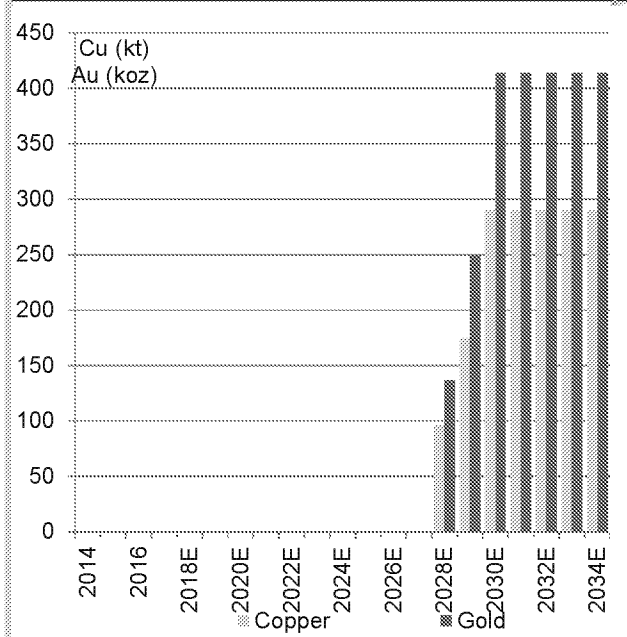
Exhibit 111: Frieda River

Frieda River	PNG	167 ktpa	US$3,800 mn	19% IRR

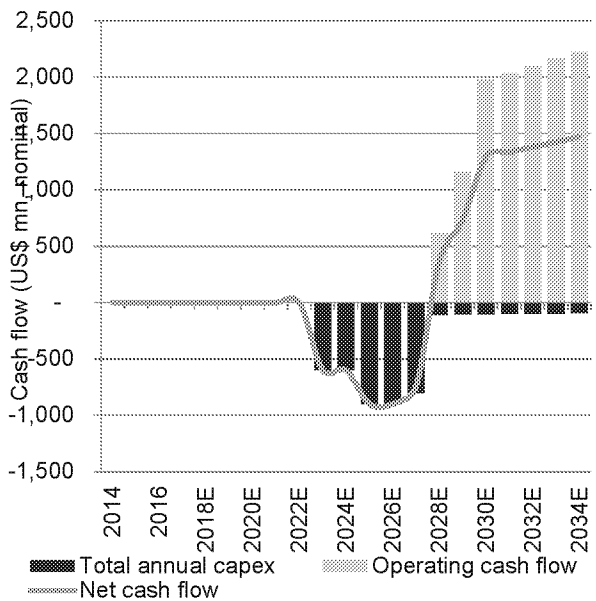
The Frieda River mine is a greenfield copper project located in north-west Papua New Guinea, owned 80% by Guangdon Rising Asset Management and 20% by Highlands Pacific. In May 2016, the feasibility study for the project was completed, and subsequently amended in April 2017. The 2017 feasibility study update envisages an open pit mine and a conventional processing plant with throughout of 40 mtpa. In August 2018 Highlands released a project update with an altered project scope to integrate the Government of PNG's development strategy plan. The revised mine scope supports a mine life in excess of 30 years by leveraging thrid party shared-use infrastructure. It envisages logistics and infrastructure connecting the open-pit mine to the Vanimo Ocean Port with a concentional flotation process plant treating over 40mtpa of ore. A 320 km buried pipeline will transport ore to the port. Peak concentrate production is expected at 290kt copper and 360koz gold. PanAust expects to complete the feasibility study and EIS by December quarter 2018. Hydroelcetric power will help PMG meet its target of 100% renewable enrgy supply by 2050. Given the latest developments, we believe that our previous timeline of capex start by 2021 and first production by 2025 is a bit too optimistic. We delay capex start assumption by 2 years and consequently our production start also gets delayed.



Production profile



Cash flow chart



Economics summary

Internal rate of return	19%
NPV (including sunk costs)	US$2,361
NPV (2018+)	US$2,361
Cu required @ 25%	US$8,499 /t
Capex	US$3,800 mn
Capex / t Cu production	US$22,782
Capex / t Cu equ. production	US$17,861
Project type	Greenfield
Project status	Permitting
Ore reserves / resources	686 mt
Copper grade	0.50% Cu
Contained copper	3,430 kt
Commissioning	2027
Peak copper production	290 ktpa
Average LOM production	167 ktpa
Life of mine	17
Gross unit cost	US$3,227 /t
Net unit cost (C1)	US$1,409 /t

Source: Company data, Goldman Sachs Global Investment Research

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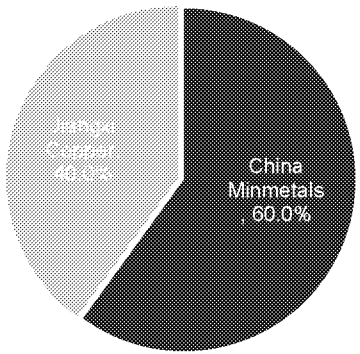
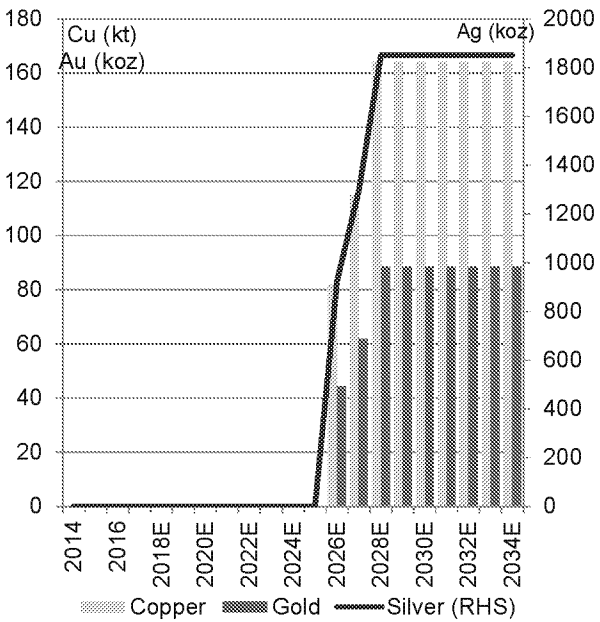
Exhibit 112: Galeno

Galeno	Peru	157 ktpa	US$2,700 mn	15% IRR

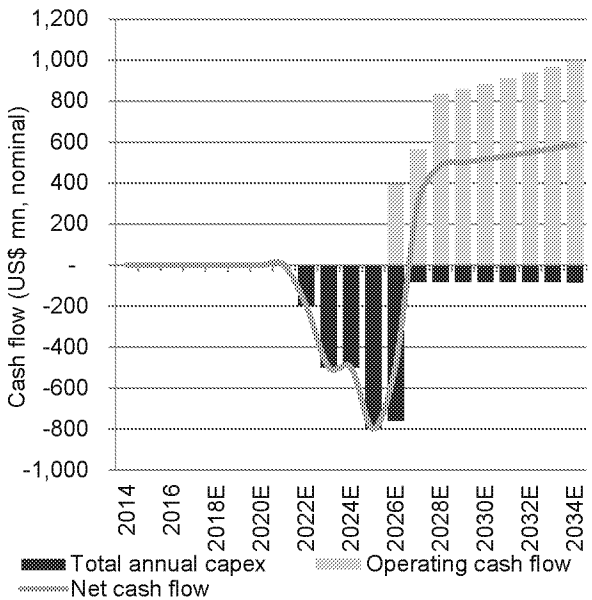
The Galeno deposit is a greenfield copper project located in the Yanacocha mining district of northern Peru, with gold as a by-product. Following the purchase of Northern Peru Copper (NPC) by China Minmetals, the ownership of the mine is shared between Jiangxi Copper (40%) and Minmetals (60%). Following the acquisition, Minmetals pledged to invest US$2.5 bn in the project. The company's capex estimate has since been revised upwards to US$3.8-3.9 bn with the mine initially scheduled to start production in 2017 (which includes sustaining capex) . Given the JV partners' ability to commit capital, the main risk for the project, in its current state, is delays in obtaining the necessary permits. The project has faced opposition from local communities which has seen the timeline move backwards. Despite Peru's willingness to see copper projects greenlit, there has been very limited newsflow on this project in particular, with the local communities continuing to oppose the construction of the mine. As such we don't see the mine coming to production before 2026/27.



Production profile



Cash flow chart



Economics summary

Internal rate of return	15%
NPV (including sunk costs)	US$1,252
NPV (2018+)	US$1,252
Cu required @ 15%	US$6,471 /t
Capex	US$2,700 mn
Capex / t Cu production	US$17,161
Capex / t Cu equ. production	US$14,288
Project type	Greenfield
Project status	Feasibility
Ore reserves / resources	661 mt
Copper grade	0.50% Cu
Contained copper	3,305 kt
Commissioning	2026
Peak copper production	164 ktpa
Average LOM production	157 ktpa
Life of mine	19
Gross unit cost	US$3,747 /t
Net unit cost (C1)	US$2,420 /t

Source: Company data, Goldman Sachs Global Investment Research

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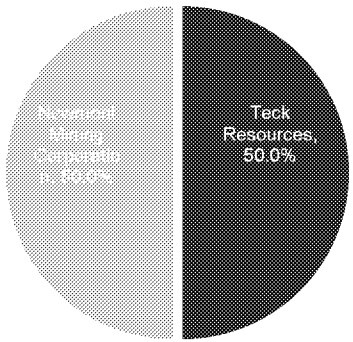
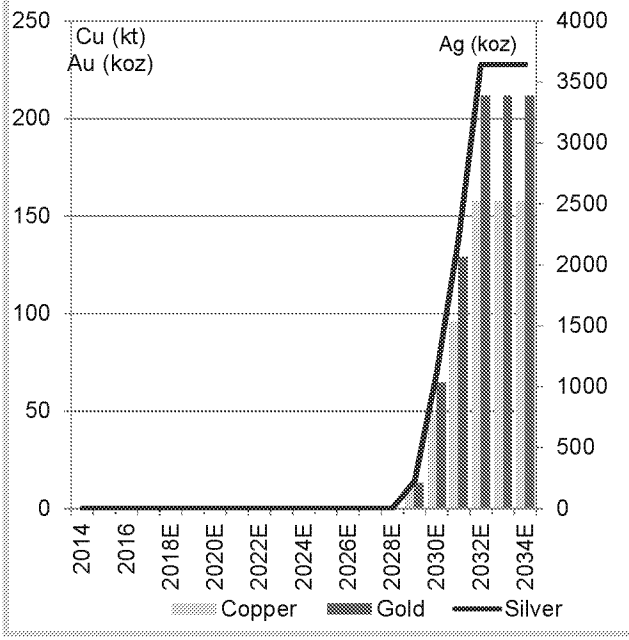
Exhibit 113: Galore Creek

Galore Creek	Canada	142 ktpa	US$5,460 mn	8% IRR

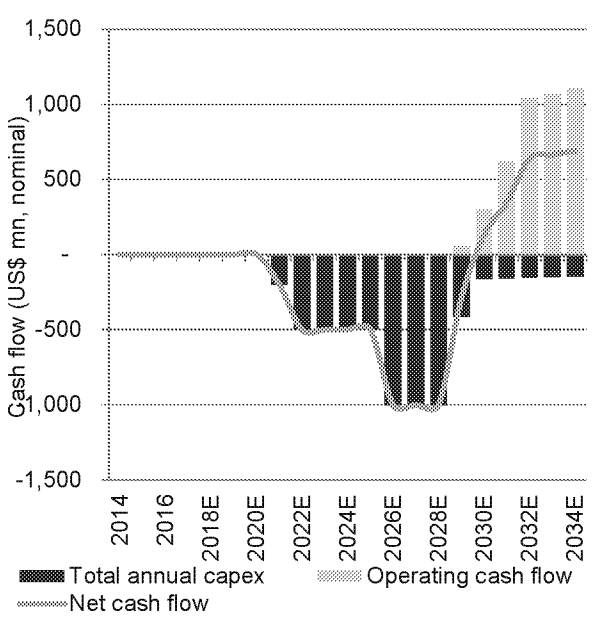
Galore Creek is a copper-gold-silver asset located in Tahltan nation in northwestern British Colombia, Canada. The project is owned by Teck Resources and Newmont Mining Company (following Novagold's sale of its 50% stake in the project in August 2018)- both of which own 50% of the project. According to the 2011 technical report, the mine has a significant resoure base of 4mn tonnes of copper, 8mn oz of gold and 136mn oz of silver. The capex guided to in the 2011 technical report was US$5.1bn (we escalate it by c. US$300mn) and the company expects production to stabalise at around 180Kt of copper, 190Koz of gold and 3.2Moz of silver. There has been limited newsflow on the project recently and given Teck is prioritising other projects in its portfolio whilst our balance sheet analysis suggests Newmont Mining Corporation may not have have sufficient funds to build the project on its own, we believe that the likelihood that the project comes online in the near future is slim. As such, we expect the first capex to be spent in 2021 with first production coming online in 2029. The probability of this project coming online is low, in our view.



Production profile



Cash flow chart



Economics summary

Internal rate of return	8%
NPV (including sunk costs)	-US$169
NPV (2018+)	-US$169
Cu required @ 10%	US$4,870 /t
Capex	US$5,460 mn
Capex / t Cu production	US$38,551
Capex / t Cu equ. production	US$29,614
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	528 mt
Copper grade	0.59% Cu
Contained copper	3,089 kt
Commissioning	2029
Peak copper production	158 ktpa
Average LOM production	142 ktpa
Life of mine	18
Gross unit cost	US$3,970 /t
Net unit cost (C1)	US$1,840 /t

Source: Company data, Goldman Sachs Global Investment Research

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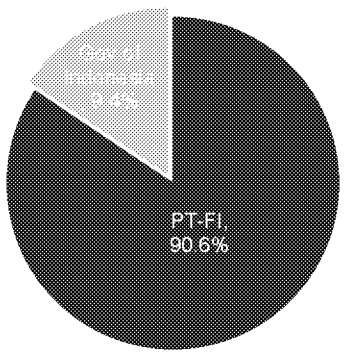
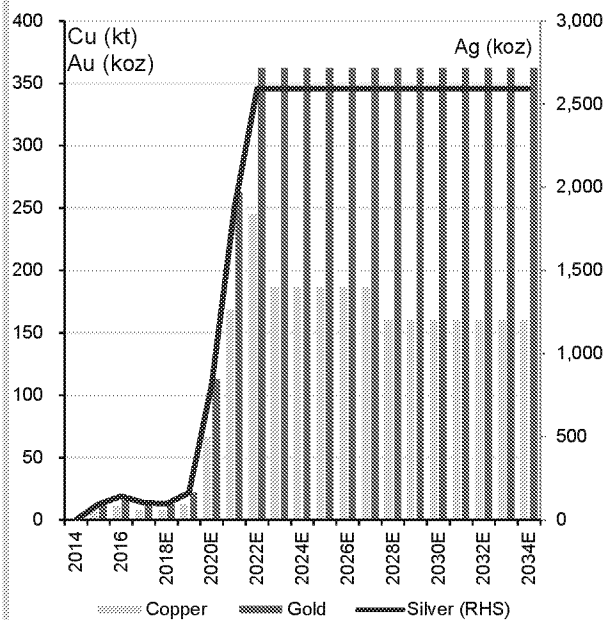
Exhibit 114: Grasberg DMLZ

Grasberg DMLZ	Indonesia	125 ktpa	US$3,200 mn	13% IRR

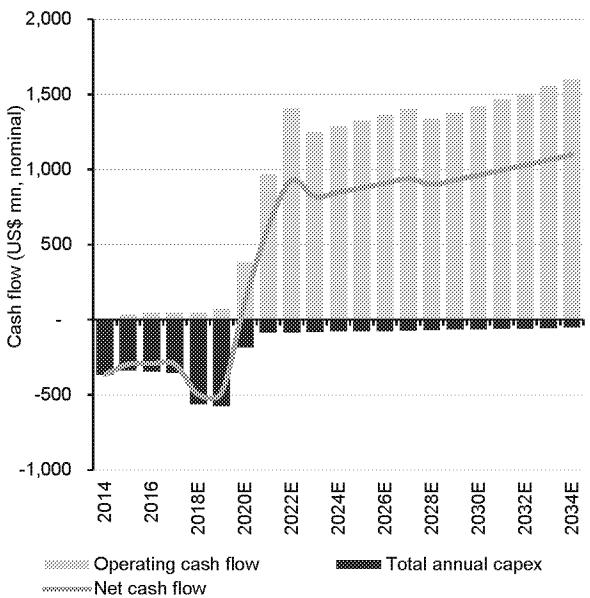
The Grasberg mine is located in the highlands of the Sudirman Mountain Range in the province of Papua, Indonesia. The mine is operated under a 1995 JV between PT Freeport Indonesia (PT-FI), the operator, and Rio Tinto under which Rio Tinto receives 40% of production above specific levels until 2022 and 40% of all production after 2022. PT-FI is owned 90.64% by Freeport and 9.36% by the Government of Indonesia. Production from the open pit is set to come to an end in 2018, which is guided to be offset by the underground mine development. The Deep Mill Level Zone (DMLZ) Ore body lies below the Deep Ore Zone underground mine. Freeport expects the mine to reach its nameplate capacity of 80 ktpd in 2022. During 2018 the mine plan was revised and block cave mining activities are expected to begin at DMLZ in mid-2019. In 2016, the mine average throughput was 4.4 ktpd. Freeport expects the capital costs of the project to be in the order of US$3.2 bn. US$1.8bn aggregate project costs had been incurred through December 31, 2016. Given the latest uncertainties over exporting regulations and requirements by the Indonesian Government, in our view a suspension of the project is possible which could delay production. However, and in line with our view on the Block Cave project, we assume production to ramp-up according to schedule.



Production profile



Cash flow chart



Economics summary

Internal rate of return	13%
NPV (including sunk costs)	US$2,998
NPV (2018+)	US$5,346
Cu required @ 15%	US$7,180 /t
Capex	US$3,200 mn
Capex / t Cu production	US$25,562
Capex / t Cu equ. production	US$18,411
Project type	Brownfield
Project status	Construction
Ore reserves / resources	437 mt
Copper grade	0.92% Cu
Contained copper	4,009 kt
Commissioning	2015
Peak copper production	245 ktpa
Average LOM production	125 ktpa
Life of mine	21
Gross unit cost	US$3,179 /t
Net unit cost (C1)	US$453 /t

Source: Company data, Goldman Sachs Global Investment Research

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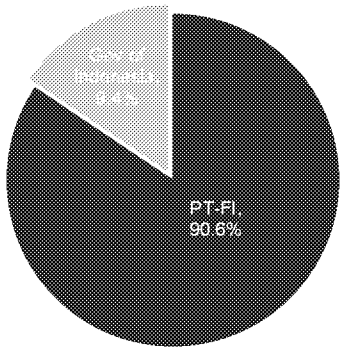
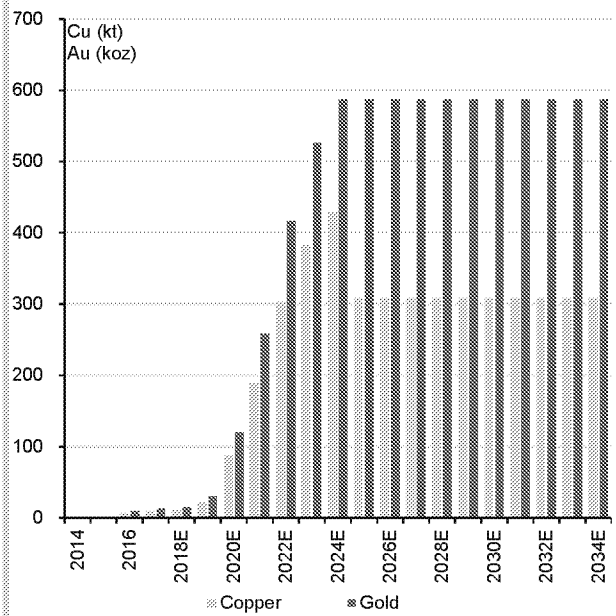
Exhibit 115: Grasberg BC

Grasberg BC	Indonesia	246 ktpa	US$6,700 mn	13% IRR

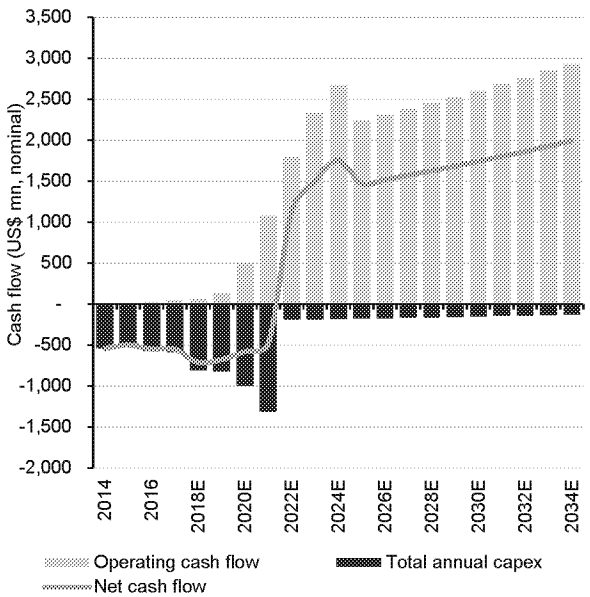
The Grasberg mine is located in the highlands of the Sudirman Mountain Range in the province of Papua, Indonesia (western half of the island of New Guinea). The mine is owned by Freeport (90.64%) and the Government of Indonesia (9.36%). The mine is operated under a 1995 JV between PT Freeport Indonesia (PT-FI), the operator, and Rio Tinto under which Rio Tinto receives 40% of production above specific levels until 2022 and 40% of all production after 2022. Production from the Grasberg Block Cave mine is expected to commence in 1H19 and gradually ramp up to full capacity by 2022, following the end of mining of the Grasberg open pit. In 2016, the mine average throughput was 2.7 ktpd. Freeport expects the capital costs of the project to be in the order of c.US$6.0 bn, we assume inflation (US$2.8 bn has been incurred by the end of December 2016). Current reserves total 964 mn tonnes at a grade of 1.03% copper and 0.78 g/t gold (c.45% of Freeport's reserves in Indonesia). Freeport expects the project to process 160 ktpd of ore at full capacity, producing c.470 ktpa of copper. However, given the latest uncertainties over long-term mining rights, delays to the project could be possible, in our view, while latest company guidance still implies production to start in 1H19.



Production profile



Cash flow chart



Economics summary

Internal rate of return	13%
NPV (including sunk costs)	US$5,817
NPV (2018+)	US$9,643
Cu required @ 15%	US$7,514 /t
Capex	US$6,700 mn
Capex / t Cu production	US$27,245
Capex / t Cu equ. production	US$20,363
Project type	Brownfield
Project status	Construction
Ore reserves / resources	963 mt
Copper grade	1.01% Cu
Contained copper	9,760 kt
Commissioning	2016
Peak copper production	429 ktpa
Average LOM production	246 ktpa
Life of mine	24
Gross unit cost	US$2,725 /t
Net unit cost (C1)	US$306 /t

Source: Company data, Goldman Sachs Global Investment Research

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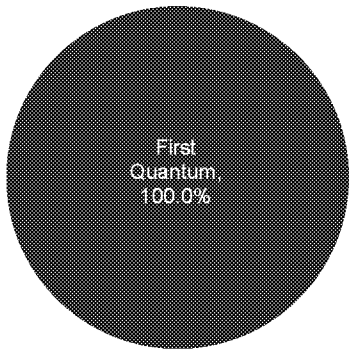
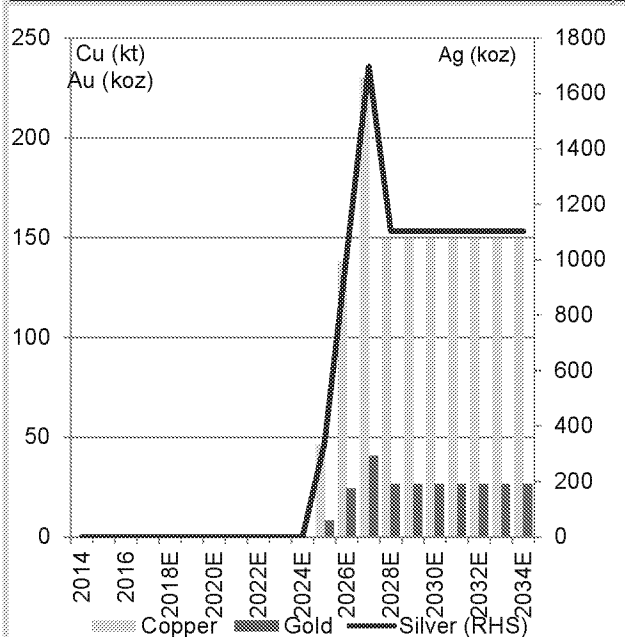
Exhibit 116: Haquira

Haquira	Peru	148 ktpa	US$2,500 mn	14% IRR

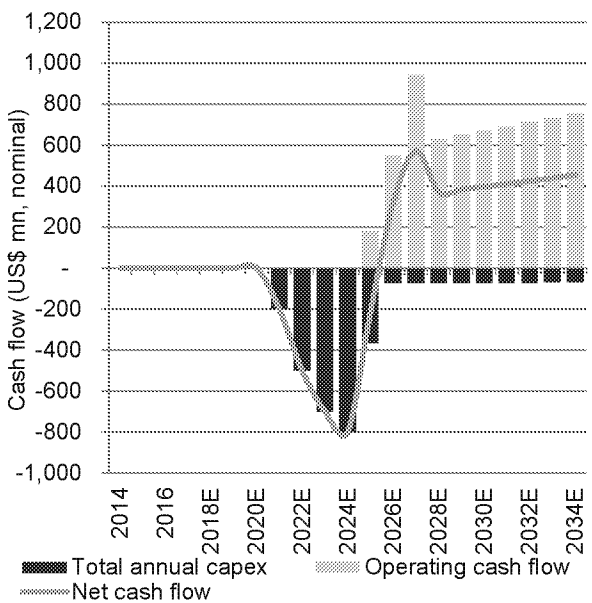
First Quantum owns 100% of the Haquira project through its acquisition of Antares Minerals in December 2010 for US$450 mn. The Haquira mine benefits from having near-surface secondary copper conducive to SX-EW leaching and also a higher grade underlying ore body that can be mineralised using more conventional processing methods. Antares previously estimated capex for the project to total US$2.06 bn; however, we believe there is upside to this estimate. This project was deprioritised, reflecting ongoing permitting delays and the primary focus to deliver the Sentinel and Smelter projects in 2014/15, with Cobre Panama to follow in 2017/18. Exploration activities at Haquira have been put on hold while the company concentrates on the community and environmental aspects of the project development. There has been little newsflow on the project and given that First Quantum is focused on the ramp-up of Cobre Panama - we believe that there is little chance that any progress is made on the project before 2020. We forecast first capex in 2021 with first production in 2025.



Production profile



Cash flow chart



Economics summary

Internal rate of return	14%
NPV (including sunk costs)	US$1,211
NPV (2018+)	US$1,211
Cu required @ 15%	US$6,906 /t
Capex	US$2,500 mn
Capex / t Cu production	US$16,882
Capex / t Cu equ. production	US$15,275
Project type	Greenfield
Project status	Scoping
Ore reserves / resources	569 mt
Copper grade	0.56% Cu
Contained copper	3,186 kt
Commissioning	2025
Peak copper production	230 ktpa
Average LOM production	148 ktpa
Life of mine	25
Gross unit cost	US$3,747 /t
Net unit cost (C1)	US$3,053 /t

Source: Company data, Goldman Sachs Global Investment Research

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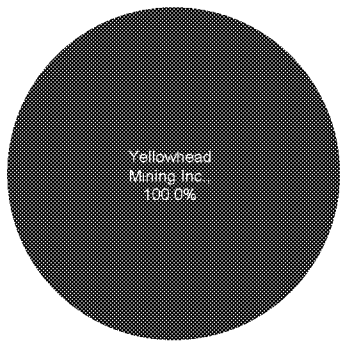
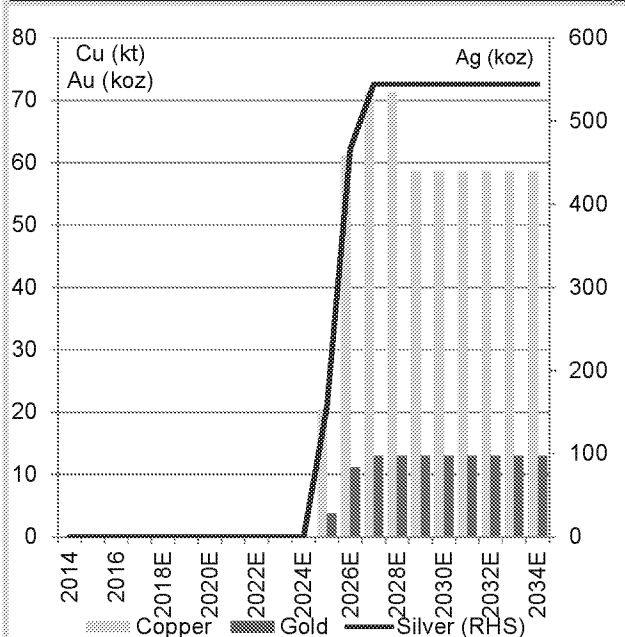
Exhibit 117: Harper Creek

Harper Creek	Canada	54 ktpa	US$960 mn	16% IRR

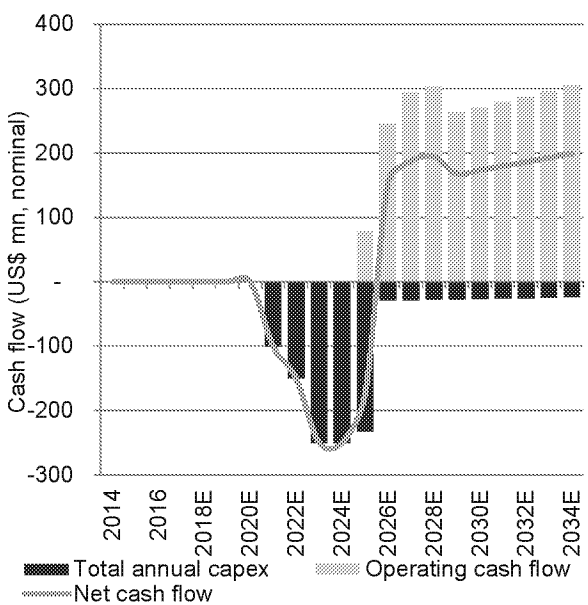
Harper Creek, 100%-owned by Yellowhead Mining Inc, is a proposed 70 ktpd throughput copper mine with a 28-year mine life located in British Columbia, Canada. The company submitted the Environmental Assessment application to the British Columbia Environmental Assessment Office on November 10, 2014. However, on October 1, 2015, the project was put on care and maintenance. The project has a four-year development period, with the first two years focused on environmental and construction permitting and the last two years were dedicated to construction. There has been some newsflow more recently - in mid-2017 the company engaged consultants to determine if the EA Application process could be successfully completed. In April 2018 the company had discussions with the BC EAO and in May 2018 the company requested an extension to April 15, 2019 to complete the environmental permitting. In July 2018 the BC Environment Ministry rejected the company's request for an extension. In August 2018 the company completed a rights offering to pay existing payables and provide working capital for the next 12 months. If the environmental permitting is not complete by April 2019, the entire EA application process will have to be redone. Given the lack of funding and other issues, we delay the start of the project (vs. our previous estimate) by 2 years to 2025.



Production profile



Cash flow chart



Economics summary

Internal rate of return	16%
NPV (including sunk costs)	US$613
NPV (2018+)	US$613
Cu required @ 10%	US$5,329 /t
Capex	US$960 mn
Capex / t Cu production	US$17,878
Capex / t Cu equ. production	US$16,767
Project type	Greenfield
Project status	Permitting
Ore reserves / resources	716 mt
Copper grade	0.26% Cu
Contained copper	1,862 kt
Commissioning	2025
Peak copper production	71 ktpa
Average LOM production	54 ktpa
Life of mine	28
Gross unit cost	US$3,406 /t
Net unit cost (C1)	US$3,036 /t

Source: Company data, Goldman Sachs Global Investment Research

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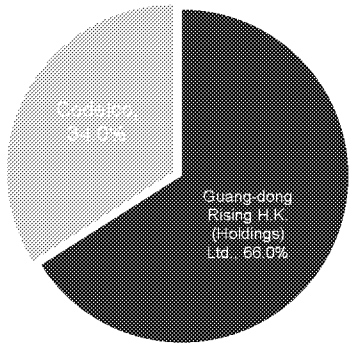
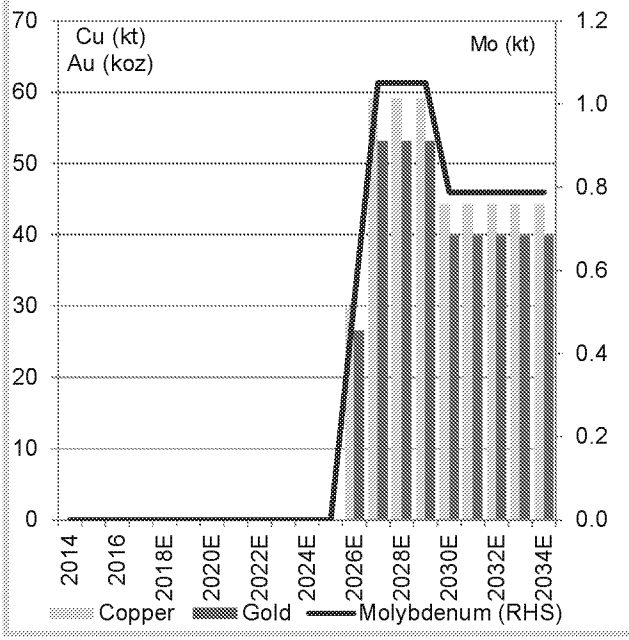
Exhibit 118: Inca de Oro

Inca de Oro	Chile	46 ktpa	US$1,000 mn	11% IRR

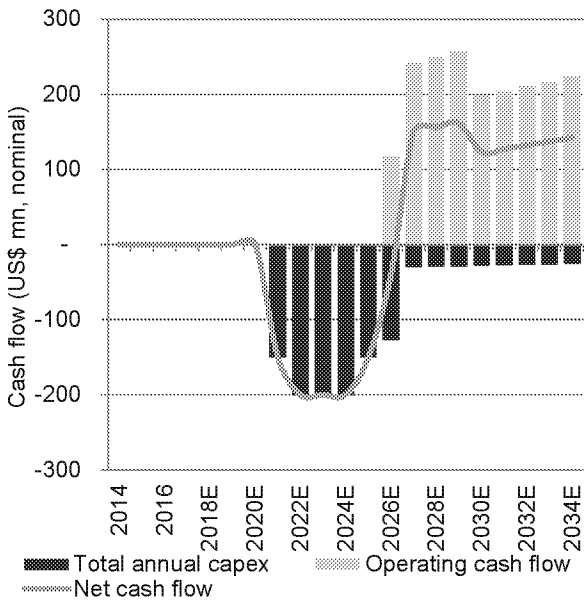
The Inca de Oro mine is located in northern Chile and is owned by Guangdong Rising (66%) and Codelco (34%). A pre-feasibility study demonstrated there was potential for an operation producing 50 ktpa of copper and 40 koz of gold over a 10+ year mine life. Guangdong and its JV partner announced in mid-2012 that they are unlikely to proceed with the development of the mine at a US$3.00 /lb copper price. In June 2015, PanAust was acquired by Guangdong Rising H.K. (Holdings) Ltd. The feasibility study for the project is based on average output of 50 ktpa of copper (60 ktpa in the first five years) and 40 koz of gold, with total capex of US$800 mn for mine and infrastructure and an additional US$107 mn for pre-stripping. A number of commercial matters that could have a material impact on the viability of the project are yet to be resolved with the stakeholders and no activities on the site are planned over the near term. Guangdong has said it is evaluating offers to sell its stake in the mine. Given the uncertainty associated with the project coupled with lack of recent exploration activities we delay the start of the project by 2 years vs our prior estimate and now assume a start in 2026. The probability of the project coming online is low, in our view.



Production profile



Cash flow chart



Economics summary

Internal rate of return	11%
NPV (including sunk costs)	US$220
NPV (2018+)	US$220
Cu required @ 15%	US$7,835 /t
Capex	US$1,000 mn
Capex / t Cu production	US$21,914
Capex / t Cu equ. production	US$17,903
Project type	Greenfield
Project status	Feasibility
Ore reserves / resources	259 mt
Copper grade	0.46% Cu
Contained copper	1,191 kt
Commissioning	2026
Peak copper production	59 ktpa
Average LOM production	46 ktpa
Life of mine	23
Gross unit cost	US$4,542 /t
Net unit cost (C1)	US$3,063 /t

Source: Company data, Goldman Sachs Global Investment Research

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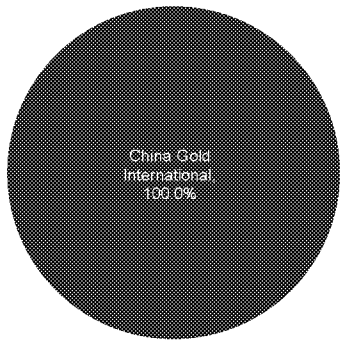
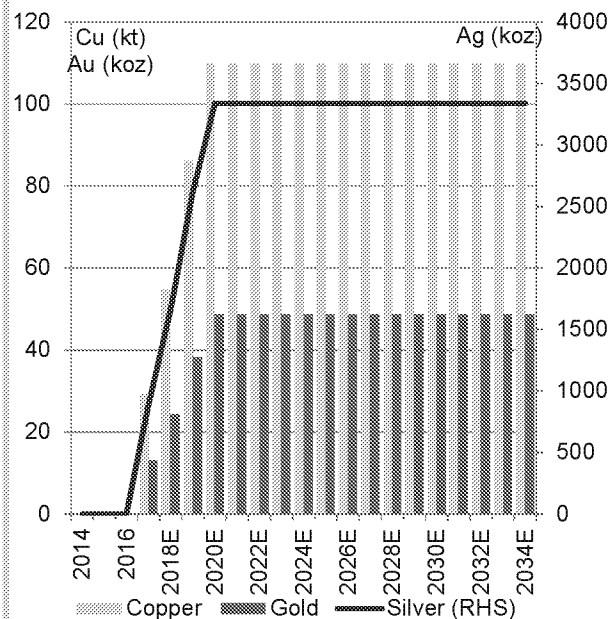
Exhibit 119: Jiama Phase II

Jiama Phase II	China	104 ktpa	US$736 mn	29% IRR

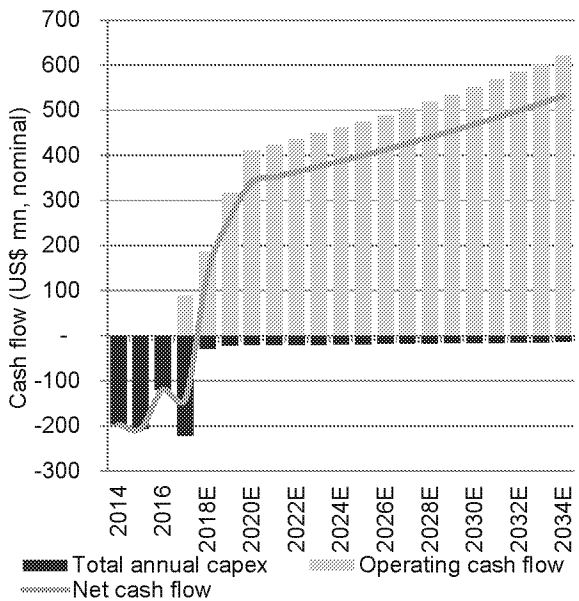
The Jiama Copper Project, owned by China Gold International Resources, is located in the Tibetan Autonomous Region of China. It is a polymetallic deposit containing copper, gold, silver, molybdenum, zinc and lead. The mining is done both on the surface (open-pit) and underground. The project has three types of copper-polymetallic mineralisation viz. Skarn, Hornfels and Porphyry. Phase I of the project started commercial production in September 2010 with a throughput of 6 ktpd. The company has reached commercial production at the mine's Phase II, Series I expansion which has seen processing capacity quardruple. The company continues to advance the mine's phase II Series II expansion - note that this was iced in 2015/16 given the low commodity prices. Construction of Series II is now complete and development and production testing is currently underway. On July 3 China Gold reported that it had achieved first commercial production for the series II expansion ahead of schedule. The company continues to ramp up oprations at Series II to full design capacity of 22kt/d.



Production profile



Cash flow chart



Economics summary

Internal rate of return	29%
NPV (including sunk costs)	US$3,945
NPV (2018+)	US$4,664
Cu required @ 15%	US$4,380 /t
Capex	US$736 mn
Capex / t Cu production	US$7,050
Capex / t Cu equ. production	US$5,495
Project type	Brownfield
Project status	Producing
Ore reserves / resources	429 mt
Copper grade	0.61% Cu
Contained copper	2,618 kt
Commissioning	2017
Peak copper production	110 ktpa
Average LOM production	104 ktpa
Life of mine	30
Gross unit cost	US$4,542 /t
Net unit cost (C1)	US$2,672 /t

Source: Company data, Goldman Sachs Global Investment Research

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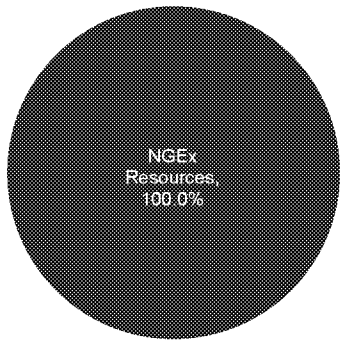
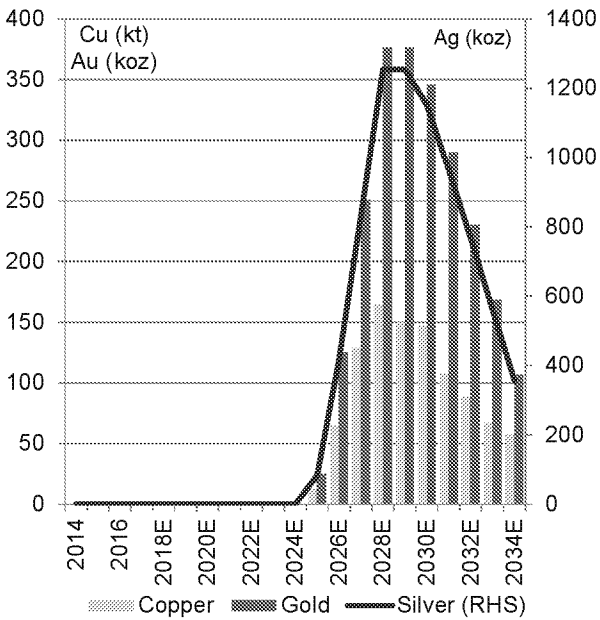
Exhibit 120: Josemaria

Josemaria	Argentina	130 ktpa	US$2,000 mn	11% IRR

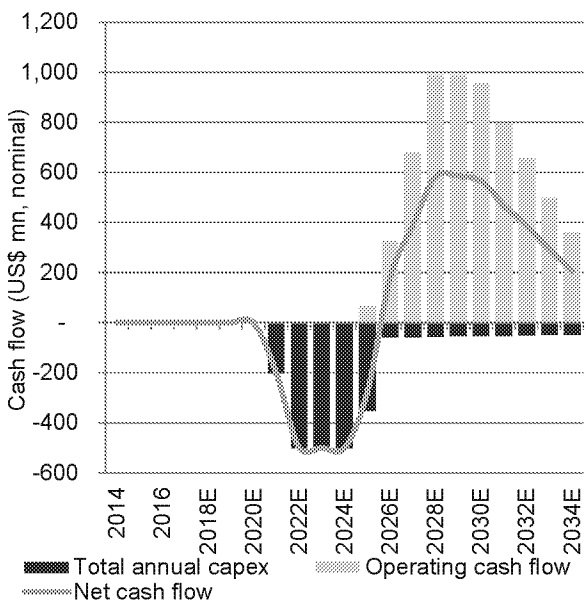
Josemaria, located in San Juan, Argentina, is a greenfield open pit copper-gold-silver mine. It is owned by NGEx Resources - the company acquired the 40% stake from JOGMEC in Nov. 2017. NGEx published a Preliminary Economic Assessment (PEA) in April 2016 for its Project Constellation, which combines Josemaria in Argentina followed by a block cave underground mine, Los Helados in Chile. The two projects are c.10 km apart and material from both deposits will be processed at a centralised facility. The combined LOM of Project Constellation is 48 years while that of Josemaria is 13 years, with average annual production of 130 ktpa of copper. More recently the company has said that it is looking to optimize and de-risk the project and explore options to advance each deposit towards eventual development, including active engagement with potential development partners or acquirers. The company is planning to conduct a pre-feasibility study on a standalone development scenario for Josemaria focusing on a simple open pit scenario with a shallow, high-grade starter pit. The company plans to initiate a pre-feasibility study on this concept, which it expects to be completed in 1Q19.



Production profile



Cash flow chart



Economics summary

Internal rate of return	11%
NPV (including sunk costs)	US$318
NPV (2018+)	US$318
Cu required @ 25%	US$10,971 /t
Capex	US$2,000 mn
Capex / t Cu production	US$15,385
Capex / t Cu equ. production	US$11,359
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	1,066 mt
Copper grade	0.31% Cu
Contained copper	3,305 kt
Commissioning	2025
Peak copper production	164 ktpa
Average LOM production	130 ktpa
Life of mine	26+
Gross unit cost	US$4,769 /t
Net unit cost (C1)	US$2,174 /t

Source: Company data, Goldman Sachs Global Investment Research

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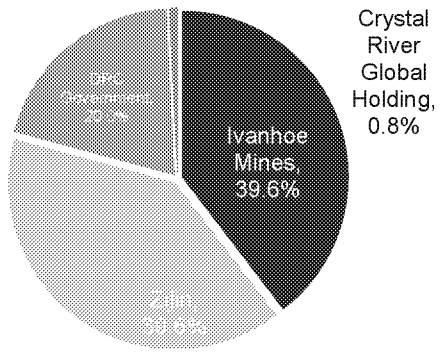
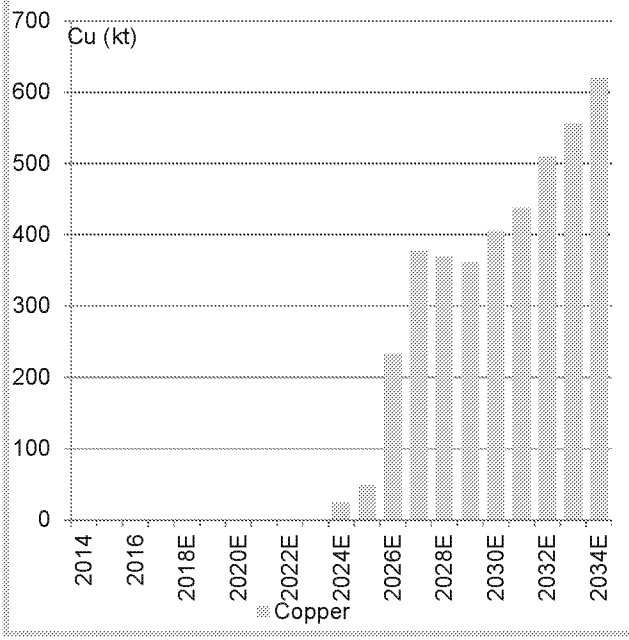
Exhibit 121: Kamoa-Kakula

Kamoa-Kakula	DRC	485 ktpa	US$2,500 mn	29% IRR

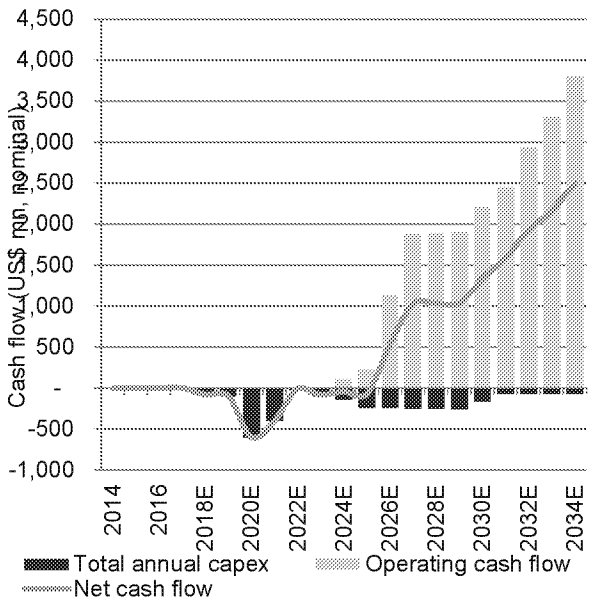
The Kamoa-Kakula deposit is located in the Central African copperbelt, approximately 25 km west of the town of Kolwezi. In November 2016, Ivanhoe and Zijin Mining signed a patnership agreement with the DRC government. The current ownership of the mine is Ivanhoe (39.6%), Zijin Mining (39.6%), DRC Government (20%) and Crystal Global River Ltd. (0.8%). In August 2012, the government granted the mining licences for the project. In May 2017, Ivanohe Mines announced that the company had completed an independently verified, updated Mineral Resource estimate for the high-grade Kakula discovery. The company recently has laid out 3 development scenarios: a) US$1.2bn plan which sees avg. copper production of 246Kt at a C1 cash cost of USc45/lb; b) A further US$1.2bn investment to expand the mine to 12mtpa (from 6mtpa) - this sees copper production rise to 690Kt; c) US$1bn investment to develop the Kansoko mine as a stand alone 6mtpa underground mine which would see copper production of c. 250Kt. Ivanhoe recently got investment from CITIC (if everything gets approved CITIC would own 20% of Ivanhoe) which we believe could expedite the process. We model the first scenario - but see the potential for further development as significant.



Production profile



Cash flow chart



Economics summary

Internal rate of return	29%
NPV (including sunk costs)	US$10,370
NPV (2018+)	US$10,370
Cu required @ 25%	US$5,650 /t
Capex	US$2,500 mn
Capex / t Cu production	US$5,152
Capex / t Cu equ. production	US$5,152
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	1,340 mt
Copper grade	2.72% Cu
Contained copper	36,448 kt
Commissioning	2024
Peak copper production	623 ktpa
Average LOM production	485 ktpa
Life of mine	27+
Gross unit cost	US$2,384 /t
Net unit cost (C1)	US$2,384 /t

Source: Company data, Goldman Sachs Global Investment Research

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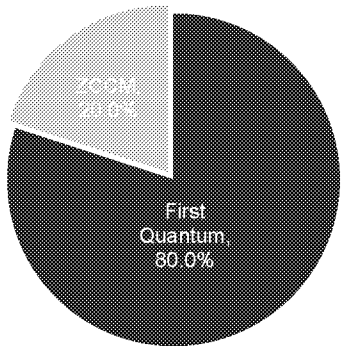
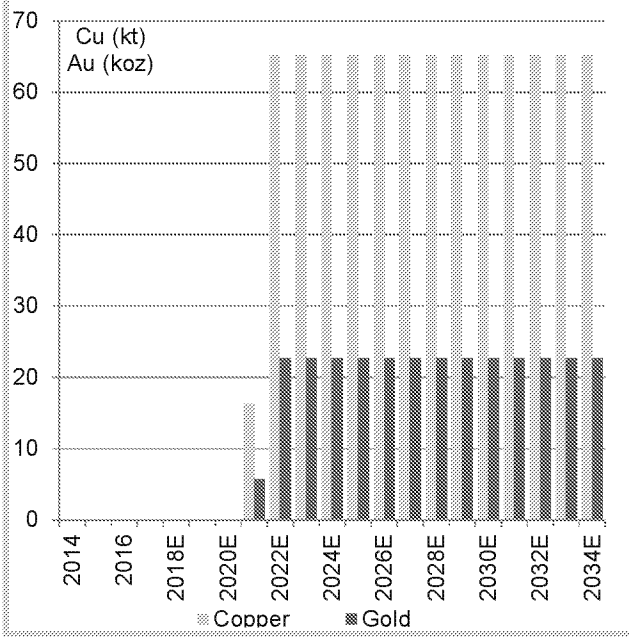
Exhibit 122: Kansanshi Sulpide

Kansanshi Sulphide	Zambia	62 ktpa	US$585 mn	21% IRR

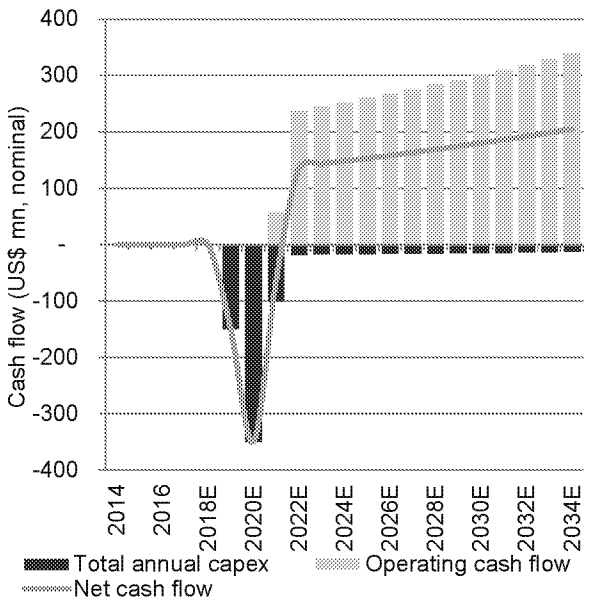
The Kansanshi mine is located in Zambia and has a shared ownership structure between First Quantum (80%) and ZCCM (20%). The sulphide expansion project is part of First Quantum's multi-stage plan for the mine to raise production to c.350-370 kt of copper (2015 253kt). The next step in the project is to commence construction of a new section of the plant capable of treating up to 25 mtpa of sulphide ore. We expect annual production from the expansion not before 2021 and to be in the range of 60-70kt of copper. The plant at Kansanshi already processes sulphide ore via a standard flotation to produce copper in concentrate. The company has guided to total capex of c.US$565 mn; we assume slight inflation given the extended period before first production. The company recently commented that it is looking to spend US$1bn in Zambia for expansion and ongoing mining projects - which we believe is a reference to this project. The project is essential in our vew as not only does it add production, it also could stem the fall in First Quantum's production, which we expect to happen in 2019/20.



Production profile



Cash flow chart



Economics summary

Internal rate of return	21%
NPV (including sunk costs)	US$553
NPV (2018+)	US$553
Cu required @ 15%	US$5,689 /t
Capex	US$585 mn
Capex / t Cu production	US$9,429
Capex / t Cu equ. production	US$8,836
Project type	Brownfield
Project status	Permitting
Ore reserves / resources	140 mt
Copper grade	0.78% Cu
Contained copper	1,092 kt
Commissioning	2021
Peak copper production	65 ktpa
Average LOM production	62 ktpa
Life of mine	15
Gross unit cost	US$3,406 /t
Net unit cost (C1)	US$2,963 /t

Source: Company data, Goldman Sachs Global Investment Research

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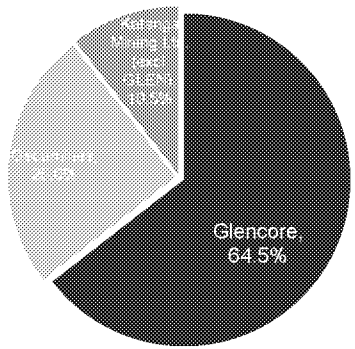
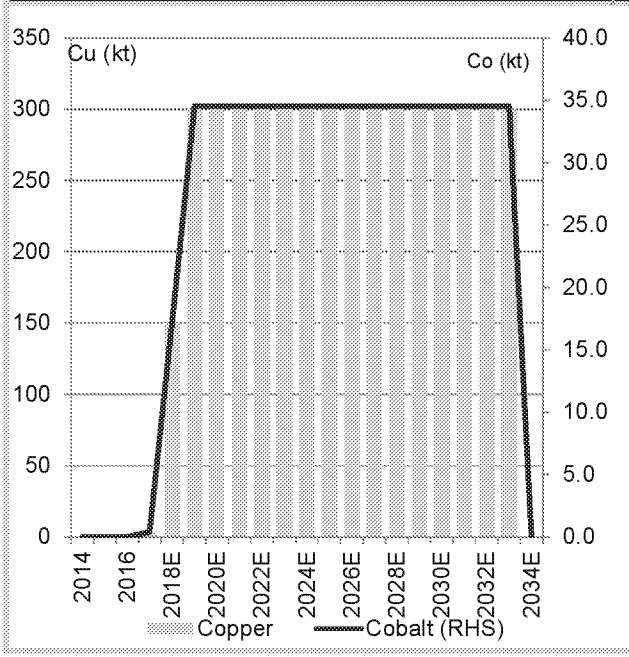
Exhibit 123: Katanga

Katanga	DRC	274 ktpa	US$1,159 mn	198% IRR

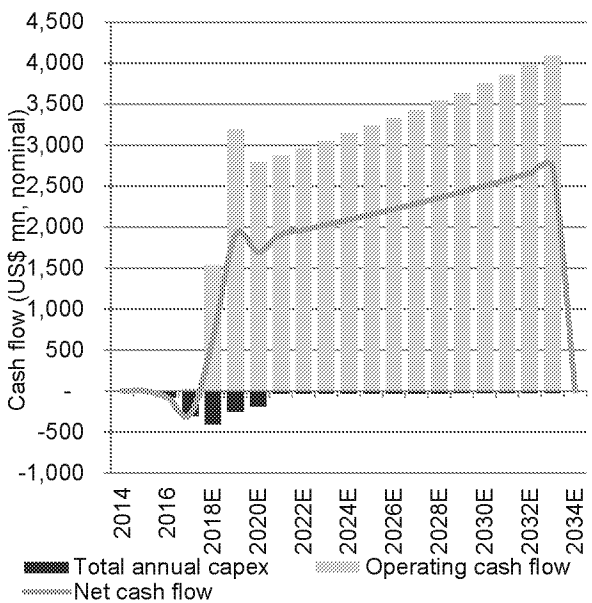
The Katanga operation is located in Democratic Republic of Congo (DRC) and has one of the world's largest contained copper in resources. The project is jointly owned by Katanga Mining Ltd. (Glencore owns 86.33% of KML) and Gecamines. Glencore decided to close the mine in September 2015 given the commodity price environment. Katanga completed its Phase 5 of expansion in December 2014 but given the power availability issues at DRC and the low copper price environment, its owners decided to convert it into a Whole Ore Leach (WOL) project, which started construction in May 2015 and is expected to be completed by 2H17. The mine has now reached commercial production and is ramping-up with the guidance for the full year 2018 being at 150Kt and 300Kt for 2019. The mine has recently faced legal and regulatory issues, including a claim from Gecamines which has now been resolved, yet some issues remain open. We still model the mine to achieve its targeted production.



Production profile



Cash flow chart



Economics summary

Internal rate of return	198%
NPV (including sunk costs)	US$17,184
NPV (2018+)	US$17,567
Cu required @ 25%	-US$1,243 /t
Capex	US$1,159 mn
Capex / t Cu production	US$4,237
Capex / t Cu equ. production	US$1,866
Project type	Brownfield
Project status	Construction
Ore reserves / resources	138 mt
Copper grade	3.51% Cu
Contained copper	4,847 kt
Commissioning	2017
Peak copper production	300 ktpa
Average LOM production	274 ktpa
Life of mine	17
Gross unit cost	US$6,211 /t
Net unit cost (C1)	-US$2,170 /t

Source: Company data, Goldman Sachs Global Investment Research

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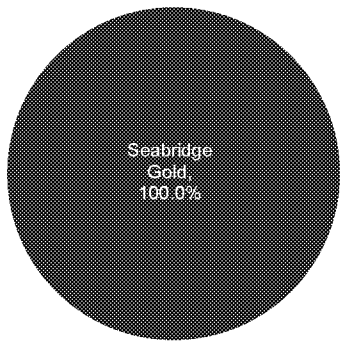
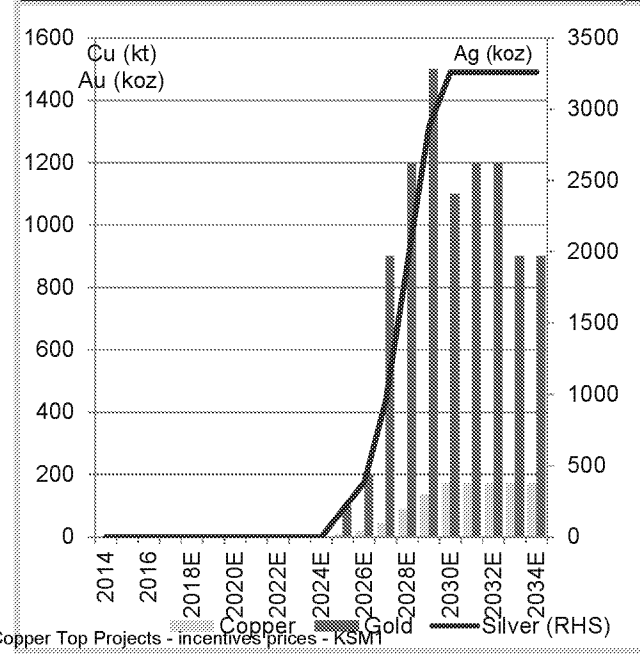
Exhibit 124: Kerr-Sulphurets-Mitchell

Kerr-Sulphurets-Mitchell	Canada	140 ktpa	US$5,800 mn	9% IRR

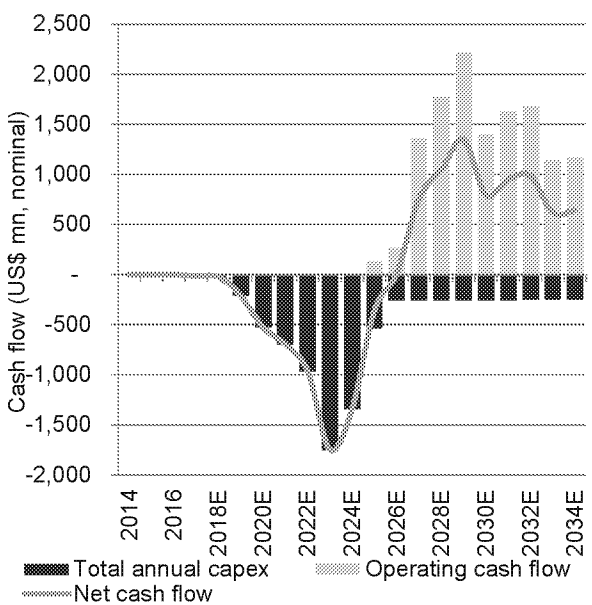
The Kerr-Sulphurets-Mitchell (KSM) project located in northern British Columbia, Canada is a combined open-pit and underground greenfield copper-gold project. The project has four mineral deposit zones: Kerr, Sulphurets, Mitchell and Iron Cap. In November 2016, Seabridge filed a Technical Report incorporating the updated pre-feasibility study and a PEA. According to this, the mine has c.2.2bn tonnes of of ore containing copper grade of 0.21%, 0.55 g/t of gold and 2.6 g/t of silver. The project envisages throughput of 170 ktpd for the first twenty years and 130ktpd for the next fifteen years and average copper and gold production being close to 130 ktpa and 600 koz over a mine life of about 50 years respectively. The first seven years are expected to produce 140 kt of copper and 1.2 mnoz of gold on average. In June 2017, the company received authorization for construction of Tailings Management Facility from the Canadian government. The company has continued to add resources to the project and has a c.US$20mn drilling programme planned for this year. However, given the amount of capex required for the project (US$5.5bn, but we assume inflation) - we believe it is unlikely that this comes online in the next few years.



Production profile



Cash flow chart



Economics summary

Internal rate of return	9%
NPV (including sunk costs)	US$496
NPV (2018+)	US$511
Cu required @ 10%	US$5,967 /t
Capex	US$5,800 mn
Capex / t Cu production	US$41,312
Capex / t Cu equ. production	US$18,852
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	2,198 mt
Copper grade	0.21% Cu
Contained copper	4,616 kt
Commissioning	2025
Peak copper production	175 ktpa
Average LOM production	140 ktpa
Life of mine	26+
Gross unit cost	US$9,083 /t
Net unit cost (C1)	-US$143 /t

Copper Top Projects - incentives prices - KSM1 6/10/2018

Source: Company data, Goldman Sachs Global Investment Research

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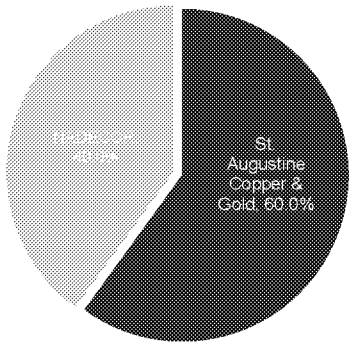
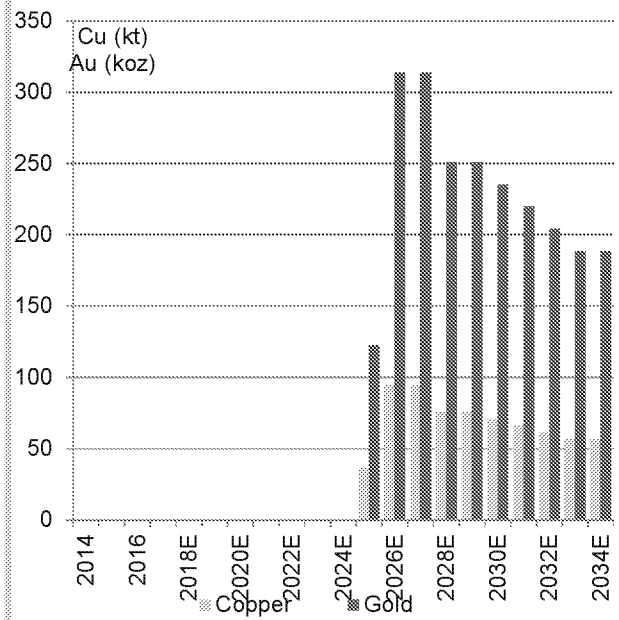
Exhibit 125: King King

King King	Philippines	61 ktpa	US$2,300 mn	12% IRR

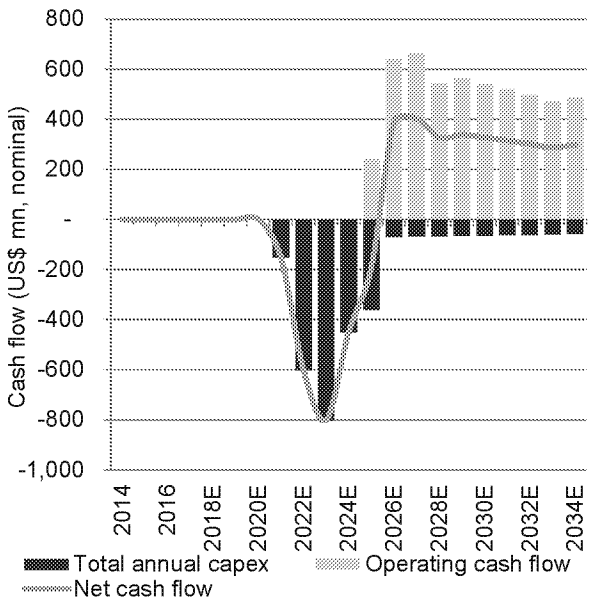
The King King project is a copper-gold project located in the Municipality of Pankutan, near Davao in the Philippines. The project is part of a Mineral Production Sharing Agreement (MPSA) between the Philippine government and Nationwide Development Corporation (NADECOR). St. Augustine Copper-Gold Ltd. (SAGCL) is responsible for the overall development of the project. The Philippines government has a 10% stake in the project through NADECOR and has the option of increasing it to 40%. A pre-feasibility study (PFS) was submitted in February 2013 and the Philippines government granted the project the Declaration of Mining Project Feasibility in January 2016. The MPSA was renewed for 25 years in August 2016. However, in 2017, the Department of Environment and Natural Resources mentioned King-King MPSA as of 75 MPSAs to have been recommended for cancellation. Given that there are considerable uncertainties surrounding the regulatory landscape and lack of any tangible funding for the project (based on company reports), we model first production from the mine in 2025, with the heap leach plant starting first followed by the concentrator and add slight capex inflation to the guided number while awaiting further details. The PFS envisages a 40 ktpd heap leach facility and a 60 ktpd concentrator with development capex of US$2.04 bn with a LOM of 23 years.



Production profile



Cash flow chart



Economics summary

Internal rate of return	12%
NPV (including sunk costs)	US$683
NPV (2018+)	US$683
Cu required @ 25%	US$12,706 /t
Capex	US$2,300 mn
Capex / t Cu production	US$37,597
Capex / t Cu equ. production	US$22,900
Project type	Greenfield
Project status	Permitting
Ore reserves / resources	618 mt
Copper grade	0.30% Cu
Contained copper	1,854 kt
Commissioning	2025
Peak copper production	94 ktpa
Average LOM production	61 ktpa
Life of mine	23
Gross unit cost	US$5,064 /t
Net unit cost (C1)	US$823 /t

Source: Company data, Goldman Sachs Global Investment Research

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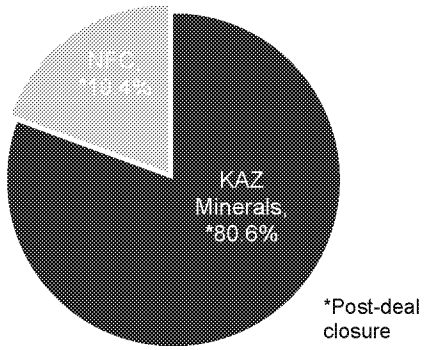
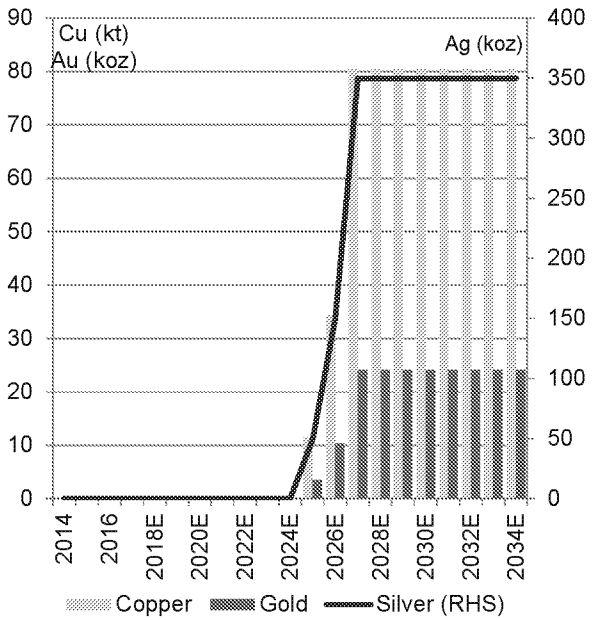
Exhibit 126: Koksay

Koksay	Kazakhstan	76 ktpa	US$1,700 mn	12% IRR

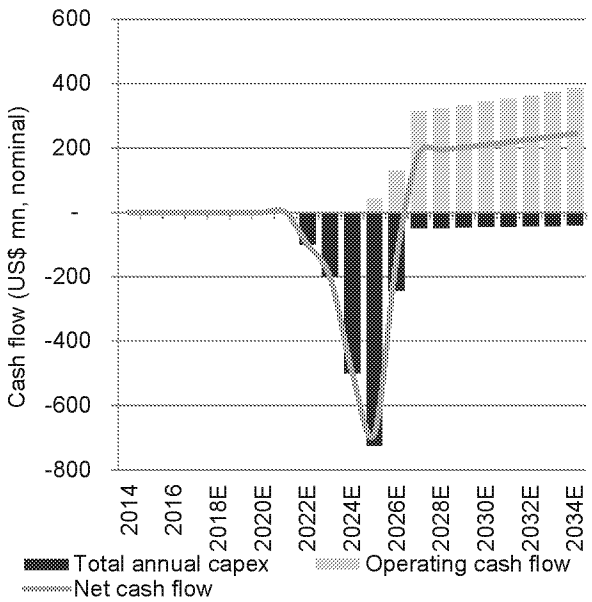
The Koksay copper project, located in southeastern Kazakhstan, was acquired by KAZ Minerals in June 2014 for US$260 mn and is currently being explored. According to the most recent estimates available, the annual production is c.80 ktpa of copper concentrate along with gold, silver and molybdenum by-products. The project had not received much attention. Newsflow from KAZ on the project had been thin until very recently when China Nonferrous Metal Industry's foreign engineering and construction company (NFC) announced it would invest US$70mn into the project. Following the closure of the deal (which is subject to regulatory approvals) NFC will own c. 20% stake in the mine. This investment will be ring-fenced for the development of the mine including a feasibility study which will determine the detailed design for mining and processing operations and the associated capital budget. The transaction is expected to be completed by 1H19 (according to the company) post which there will be a feasibility study conducted. Given this we don't expect a start date before 2025.



Production profile



Cash flow chart



Economics summary

Internal rate of return	12%
NPV (including sunk costs)	US$413
NPV (2018+)	US$413
Cu required @ 12%	US$6,686 /t
Capex	US$1,700 mn
Capex / t Cu production	US$22,431
Capex / t Cu equ. production	US$20,411
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	587 mt
Copper grade	0.43% Cu
Contained copper	2,525 kt
Commissioning	2025
Peak copper production	80 ktpa
Average LOM production	76 ktpa
Life of mine	25
Gross unit cost	US$3,860 /t
Net unit cost (C1)	US$3,207 /t

Source: Company data, Goldman Sachs Global Investment Research

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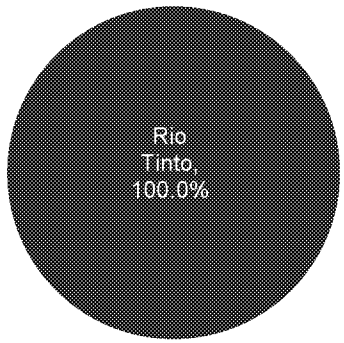
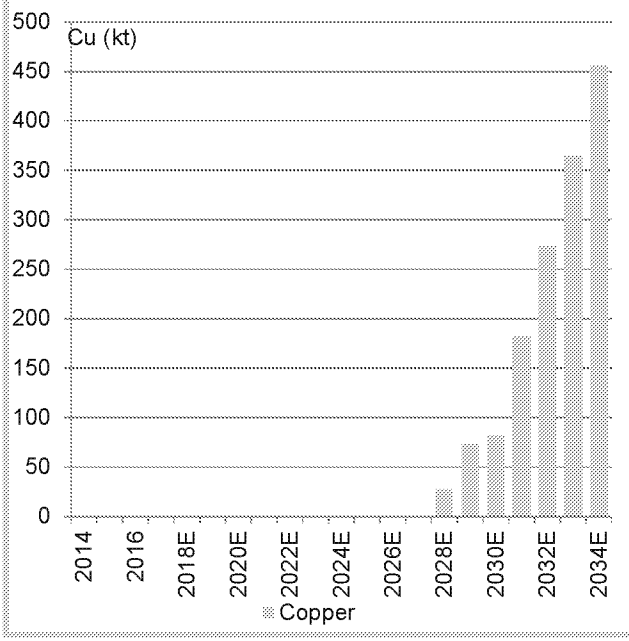
Exhibit 127: La Granja

La Granja	Peru	412 ktpa	US$7,500 mn	12% IRR

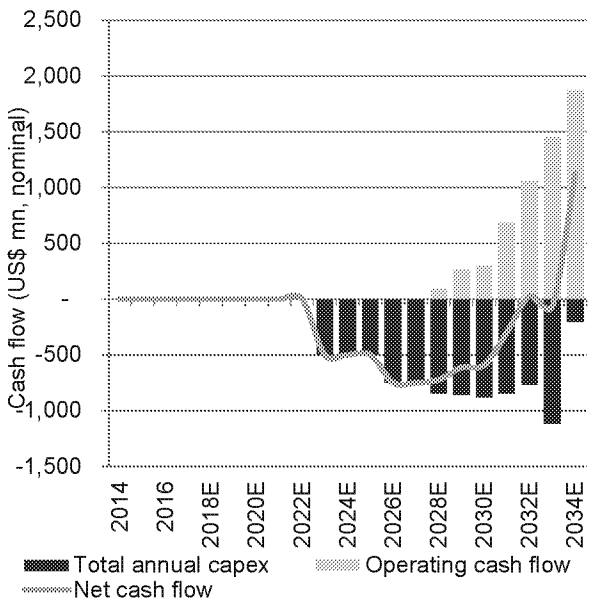
The La Granja project is one of the largest undeveloped copper deposits located in northeastern Peru. Rio Tinto obtained the La Granja concession in December 2005 and is currently in the pre-feasibility stage. The project has potential to produce 500 ktpa of copper with a mine life greater than 40 years. However, given the early stage of the project, we see risks to its timing as this relates to progressing through the engineering studies, obtaining the required permits and construction. La Granja will be an open pit operation and is planned to be developed in stages. Phase 1 will see an initial leach operation of c.80 ktpa, with phase 2 involving an expansion of the leach operation to c.140 ktpa. Phase 3 is expected to see the construction of a concentrator adding c.120 ktpa of capacity, with a second concentrator in phase 4 raising output to c.380 ktpa. A final phase further expanding the leaching operations could see output raised to 500 ktpa. There is no official capex guidance currently and we assume a capital intensity of c.US$14,150/t of production (average from our GS Copper Top Projects analysis) at this stage and delay the start date to 2027 as we expect the company to prioritise projects with lower capex requirements until we receive additional details from the company post completion of the pre-feasibility.



Production profile



Cash flow chart



Economics summary

Internal rate of return	12%
NPV (including sunk costs)	US$1,612
NPV (2018+)	US$1,612
Cu required @ 15%	US$7,431 /t
Capex	US$7,500 mn
Capex / t Cu production	US$18,195
Capex / t Cu equ. production	US$18,195
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	4,320 mt
Copper grade	0.51% Cu
Contained copper	22,032 kt
Commissioning	2028
Peak copper production	501 ktpa
Average LOM production	412 ktpa
Life of mine	23+
Gross unit cost	US$3,633 /t
Net unit cost (C1)	US$3,633 /t

Source: Company data, Goldman Sachs Global Investment Research

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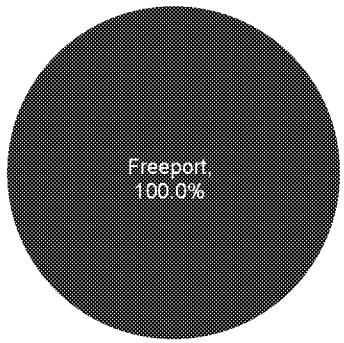
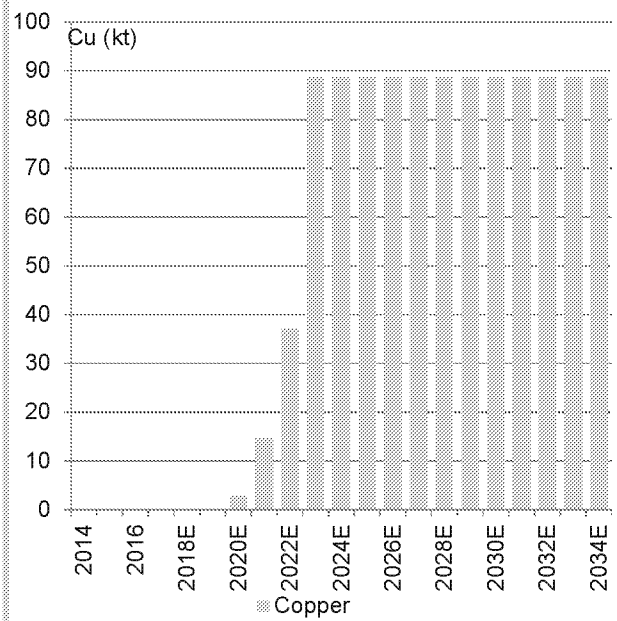
Exhibit 128: Lone Star

Lone Star	USA	82 ktpa	US$900 mn	13% IRR

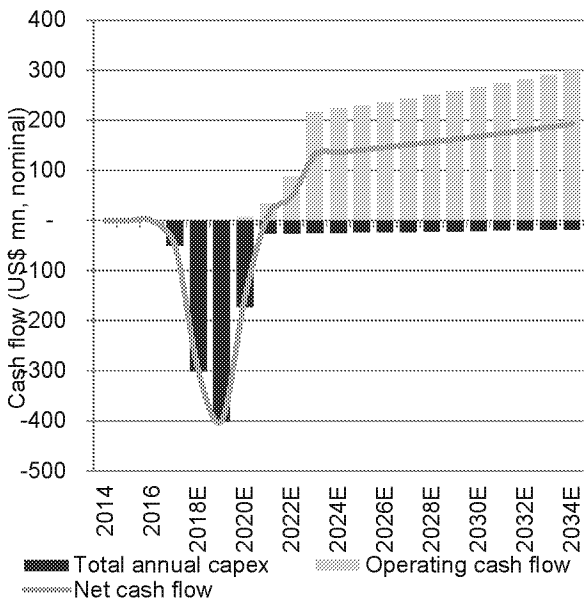
Lone Star is a 100% Freeport owned deposit near the Safford mine in Arizona, US. The company is currently in the process of advancing a project to develop the Lone Star oxide ore. Initial project aiming at 90Ktpa of copper production has been started with pre-stripping activities commencing as of 1Q18. The capex is estimated to be US$850mn (we assume US$900mn including our capex escalation) and will benefit from from the utilisation of existing infrastructure at the adjacent Safford operation. At March 31, 2018, approximately US$35mn has been incurred for this project. The project also advances the potential for development of a larger scale district opportunity. Freeport is also conducting additional drilling to follow up on positive exploration results as they continue to evaluate longer term opportunities available from the significant long-term sulfide potential in the Lone Star/Safford minerals district. We forecast the project to come online in 2020 - in line with the company guidance.



Production profile



Cash flow chart



Economics summary

Internal rate of return	13%
NPV (including sunk costs)	US$632
NPV (2018+)	US$683
Cu required @ 10%	US$4,870 /t
Capex	US$900 mn
Capex / t Cu production	US$10,992
Capex / t Cu equ. production	US$10,992
Project type	Greenfield
Project status	Construction
Ore reserves / resources	662 mt
Copper grade	0.45% Cu
Contained copper	2,979 kt
Commissioning	2020
Peak copper production	89 ktpa
Average LOM production	82 ktpa
Life of mine	20
Gross unit cost	US$4,094 /t
Net unit cost (C1)	US$4,094 /t

Source: Company data, Goldman Sachs Global Investment Research

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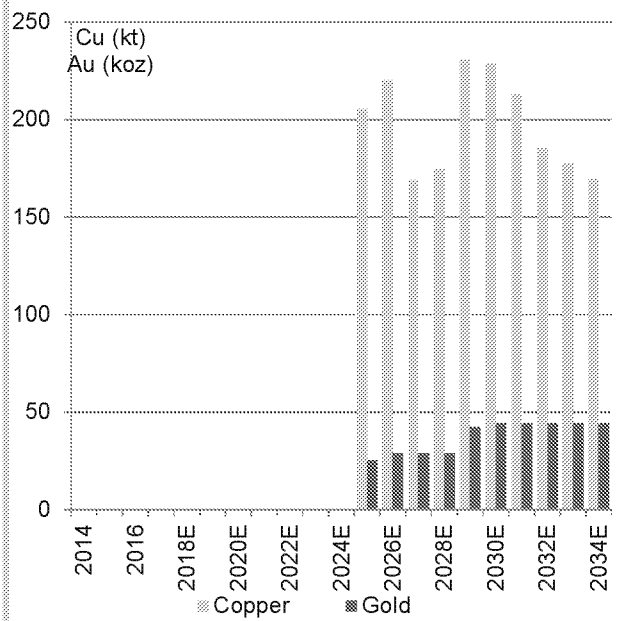
Exhibit 129: Los Azules

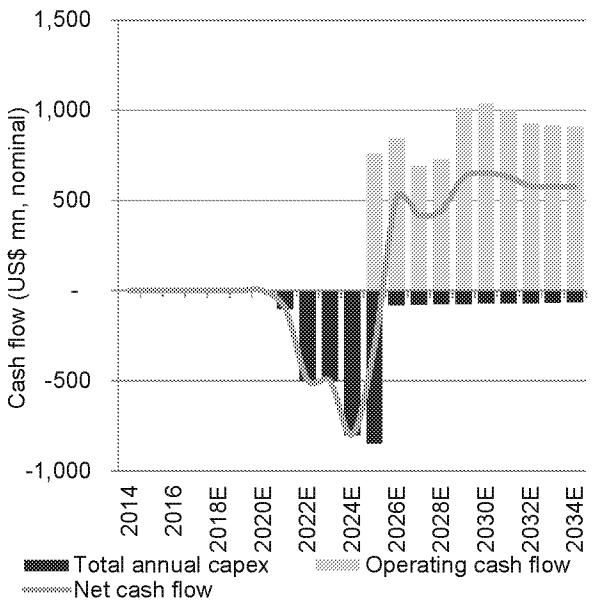
Los Azules	Argentina	168 ktpa	US$2,691 mn	19% IRR

Los Azules is 100% McEwen Mining-owned copper-gold-silver project in San Juan region of Argentina. The project area is remote and there is no infrastructure present nearby. There are no nearby towns, indigenous residents, or settlements which makes the project development a bit difficult. The company released a PEA in Sept. 2017 where it was envisaged that the mine had the potential to produce upwards of 150Ktpa of copper and c. 40Koz of gold with an initial capex investment of c. US$2.4bn. The company is still in exploration phase and has planned an exploration spend of c. US$5mn for this financial year. While the economics of the mine do look compelling, we believe that it is unlikely anything meaningful is done on the project before 2021 given that: a) there is no arrangement of funding for the project and b) political and fiscal conditions in Argentina remain fluid and as such we expect the significant infrastructure requirement for the project is unlikely to be met in the near term.

Production profile



Cash flow chart



Economics summary

Internal rate of return	19%
NPV (including sunk costs)	US$2,104
NPV (2018+)	US$2,104
Cu required @ 25%	US$4,870 /t
Capex	US$2,691 mn
Capex / t Cu production	US$16,054
Capex / t Cu equ. production	US$14,795
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	962 mt
Copper grade	0.48% Cu
Contained copper	4,618 kt
Commissioning	2025
Peak copper production	230 ktpa
Average LOM production	168 ktpa
Life of mine	26+
Gross unit cost	US$3,474 /t
Net unit cost (C1)	US$3,184 /t

Source: Company data, Goldman Sachs Global Investment Research

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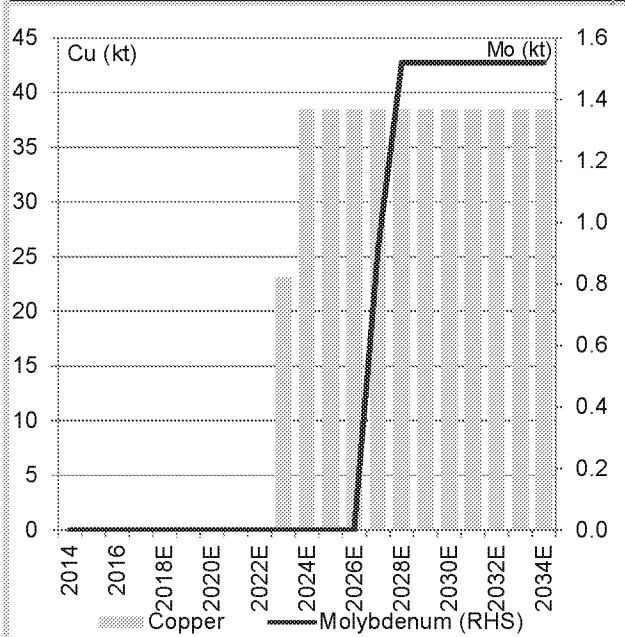
Exhibit 130: Los Calatos

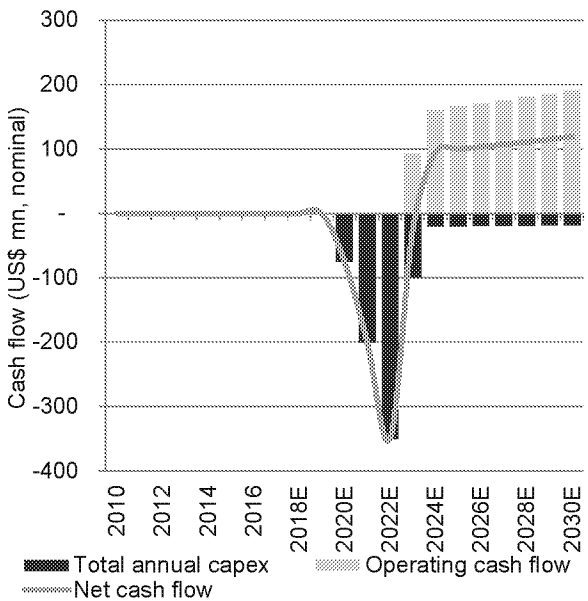
Los Calatos	Peru	38 ktpa	US$705 mn	15% IRR

Los Calatos, located in Southern Peru, is a greenfield copper-molybdenum project. Metminco Ltd. sold the majority stake in the project to CD Capital in 2016 and sold the remaining 49% stake in June 2017. As per the latest scoping study (which was released in September 2015) the project is envisaged to have a throughput of 6.5 mtpa producing an average 50 ktpa of copper concentrate over the LOM for a period of 22 years. The company is guiding for total capex of US$655 mn for the project, with a short lead time to production and a forecast construction period of 18-24 months. The mine has total resources of 136 mt with a copper grade of 0.79%. The company is currently conducting an environmental baseline study and is positioned to initiate a development programme that progresses the Los Calatos project to feasibility study, subject to available funding. We currently assume start of construction of the mine in 2020 with first production in 2023 and add inflation expectations to the guided capex while awaiting further details from the company.

Production profile



Cash flow chart



Economics summary

Internal rate of return	15%
NPV (including sunk costs)	US$462
NPV (2018+)	US$462
Cu required @ 15%	US$6,848 /t
Capex	US$705 mn
Capex / t Cu production	US$18,598
Capex / t Cu equ. production	US$16,345
Project type	Greenfield
Project status	Scoping
Ore reserves / resources	136 mt
Copper grade	0.79% Cu
Contained copper	1,074 kt
Commissioning	2023
Peak copper production	38 ktpa
Average LOM production	38 ktpa
Life of mine	28+
Gross unit cost	US$3,452 /t
Net unit cost (C1)	US$2,706 /t

Source: Company data, Goldman Sachs Global Investment Research

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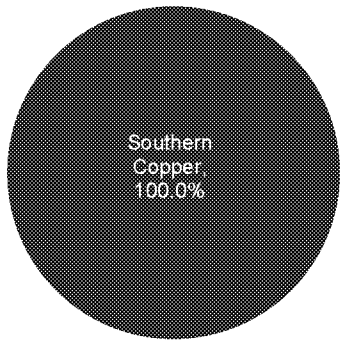
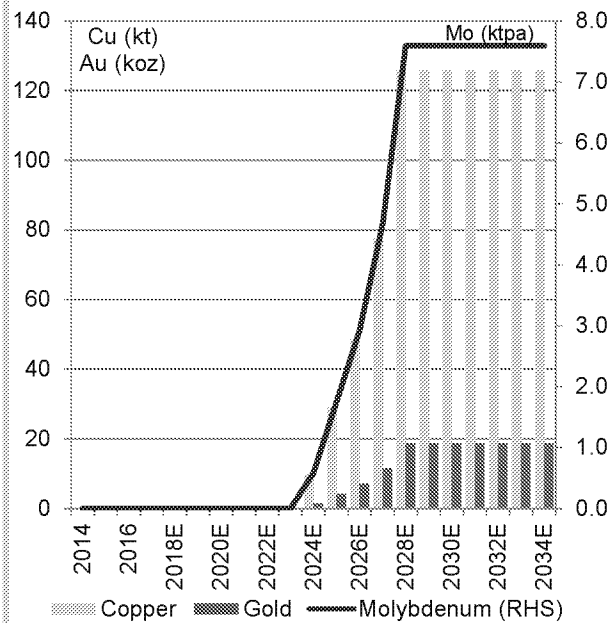
Exhibit 131: Los Chancas

Los Chancas	Peru	113 ktpa	US$2,900 mn	10% IRR

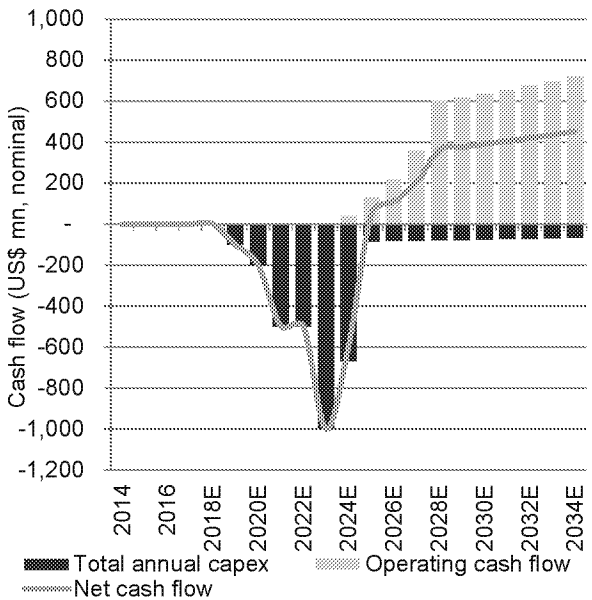
Los Chancas is a greenfield project located in Apurimac area of Peru. It is a copper and molybdenum porphyry deposit. Current estimates indicate the presence of 545 million tons of mineralized material with a copper content of 0.59%, molybdenum content of 0.04% and 0.039 grams of gold per ton, as well as 181 million tons of mineralized leachable material with a total copper content of 0.357%. According to Southern Copper, the mine could be an open-pit mine with a combined operation of concentrator and SX-EW processes to annually produce 130Kt of copper and 7.5Kt of molybdenum with some gold by-product. The company's estimated capital investment is US$2,800 mn (we add a slight inflation adjustment in our estimate) and the company guided that the mine should be operational in 2022. Given that the company is still conducting the environmental impact assessment (due this year) we believe that the 2022 target is likely to be too optimistic. We expect the mine to start production in 2024, reaching full production in 2027.



Production profile



Cash flow chart



Economics summary

Internal rate of return	10%
NPV (including sunk costs)	US$543
NPV (2018+)	US$543
Cu required @ 15%	US$4,870 /t
Capex	US$2,900 mn
Capex / t Cu production	US$25,679
Capex / t Cu equ. production	US$20,729
Project type	Greenfield
Project status	Scoping
Ore reserves / resources	545 mt
Copper grade	0.59% Cu
Contained copper	3,216 kt
Commissioning	2024
Peak copper production	126 ktpa
Average LOM production	113 ktpa
Life of mine	26
Gross unit cost	US$3,970 /t
Net unit cost (C1)	US$2,645 /t

Source: Company data, Goldman Sachs Global Investment Research

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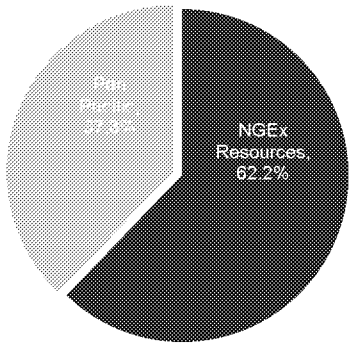
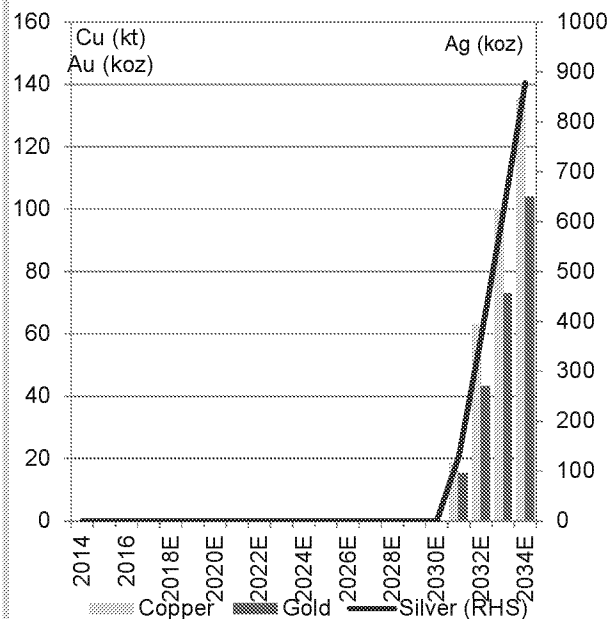
Exhibit 132: Los Helados

Los Helados	Chile	156 ktpa	US$1,325 mn	16% IRR

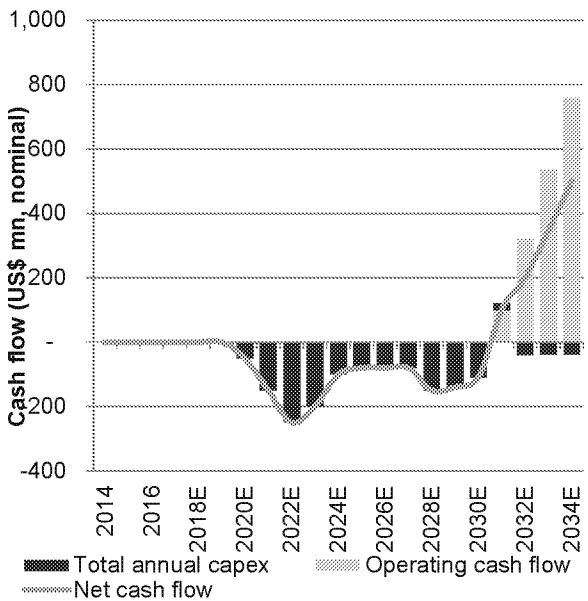
Los Helados, located in Northern Chile, is a greenfield underground copper-gold-silver mine. It is owned by NGEx Resources (c.60%) and Pan Pacific (c.40%). NGEx published a Preliminary Economic Assessment (PEA) in April 2016 for its Project Constellation, which combines Josemaria in Argentina followed by a block cave underground mine, Los Helados in Chile. The two projects are c.10 km apart and material from both deposits will be processed at a centralised facility. The combined LOM of Project Constellation is 48 years while that of Los Helados is 35 years, with average annual production of 150 ktpa of copper. The total guided pre-production capex for Project Constellation is US$3 bn. We believe these costs exclude certain mine development costs for Los Helados which will be incurred post starting production at Josemaria. We add these costs to the assumed split of the pre-production costs for Los Helados. In 2016, an agreement was completed which provides surface rights covering Los Helados deposit. The environmental baseline study is ongoing while the company evaluates lower cost development options including testing the heap leach potential of oxide cap at Josemaria. We currently assume first production from the mine in 2031 and add inflation expectations to the guided capex while awaiting further details from management.



Production profile



Cash flow chart



Economics summary

Internal rate of return	16%
NPV (including sunk costs)	US$1,727
NPV (2018+)	US$1,727
Cu required @ 15%	US$5,817 /t
Capex	US$1,325 mn
Capex / t Cu production	US$8,520
Capex / t Cu equ. production	US$7,025
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	2,926 mt
Copper grade	0.36% Cu
Contained copper	10,623 kt
Commissioning	2031
Peak copper production	200 ktpa
Average LOM production	156 ktpa
Life of mine	20+
Gross unit cost	US$3,804 /t
Net unit cost (C1)	US$2,652 /t

Source: Company data, Goldman Sachs Global Investment Research

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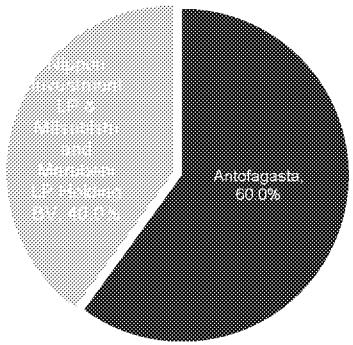
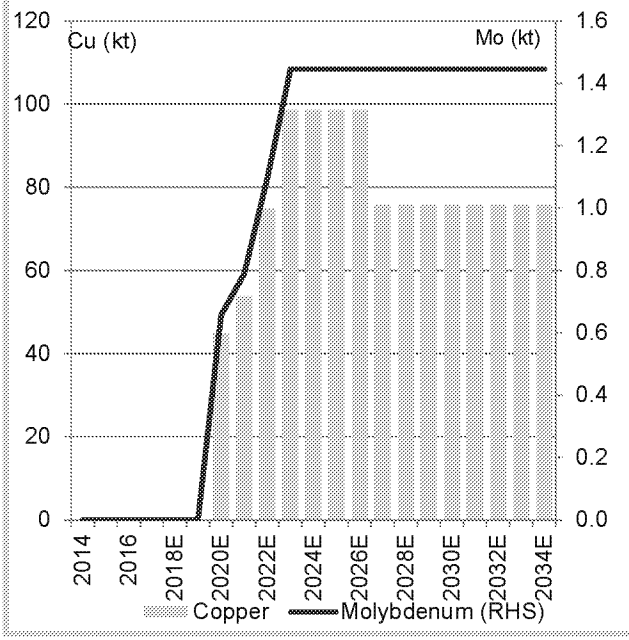
Exhibit 133: Los Pelambres 205

Los Pelambres 205	Chile	78 ktpa	US$1,950 mn	8% IRR

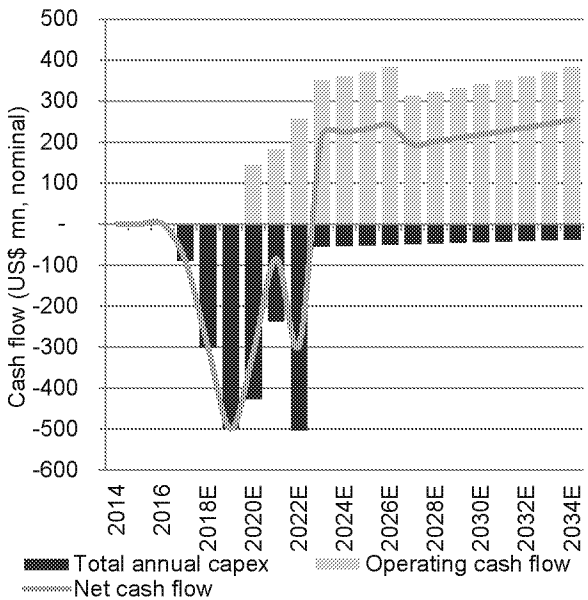
Los Pelambres is Antofagasta's key operation, contributing c.350 kt of the group's total 700 kt of copper production. There have already been two brownfield expansions in the last decade, first raising concentrator throughput to 140 ktpd, completed in 2007, followed by a further expansion to 175 ktpa, completed in 2010. A further expansion to 205 ktpd is envisaged, which could add a further 90 ktpa of gross copper production to the operation. The project is being progressed in 2 stages: 1) Phase 1 is designed to optimise throughput. During this phase, Los Pelambres will operate at an average throughput of 190Ktpd. The company received EIA approvals in Feb 2018. The capex for the project is US$1.3bn and it will add c. 55Kt from 2021; b) Phase 2 of the project will increase the throughput from 190Kt/d to 205Kt/d and add 35Kt of copper and a capex of US$500mn. The project will only proceed following a decision on Phase 1 and will require the submission of extensive permit applications, including the new EIA. First production from this phase would be in 2022 at the earliest and is expected to increase copper production by 35Ktpa. We assume that the company will start to spend capex on the phase 2 from 2021 with first production from this phase coming in 2023.



Production profile



Cash flow chart



Economics summary

Internal rate of return	8%
NPV (including sunk costs)	US$27
NPV (2018+)	US$118
Cu required @ 15%	US$8,246 /t
Capex	US$1,950 mn
Capex / t Cu production	US$25,023
Capex / t Cu equ. production	US$23,847
Project type	Brownfield
Project status	Feasibility
Ore reserves / resources	205 mt
Copper grade	0.61% Cu
Contained copper	1,248 kt
Commissioning	2020
Peak copper production	99 ktpa
Average LOM production	78 ktpa
Life of mine	18
Gross unit cost	US$3,406 /t
Net unit cost (C1)	US$3,130 /t

Source: Company data, Goldman Sachs Global Investment Research

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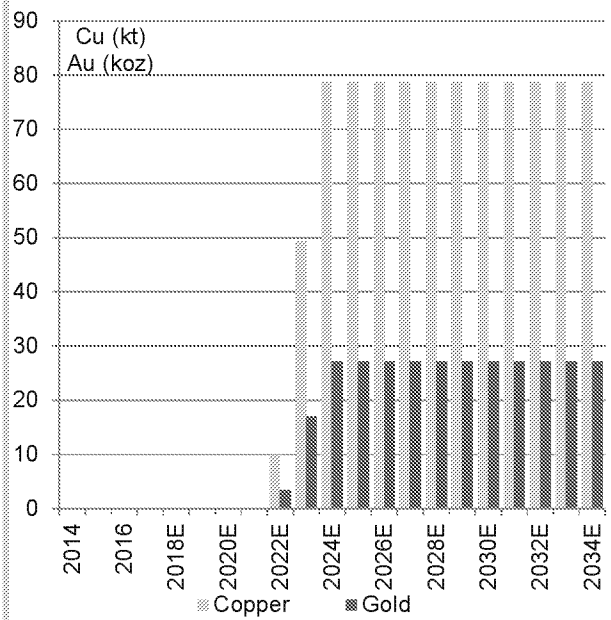
Exhibit 134: Mantoverde

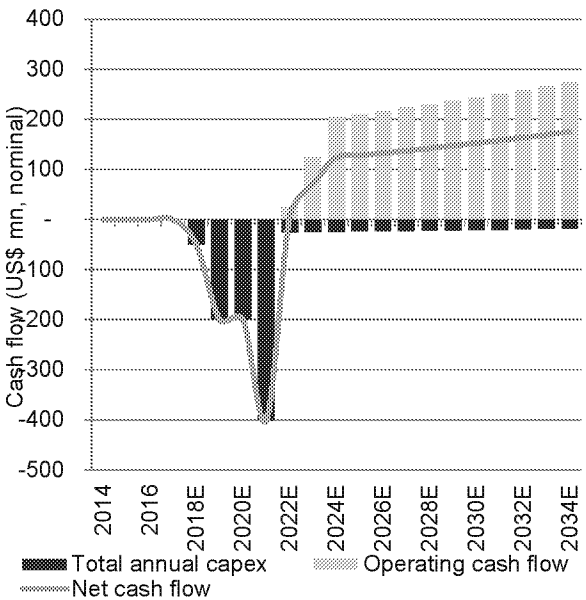
Mantoverde	Chile	73 ktpa	US$850 mn	11% IRR

Mantoverde consists of a number of distinct ore bodies located in the Atacama region of Chile. The project is 100% owned by Mantos Copper. The project, with an estimated capex guidance of c. US$800mn (plus our inflation escalations), involves the extraction of sulphide ore and production of copper in concentrates commencing in 2021, according to the company. However, we estimate that there are likely to be some delays and expect first production in 2022. The mine at its peak will produce 80Ktpa of copper and 28Koz of gold. The company completed the pre-feasibility study this year (2018). As of now the Mantoverde mine has a limited mine life but this project will add c. 19 years to the mine life. The focus in 2018 is to finish engineering, construction contracts and finalize the structuring of project financing, before beginning construction in 2019.

Production profile



Cash flow chart



Economics summary

Internal rate of return	11%
NPV (including sunk costs)	US$234
NPV (2018+)	US$234
Cu required @ 15%	US$4,870 /t
Capex	US$850 mn
Capex / t Cu production	US$11,586
Capex / t Cu equ. production	US$10,863
Project type	Brownfield
Project status	Pre-feasibility
Ore reserves / resources	230 mt
Copper grade	0.60% Cu
Contained copper	1,380 kt
Commissioning	2022
Peak copper production	79 ktpa
Average LOM production	73 ktpa
Life of mine	18
Gross unit cost	US$4,466 /t
Net unit cost (C1)	US$4,027 /t

Source: Company data, Goldman Sachs Global Investment Research

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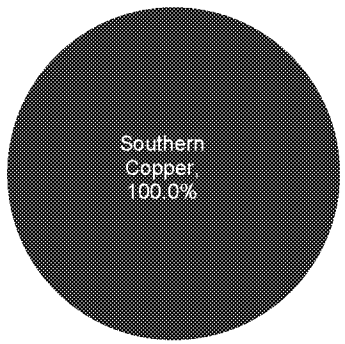
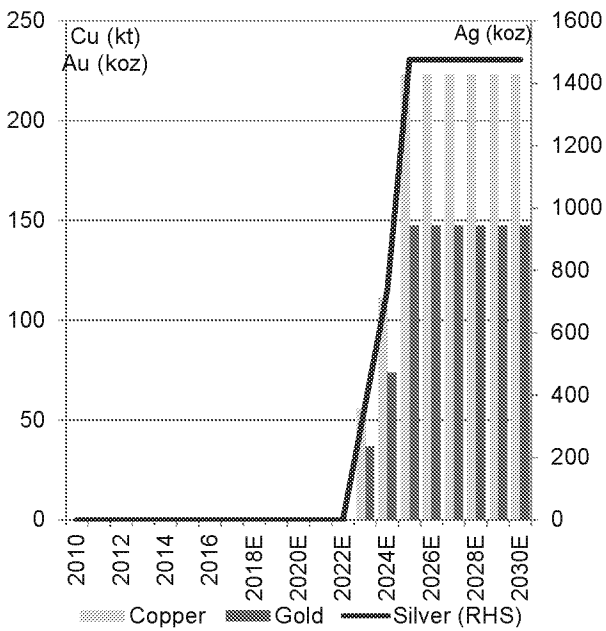
Exhibit 135: Michiquillay

Michiquillay	Peru	209 ktpa	US$2,700 mn	16% IRR

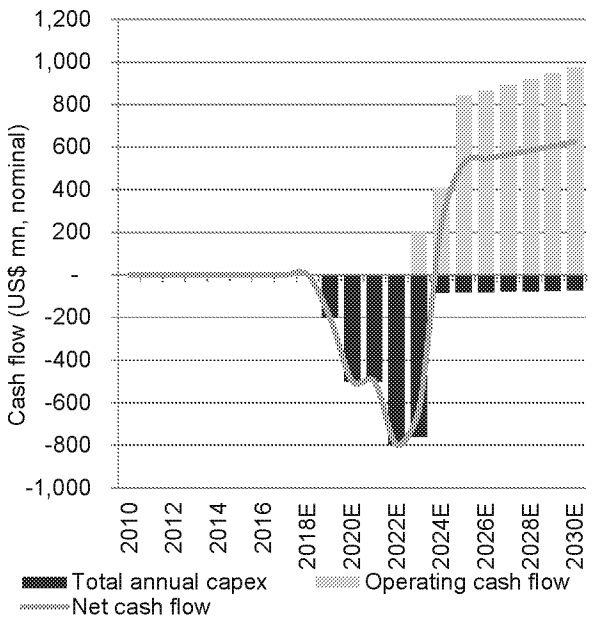
Southern Copper in Feb. 2018 won the bidding process for the Michiquillay project in Cajamarca, Peru, at a purchase price of US$400mn and a 3% royalty rate. This comes after Anglo American returned its contract for operating the mine in late 2014 due to capital constraints. The mine is located somewhere between 3 km and 3.6 km above sea level. Michiquillay has mineral resources of 1,150 million tons and a copper grade of 0.63%. The mine has the potential to produce 225Kt of copper per year (along with such by-products as molybdenum, gold and silver) for an initial mine life of more than 25 years, at a very competitive cash cost. Southern Copper said the capex will be US$2.5bn (our estimate US$2.7bn includes inflation). The initial plan was to start production in 2025, however recently the company commented that it will start the construction of the mine next year with the mine likely starting operations in 2022. The company still needs to reach detailed agreements with residents near the deposit before construction can begin - the talks are likely to take up to a year with construction taking another 3. Given the number of approvals still needed, we expect the mine to start producing a year later than guided to by SCCO, i.e. in 2023, and reach full production by 2025. Also worth noting is that the project has a higher level of arsenic impurities.



Production profile



Cash flow chart



Economics summary

Internal rate of return	16%
NPV (including sunk costs)	US$569
NPV (2018+)	US$631
Cu required @ 15%	US$6,863 /t
Capex	US$2,700 mn
Capex / t Cu production	US$12,893
Capex / t Cu equ. production	US$11,314
Project type	Greenfield
Project status	Scoping
Ore reserves / resources	544 mt
Copper grade	0.63% Cu
Contained copper	3,427 kt
Commissioning	2023
Peak copper production	223 ktpa
Average LOM production	209 ktpa
Life of mine	25
Gross unit cost	US$4,278 /t
Net unit cost (C1)	US$429 /t

Source: Company data, Goldman Sachs Global Investment Research

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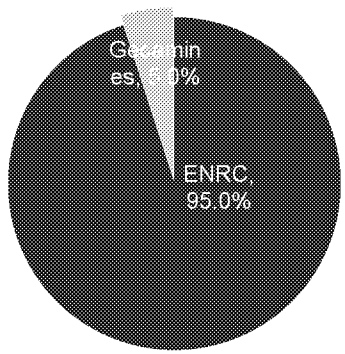
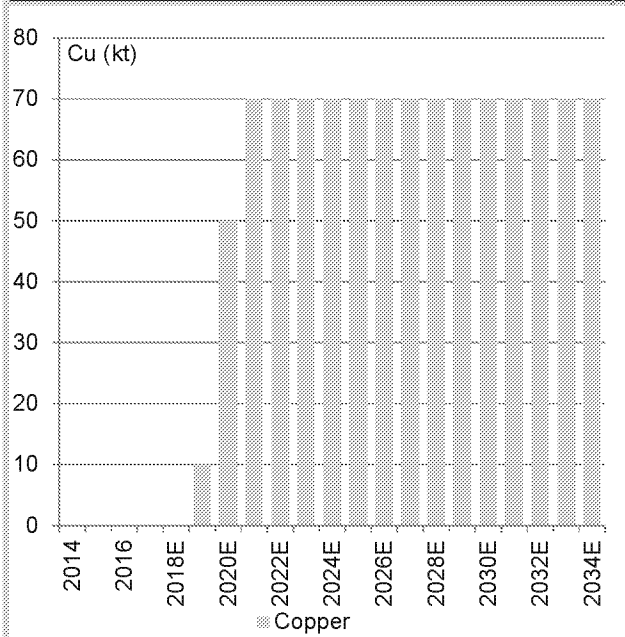
Exhibit 136: Metalkol

Metalkol	DRC	67 ktpa	US$900 mn	30% IRR

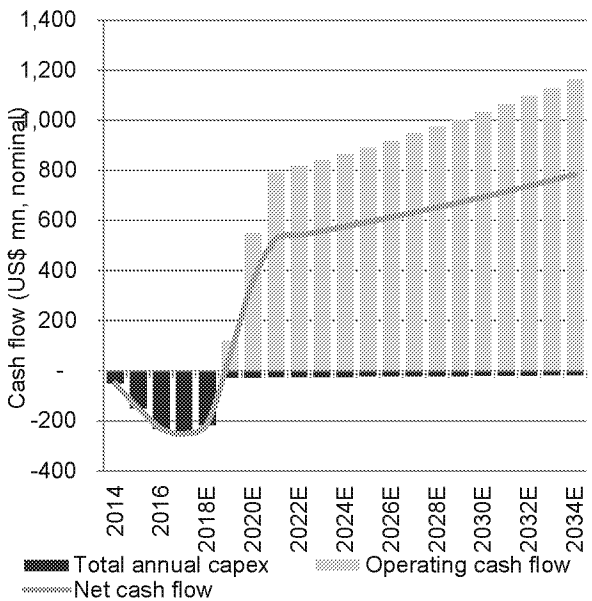
Metalkol is an open pit brownfield copper-cobalt project located in Katanga province of Democratic Republic of Congo. The project is owned by Eurasian Natural Resources Group (95%) and Gecamines (5%). ENRC (formerly known as ERG) bought Metakol from Camrose in 2010. The Tailings Reclamation Project is expected to have a throughput of 5mtpa and is expected to produce 70ktpa of copper along with c. 15 ktpa of cobalt over a life of mine of 20 years. We estimate the capex for the project to be US$900 mn after incorporating slight inflation to Wood Mackenzie's estimate of US$820 mn with C1 cash costs expected to be about -54c/lb. ENRC announced in 2015 that it had signed an agreement with China's NFC to complete construction of the Kolwezi Tailings project. Financing worth US$700 mn had been secured and NFC was to be the contractor responsible for the construction. In July 2016, NFC announced signing of a US$654 mn contract to complete the construction of the RTR Copper leach plant with a timescale for completion of 24 months. We expect production to begin in FY19. In August 2018 Metalkol signed an agreement to secure electricity supply for the mine for up to 10 years.



Production profile



Cash flow chart



Economics summary

Internal rate of return	30%
NPV (including sunk costs)	US$4,884
NPV (2018+)	US$5,608
Cu required @ 25%	US$3,820 /t
Capex	US$900 mn
Capex / t Cu production	US$13,514
Capex / t Cu equ. production	US$5,764
Project type	Greenfield
Project status	Construction
Ore reserves / resources	113 mt
Copper grade	1.49% Cu
Contained copper	1,681 kt
Commissioning	2019
Peak copper production	70 ktpa
Average LOM production	67 ktpa
Life of mine	24
Gross unit cost	US$3,270 /t
Net unit cost (C1)	-US$4,158 /t

Source: Company data, Goldman Sachs Global Investment Research

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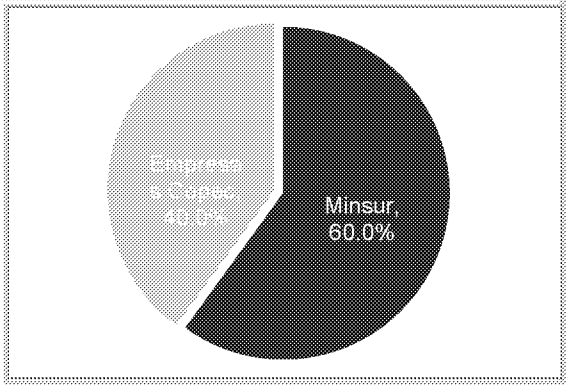
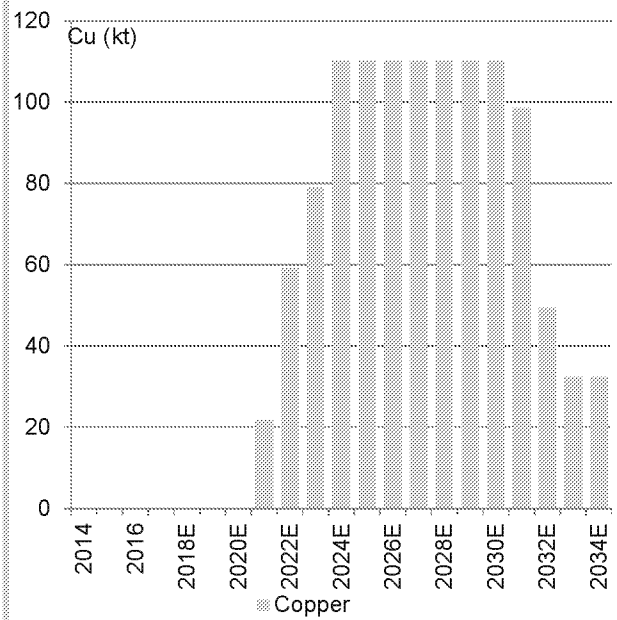
Exhibit 137: Mina Justa

Mina Justa	Peru	78 ktpa	US$1,500 mn	11% IRR

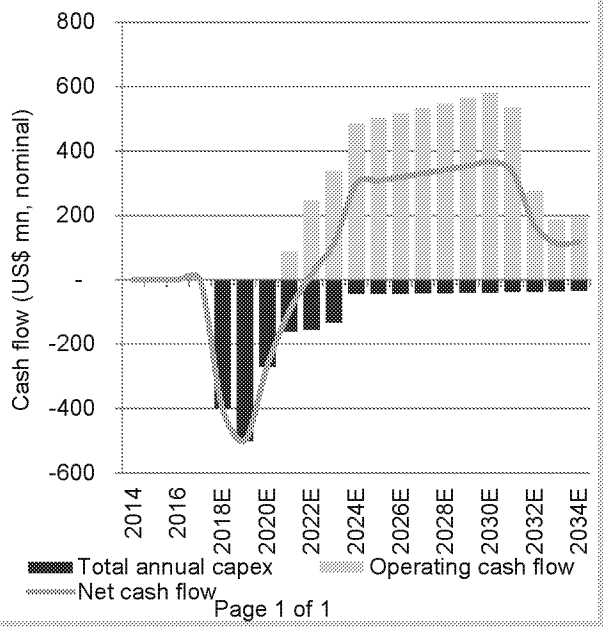
Mina Justa, located in Nazca, Peru, is a long-life copper deposit being developed by Marcobre S.A.C. (solely owned by Minsur). Minsur, which originally had a 70% stake, then bought the remaining stake it did not own from Korea Resources Corporation (KORES) and LS-Nikko (LS-Nikko) Copper in September 2016. Mina Justa has two types of minerals: (1) a superficial layer of copper oxide expected to start production in 2020 and have a LOM of 11 years; and (2) a deep layer of copper sulphides expected to start production in 2022 and have a LOM of ten years. More recently, Empresas Copec via its subsidary Alxar took a 40% stake in the project for a cash payment of US$168.5mn (with Minsur now holding 60%). According to latest company estimates, the capex of the mine is estimated to be US$1.4bn (we add inflation of US$100mn). The construction is slated to being in 2H18 and we expect the project to reach full production by 2021. Studies of the mine show the mine could produce c. 110Ktpa of copper (concentrate + cathode). Minsur (which owns 60% of the mine) announced that it is looking to secure c. US$800-900mn in financing from a group of banks in August which will put it on track to begin construction.



Production profile



Cash flow chart



Economics summary

Internal rate of return	11%
NPV (including sunk costs)	US$336
NPV (2018+)	US$336
Cu required @ 15%	US$7,438 /t
Capex	US$1,500 mn
Capex / t Cu production	US$19,130
Capex / t Cu equ. production	US$19,130
Project type	Greenfield
Project status	Feasibility
Ore reserves / resources	374 mt
Copper grade	0.71% Cu
Contained copper	2,655 kt
Commissioning	2021
Peak copper production	110 ktpa
Average LOM production	78 ktpa
Life of mine	15
Gross unit cost	US$2,498 /t
Net unit cost (C1)	US$2,498 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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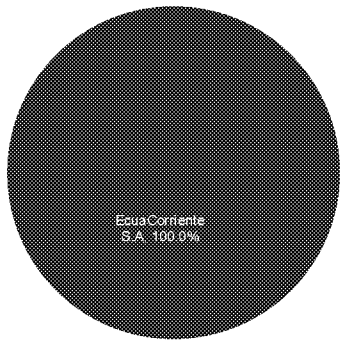
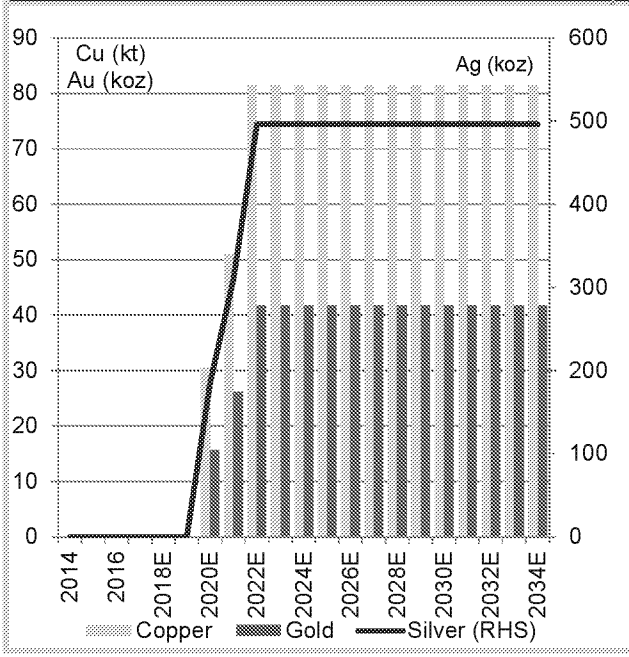
Exhibit 138: Mirador

Mirador	Ecuador	79 ktpa	US$1,500 mn	15% IRR

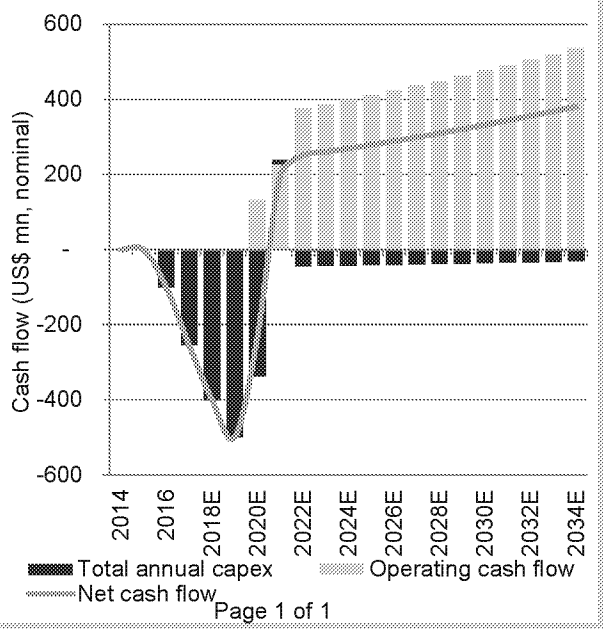
The Mirador project, located in Zamora-Chinchipe province of Ecuador is an open-pit copper mine. It is the first large scale copper mine in the country. Corriente Resources, Ecuacorriente's parent company, was bought by two Chinese state owned enterprises, China Railway Construction Company (CRCC) and Tongling Nonferrous, in 2010. The mine obtained the EIA in December 2015 and construction began at the same time. The project is expected to produce 79ktpa of copper and about 40koz of gold per annum in steady-state for a total capex of US$1.5bn (including our inflation assumptions). Whilst the project was slated to come online in 4Q18, it has faced delays due to heavy rainfall and environmental challenges during the construction of the open pit and tailing facility. We now see this project coming online in 2020. The initial plan was to start with milling capacity of 30kt/d and ramp to 60kt/d. By 1Q17 this had changed to start-up at 60kt/d. However, tailings constraint has obliged the company to maintain the intial plan.



Production profile



Cash flow chart



Economics summary

Internal rate of return	15%
NPV (including sunk costs)	US$1,696
NPV (2018+)	US$2,067
Cu required @ 25%	US$10,303 /t
Capex	US$1,500 mn
Capex / t Cu production	US$19,026
Capex / t Cu equ. production	US$17,139
Project type	Greenfield
Project status	Construction
Ore reserves / resources	436 mt
Copper grade	0.62% Cu
Contained copper	2,700 kt
Commissioning	2020
Peak copper production	81 ktpa
Average LOM production	79 ktpa
Life of mine	31+
Gross unit cost	US$2,861 /t
Net unit cost (C1)	US$2,098 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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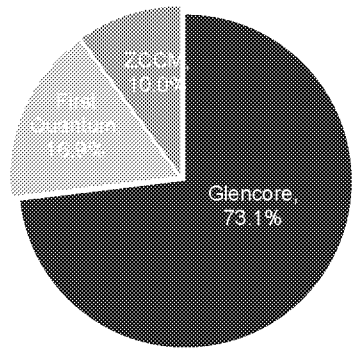
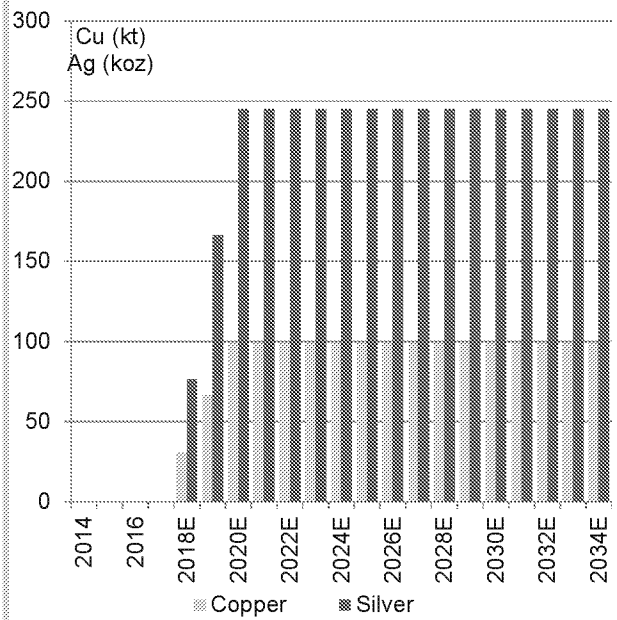
Exhibit 139: Mopani

Mopani	Zambia	95 ktpa	US$1,025 mn	19% IRR

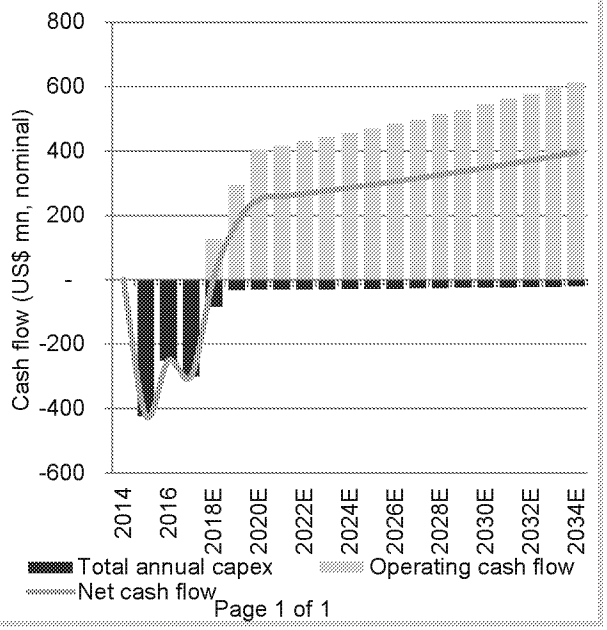
Mopani Deeps is an underground brownfield copper-cobalt project in Zambia. The mine has been in production since 1930s. It is majority owned by Glencore (73%) with First Quantum (17%) and Zambia Consolidated Copper Mines Limited- Investment Holdings (ZCCM-IH), a Zambian government agency, holding minority stakes. Mopani consists of the Nkana and Mufulira underground mines. In 2H2015, Glencore announced suspension of Mopani mines due to prevailing low copper prices and also estimated US$1 bn plan for expansion. Glencore has spent over US$1 bn since 2014 at Mufulira, Synclinorium Shaft at Nkana and Mindola for development of new shafts. The new shafts are expected to increase the life of the mine by c.25 years. The expansion is slated to add c. 90Ktpa of copper production with first production expected in 2H18 and full ramp-up to the name-plate capacity by 2020. With the majority of the capex having being spent at the mine, we believe that the likelihood of the project reaching full capacity by 2020 is high.



Production profile



Cash flow chart



Economics summary

Internal rate of return	19%
NPV (including sunk costs)	US$2,126
NPV (2018+)	US$3,161
Cu required @ 15%	US$5,489 /t
Capex	US$1,025 mn
Capex / t Cu production	US$10,807
Capex / t Cu equ. production	US$10,757
Project type	Brownfield
Project status	Construction
Ore reserves / resources	144 mt
Copper grade	1.92% Cu
Contained copper	2,765 kt
Commissioning	2018
Peak copper production	99 ktpa
Average LOM production	95 ktpa
Life of mine	26
Gross unit cost	US$4,337 /t
Net unit cost (C1)	US$2,333 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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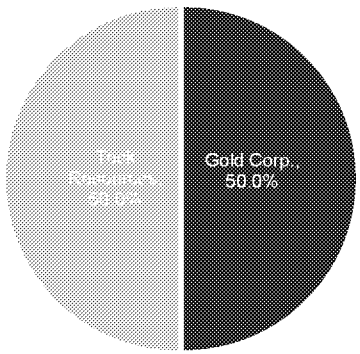
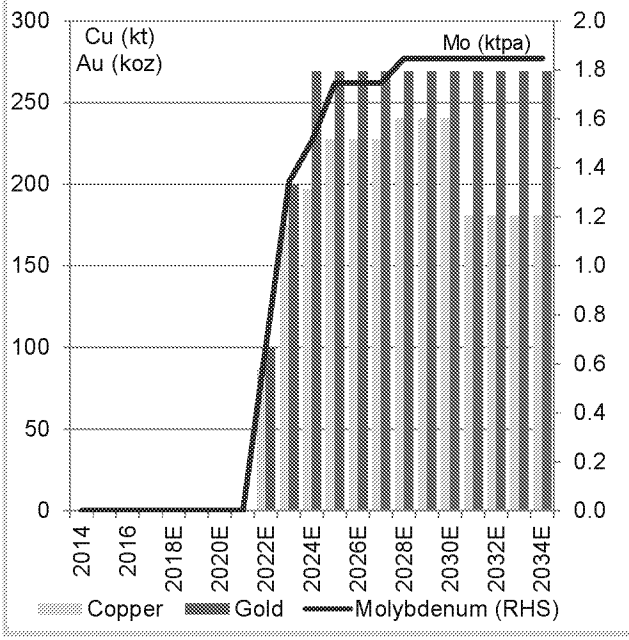
Exhibit 140: Nueva Union

Nueva Union	Chile	174 ktpa	US$3,800 mn	16% IRR

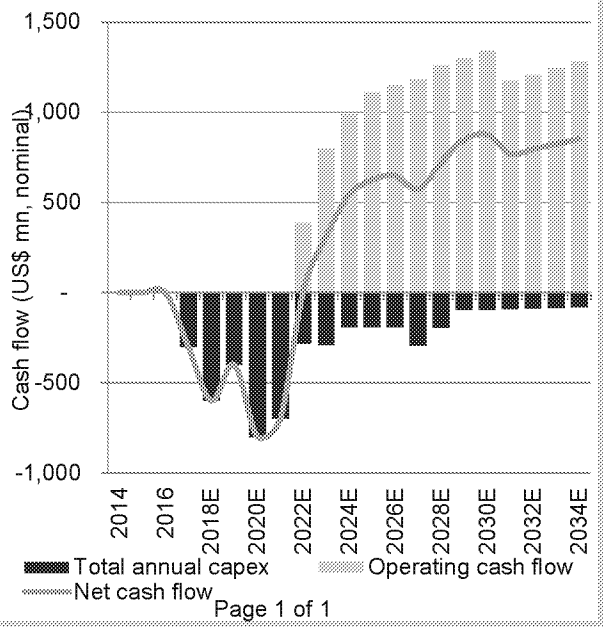
Nueva Union (formerly Project Corridor) is a JV between Teck Resources and Goldcorp. A pre-feasibility study was completed in 1Q18 according to which the capex is expected to be US$3.5-US$3.5bn (we add an inflation expectation). Note that this is for the first phase. The second phase will require more capex but we think the company is likely to proceed with it after phase 1 using the project cash flows. The PFS contemplates average annual production of 224kt of copper, 269Koz of gold and 1.7Kt of of molybdenum for the first full five years. The Relincho and La Fortuna deposits will be bulk open-pit mining operations that will be developed in three production phases. A feasibility study is expected to start in 3Q18 requiring 12 months to complete. Phase 1 (years 1-3) sees mining activities and construction of processing and ancillary facilities at the Relincho site. The proposed nominal ore-processing rate in Phase 1 is 104Ktpd. In Phase 2 (years 4-18), mining activities transfer to the La Fortuna site utilizing an ore conveyance system to transport ore to the processing facilities at Relincho. The proposed nominal ore-processing rate is 116Ktpd in Phase 2. Phase 3 (years 19-36) sees mining activities transfer back to Relincho with an expansion to the processing and ancillary facilities increasing the nominal ore processing rate to 208Ktpd.



Production profile



Cash flow chart



Page 1 of 1

Economics summary

Internal rate of return	16%
NPV (including sunk costs)	US$3,458
NPV (2018+)	US$3,767
Cu required @ 15%	US$6,105 /t
Capex	US$3,800 mn
Capex / t Cu production	US$21,881
Capex / t Cu equ. production	US$16,593
Project type	Greenfield
Project status	Feasibility
Ore reserves / resources	1,838 mt
Copper grade	0.41% Cu
Contained copper	7,517 kt
Commissioning	2022
Peak copper production	240 ktpa
Average LOM production	174 ktpa
Life of mine	29+
Gross unit cost	US$3,860 /t
Net unit cost (C1)	US$2,207 /t

Source: Company data, Goldman Sachs Global Investment Research

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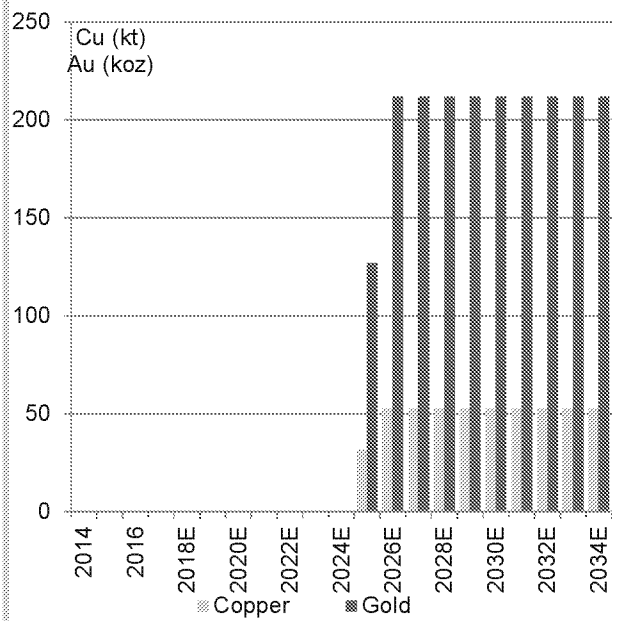
Exhibit 141: New Prosperity

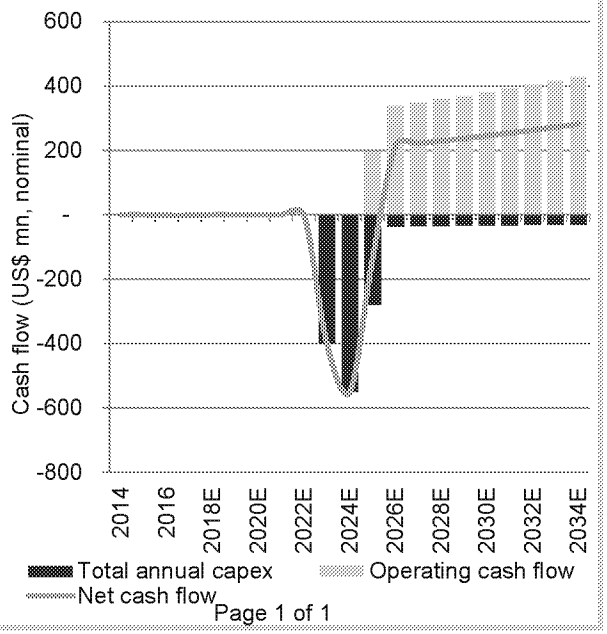
New Prosperity	Canada	51 ktpa	US$1,200 mn	18% IRR

New Prosperity is a greenfield open-pit copper-gold mining project in the Cariboo-Chilcotin region of British Columbia, Canada. Taseko Mines Ltd. is the sole owner of the project. Taseko has been carrying out exploration programmes for a couple of decades. The project has run into hurdles as there are questions raised by the Federal government over the economic benefits of the project versus the social and environmental costs. Taseko's attempt to sue the Federal Government over the delay in the project was rejected by a court. In January 2017, the company again sought a judicial review of the decision to reject the mine. Most recently the company lost judicial review applications to the Federal Court of Canada over the federal government's rejection of the company's New Prosperity Mine near Williams Lake. Instead of the mine a Tribal Park is being developed and as such we believe that the likelihood of this project coming online is very small.

Production profile



Cash flow chart



Economics summary

Internal rate of return	18%
NPV (including sunk costs)	US$995
NPV (2018+)	US$999
Cu required @ 10%	US$3,557 /t
Capex	US$1,200 mn
Capex / t Cu production	US$23,509
Capex / t Cu equ. production	US$13,274
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	831 mt
Copper grade	0.23% Cu
Contained copper	1,120 kt
Commissioning	2025
Peak copper production	53 ktpa
Average LOM production	51 ktpa
Life of mine	26+
Gross unit cost	US$6,245 /t
Net unit cost (C1)	US$1,150 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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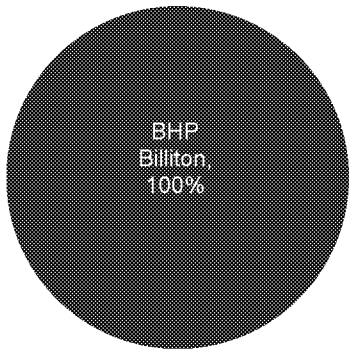
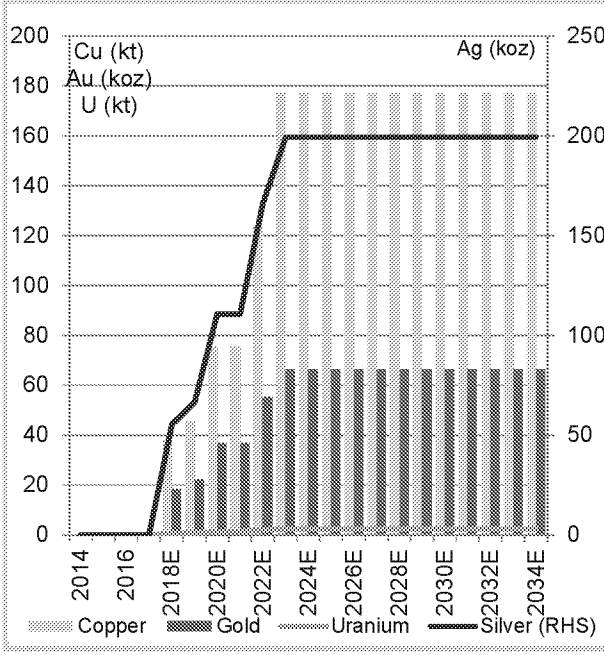
Exhibit 142: Olympic Dam BFX

Olympic Dam BFX	Australia	161 ktpa	US$3,040 mn	40% IRR

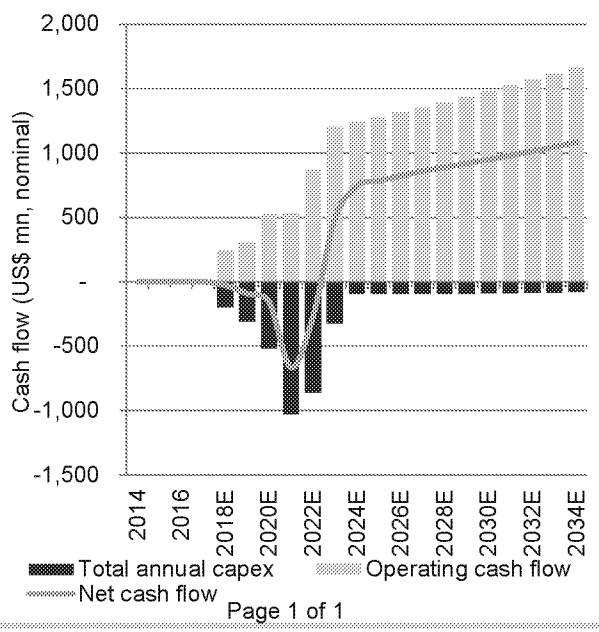
BHP, in Nov. 2017 as part of its site visit, put the expansion to 450Kt on the backburner; instead the company is going for the US$2.1bn brownfield expansion (BFX) which will see production at the mine increase to 330ktpa by 2023. As part of the BFX, the company will expand its processing capacity to handle high-grade ore from the southern area of the mine. The project will be put forth for board approval by mid 2020 with production targeted in late 2021. According to the company, as they move into the southern area of the mine, they expect to see copper grades increase to 3% (by 2023). The mine has had some issues recently and the company had a long shutdown to improve smelter, work on refinery and concentrator and other pieces of infrastructure. However, the production rebounded strongly in C1Q18 - which means the mine is on track in our view. Note that we are just forecasting additional production from the mine, the base production is not part of this analysis. Also, the capex estimate for BFX is c.US$2.3bn; the additional capex is the US$800mn being spent on the mine in terms of surface infrastructure to provide stability to the mine.



Production profile



Cash flow chart



Page 1 of 1

Economics summary

Internal rate of return	40%
NPV (including sunk costs)	US$6,681
NPV (2018+)	US$6,681
Cu required @ 10%	US$2,653 /t
Capex	US$3,040 mn
Capex / t Cu production	US$18,842
Capex / t Cu equ. production	US$17,499
Project type	Brownfield
Project status	Permitting
Ore reserves / resources	540 mt
Copper grade	1.90% Cu
Contained copper	10,260 kt
Commissioning	2018
Peak copper production	177 ktpa
Average LOM production	161 ktpa
Life of mine	33+
Gross unit cost	US$2,271 /t
Net unit cost (C1)	US$349 /t

Source: Company data, Goldman Sachs Global Investment Research

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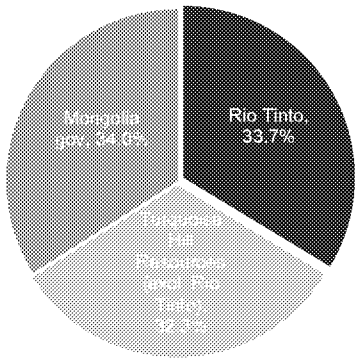
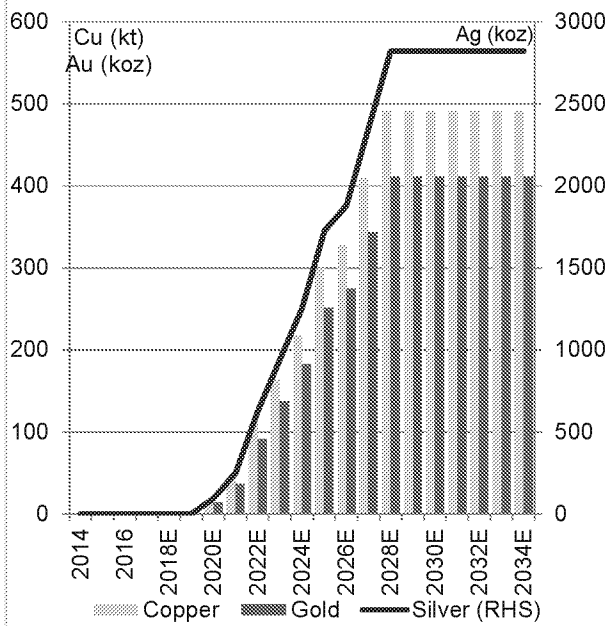
Exhibit 143: Oyu Tolgoi Block Cave

Oyu Tolgoi Block Cave	Mongolia	343 ktpa	US$5,395 mn	14% IRR

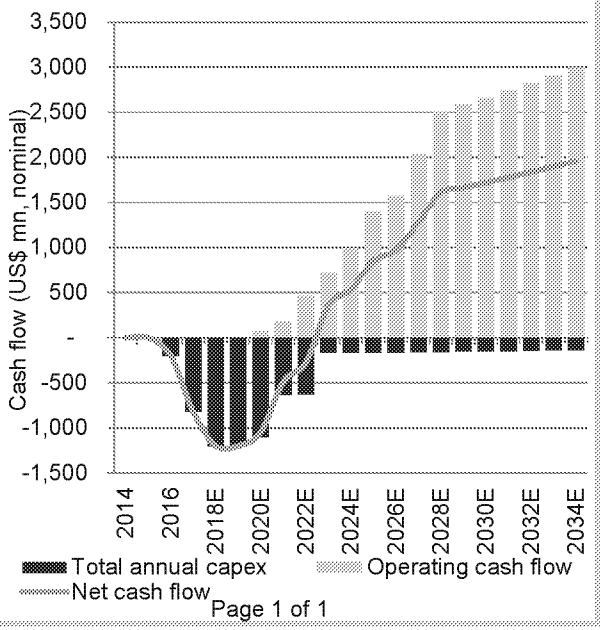
Phase 2 of the Oyu Tolgoi project consists of a 95 ktpd block cave operation at the Hugo North deposit. Oyu Tolgoi is the largest mining undertaking in Mongolia's history, with the mine (open pit and underground) expected to produce c.500 ktpa of copper and 400 kozpa of gold, as well as strong silver production for the first ten years. This is based on total concentrator capacity of 100 ktpd, with a decision to expand to 160 ktpd not required in the near future. A technical report was released in October 2016. Under this, ore from the open pit will be mostly displaced by higher grade ore from the underground operation until the latter ceases. The project was approved by the partners in May 2016. The latest capex estimate by Rio Tinto is US$5.1bn for the underground development in Phase 2 with US$4.3bn left to be spent as of 1H18, we assume inflation. First production from the mine is expected in mid 2020 with sustainable first production in 2021 with the full ramp-up expected by 2027. More recently there have been some discussions with the government, including differences over the amount of taxes owed and a power contract. The government has reinstated a decade-old agreement ordering the mining company to source electricity locally, which could be highly inflationary in our view.



Production profile



Cash flow chart



Page 1 of 1

Economics summary

Internal rate of return	14%
NPV (including sunk costs)	US$4,073
NPV (2018+)	US$5,130
Cu required @ 15%	US$6,791 /t
Capex	US$5,395 mn
Capex / t Cu production	US$15,749
Capex / t Cu equ. production	US$13,374
Project type	Brownfield
Project status	Construction
Ore reserves / resources	499 mt
Copper grade	1.66% Cu
Contained copper	8,283 kt
Commissioning	2020
Peak copper production	491 ktpa
Average LOM production	343 ktpa
Life of mine	22
Gross unit cost	US$3,565 /t
Net unit cost (C1)	US$2,393 /t

Source: Company data, Goldman Sachs Global Investment Research

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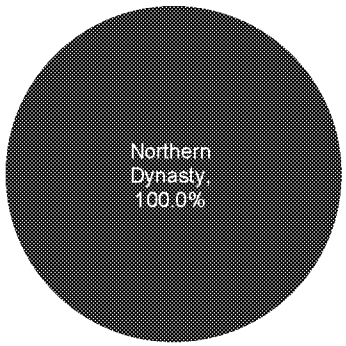
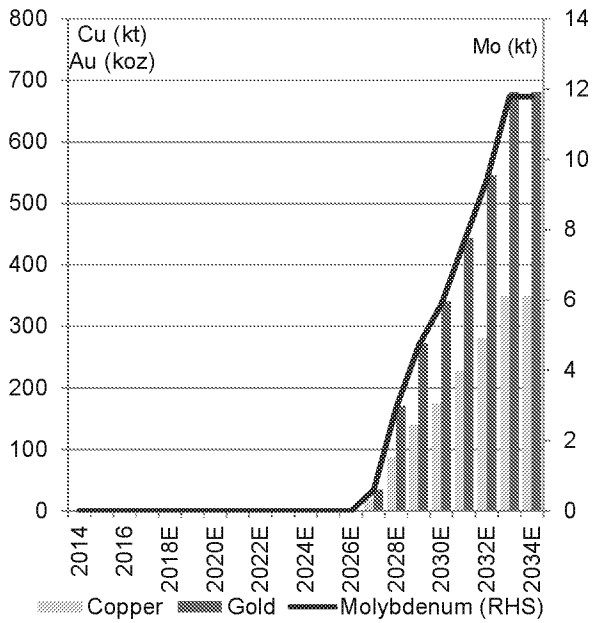
Exhibit 144: Pebble

Pebble	USA	301 ktpa	US$5,800 mn	13% IRR

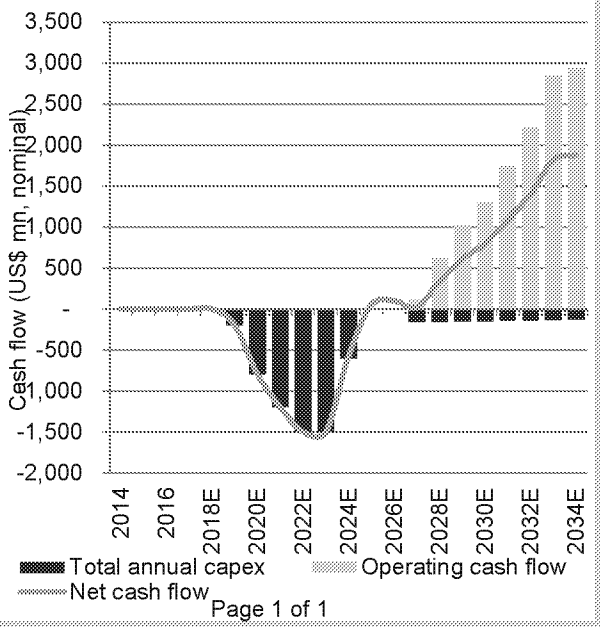
Located in Alaska, the Pebble deposit is 100% owned by Northern Dynasty Minerals Ltd. The project was previously owned by a 50/50 JV between Anglo American and Northern Dynasty, but Anglo pulled out in September 2013. Rio Tinto divested its 19.1% stake in Northern Dynasty in April 2014. Since Northern Dynasty acquired the Pebble asset in 2001 from Teck Resources, it has expanded the resource base by more than 1000% after launching an extensive exploration programme. About US$800 mn has been spent on the project so far. In April 2017, the company received land use permit from the Alaskan government paving way for further development. The project received a lot of media attention after the Trump administration announced that it would look to go ahead with the project. In July 2018 the US Army Corps of Engineers announced that a draft EIS will be completed in January 2019. First Quantum late last year also announced a partnership with Northern Dynasty to invest in the project but subsequently withdrew in May 2018 post an EPA announcement that the project is not viable given the amount of damage it estimated it could have on the local environment. While Northern Dynasty said that it remains confident the project can come online, we believe the timeline is likely to get extended.



Production profile



Cash flow chart



Page 1 of 1

Economics summary

Internal rate of return	13%
NPV (including sunk costs)	US$4,306
NPV (2018+)	US$4,306
Cu required @ 10%	US$4,604 /t
Capex	US$5,800 mn
Capex / t Cu production	US$19,265
Capex / t Cu equ. production	US$13,089
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	6,456 mt
Copper grade	0.40% Cu
Contained copper	25,824 kt
Commissioning	2027
Peak copper production	350 ktpa
Average LOM production	301 ktpa
Life of mine	24+
Gross unit cost	US$4,087 /t
Net unit cost (C1)	US$974 /t

Source: Company data, Goldman Sachs Global Investment Research

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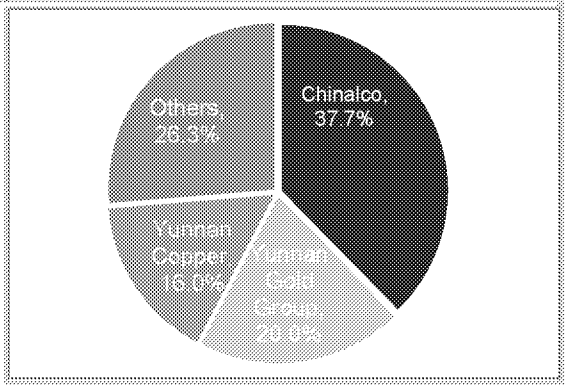
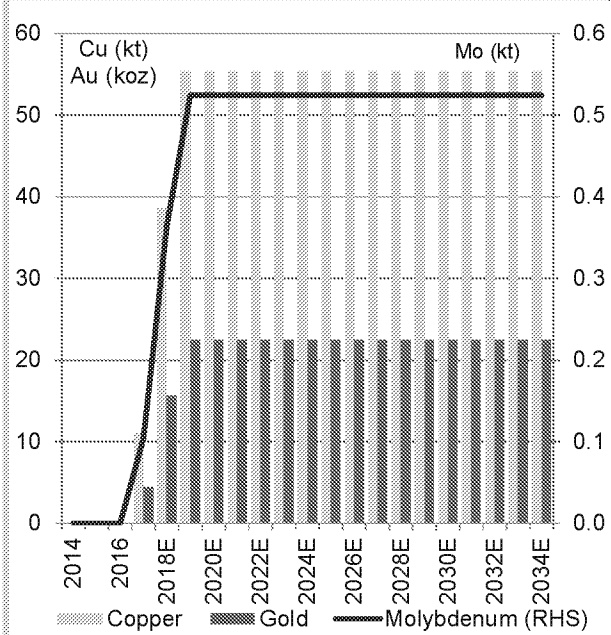
Exhibit 145: Pulang

Pulang	China	53 ktpa	US$950 mn	9% IRR

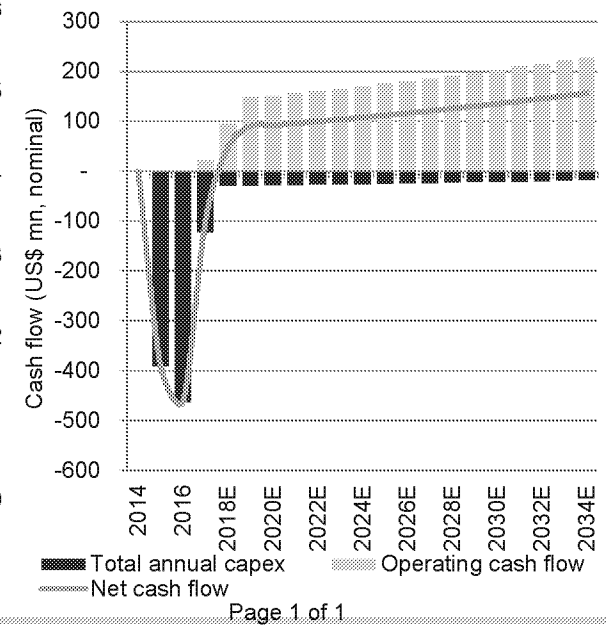
Pulang is a greenfield copper mine located in Shangri-la County in Yunnan province of China. It is an underground mine containing copper-molybdenum deposit. It is owned by Yunnan Diqing Nonferrous Metals Co. Ltd which is in turn owned by Yunnan Copper Group (65%) (a subsidiary of Chinalco), Yunnan Gold Mining Group (20%) and Diqing Tibetan Autonomous Prefecture Developing Investment Group (15%). Yunnan Copper announced in 2016 that it would acquire 100% of Yunnan Diqing Nonferrous Metals but the transaction is not complete yet. Yunnan Copper said earlier this year that it was planning to acquire a 50.01% stake in Diqing Nonferrous for US$230mn. The Pulang mine was commissioned in March 2017 and is projected to the be largest undeground mine in China once fully ramped. The throughput of the mine is 12.5mtpa and is expected to produce an average of 50ktpa of copper over a mine life of 19 years. The concentrate from the mine is to be shipped to an integrated smelter in Kunming for refining. The pre-production capex for the mine is c.US$950 mn. Yunnan Copper has plans for a Phase II expansion but we currently model only Phase I while awaiting further information on Phase I ramp-up and feasibility study for Phase II.



Production profile



Cash flow chart



Page 1 of 1

Economics summary

Internal rate of return	9%
NPV (including sunk costs)	US$174
NPV (2018+)	US$1,194
Cu required @ 15%	US$8,221 /t
Capex	US$950 mn
Capex / t Cu production	US$17,988
Capex / t Cu equ. production	US$16,061
Project type	Greenfield
Project status	Producing
Ore reserves / resources	280 mt
Copper grade	0.51% Cu
Contained copper	1,426 kt
Commissioning	2017
Peak copper production	55 ktpa
Average LOM production	53 ktpa
Life of mine	24
Gross unit cost	US$4,405 /t
Net unit cost (C1)	US$3,625 /t

Source: Company data, Goldman Sachs Global Investment Research

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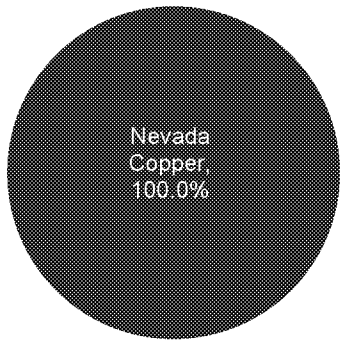
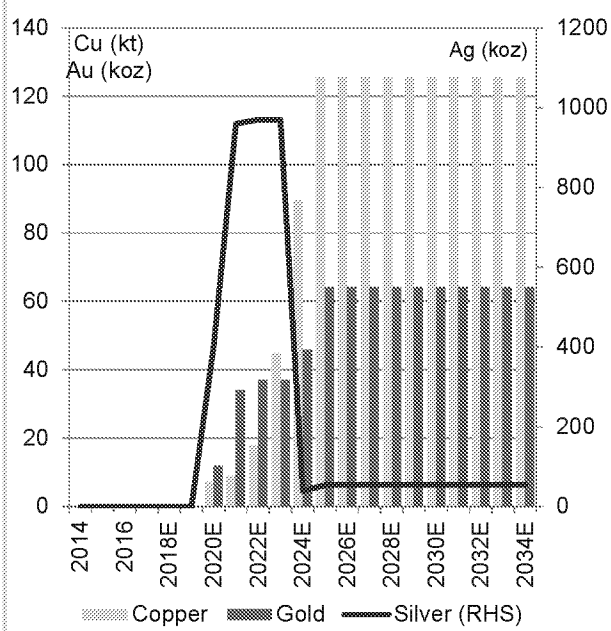
Exhibit 146: Pumpkin Hollow

Pumpkin Hollow	USA	90 ktpa	US$1,100 mn	17% IRR

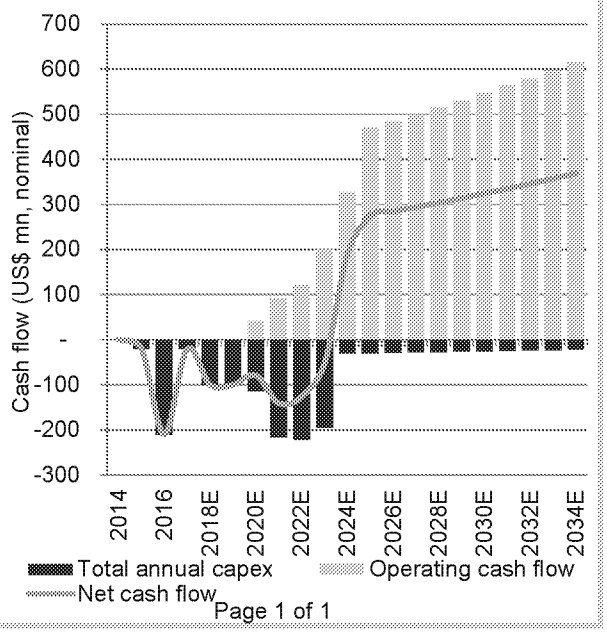
Pumpkin Hollow, acquired by Nevada Copper in 2005, is a high-grade iron oxide-copper-gold deposit located near Nevada, USA. In September 2017 Nevada Copper completed a Technical Report which comprised a Pre-feasibility Study for a 5ktpd underground project and a Feasibility study for a 70ktpd open pit/underground project to improve economics. The two projects are mutually exclusive and both viable development options. We model the smaller 6ktpd project first and expect the company to embark on the larger project post 2021. The expansion contemplates a 63.5ktpd open pit mine and 6.5ktpd underground mine, feeding a single 70ktpd concentrator with an initial mine life of 23 years and an initial capex US$1.04bn. The project is fully permitted and construction ready. Nevada Copper recently signed a pre-works contract with Cementations USA Inc. and secured key long-lead times which should de-risk the re-start of contruction of the company's 5ktpd underground project, targeting first production in 2019. In December, Nevada Copper announced it had entered into arrangement for a US$378mn construction financing and recapitalisation package which will enable it to start production. We model first production in 2020 vs. the company's guidance of 2019.



Production profile



Cash flow chart



Economics summary

Internal rate of return	17%
NPV (including sunk costs)	US$1,330
NPV (2018+)	US$1,596
Cu required @ 10%	US$4,938 /t
Capex	US$1,100 mn
Capex / t Cu production	US$12,197
Capex / t Cu equ. production	US$10,884
Project type	Greenfield
Project status	Construction
Ore reserves / resources	572 mt
Copper grade	0.44% Cu
Contained copper	2,516 kt
Commissioning	2020
Peak copper production	125 ktpa
Average LOM production	90 ktpa
Life of mine	24
Gross unit cost	US$3,804 /t
Net unit cost (C1)	US$3,144 /t

Source: Company data, Goldman Sachs Global Investment Research

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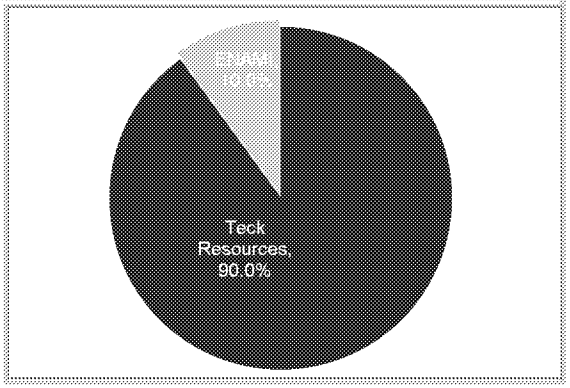
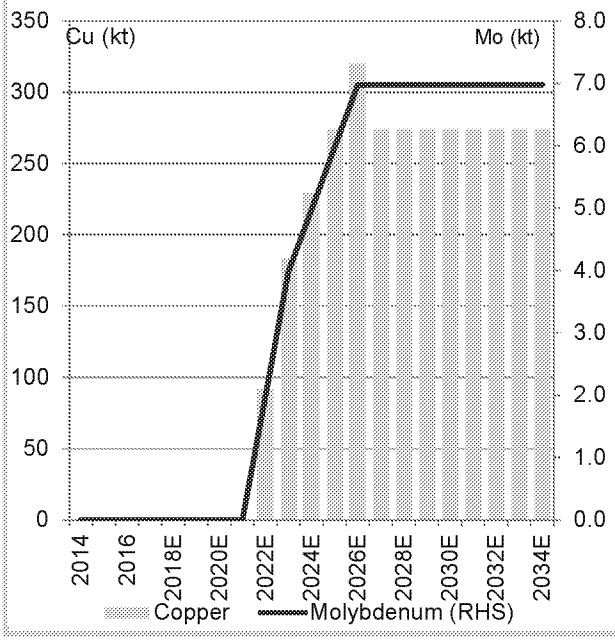
Exhibit 147: Quebrada Blanca II

Quebrada Blanca II	Chile	264 ktpa	US$4,900 mn	14% IRR

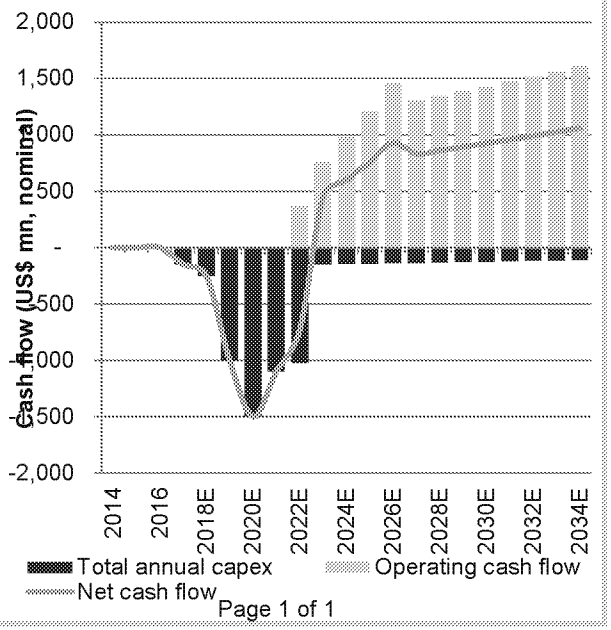
The Quebrada Blanca mine is an open pit operation located in Region I in Northern Chile. Teck recently increased its stake to 90% for US$162.5mn. The remaining stake is held by Empresa Nacional de Mineria (10%). The project is expected to have an annual production capacity of 300ktpa of copper equivalent for the first 5 years of mine life. The project entails the construction of a 140 ktpd concentrator along with concentrate and desalinated water pipelines connecting to a new port facility 165 km away. In February 2017, the company released a technical report on the updated feasibility study. The Social and Environmental Impact Assessment (SEIA) for the project was submitted in September 2016 and in August 2018 Teck announced it had received regulatory approval from the Environmental Committee of Tarapaca with the potential to sanction the project in 2H18 and a c.3 year production schedule. Teck guided to a total project capex bill of c.US$4.7 bn in 2016 dollars as per the latest feasibility study. We currently model a start in 2022 assuming the Environmental Assessment Service (SEA) is approved soon and the board sanctions it in 2H18 - note according to the company the first production is expected by mid-2021. In July 2018 Teck's CEO said they are seeking a partner for the project ahead of a final decision on moving forward with construction.



Production profile



Cash flow chart



Page 1 of 1

Economics summary

Internal rate of return	14%
NPV (including sunk costs)	US$3,387
NPV (2018+)	US$3,540
Cu required @ 15%	US$7,083 /t
Capex	US$4,900 mn
Capex / t Cu production	US$18,543
Capex / t Cu equ. production	US$17,314
Project type	Brownfield
Project status	Permitting
Ore reserves / resources	1,259 mt
Copper grade	0.51% Cu
Contained copper	6,420 kt
Commissioning	2022
Peak copper production	320 ktpa
Average LOM production	264 ktpa
Life of mine	27
Gross unit cost	US$3,429 /t
Net unit cost (C1)	US$3,018 /t

Source: Company data, Goldman Sachs Global Investment Research

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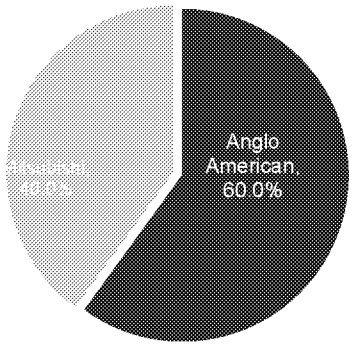
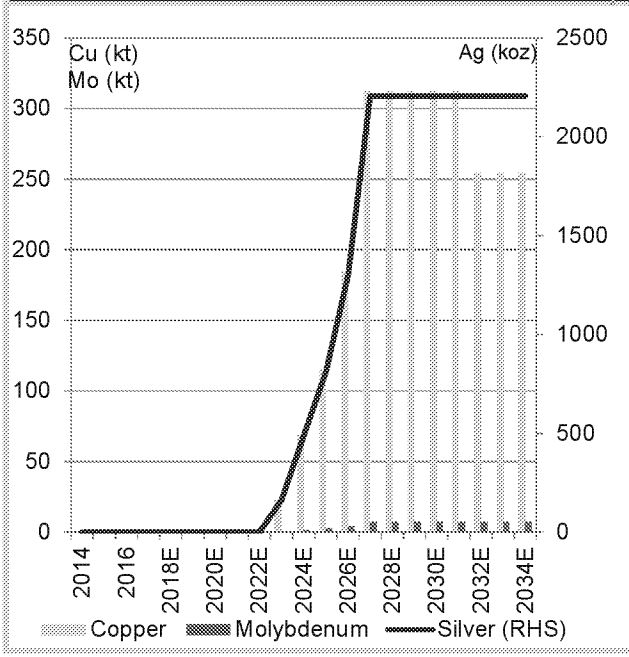
Exhibit 148: Quellaveco

Quellaveco	Peru	243 ktpa	US$5,400 mn	11% IRR

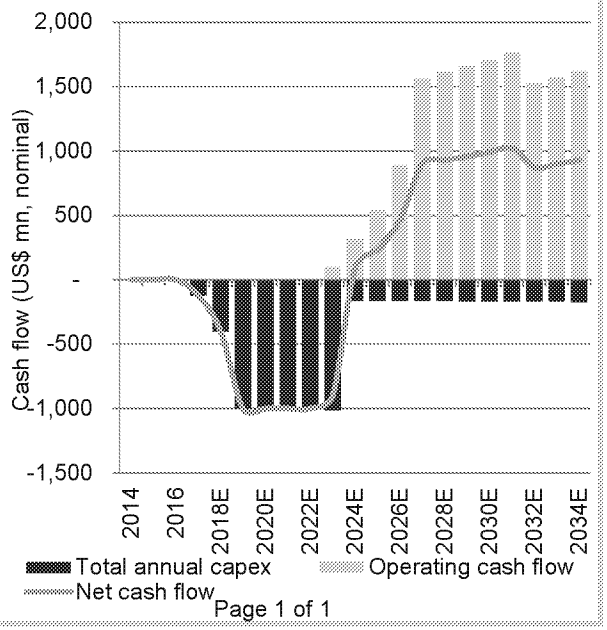
The Quellaveco mine is a greenfield asset located in southern Peru. The project has received support from the local community for its water plan and is now waiting for construction permits from the Peruvian government. Quellaveco is one of the most advanced copper projects currently in the development phase. The project is likely to be presented to board for approval soon according to Anglo American, with approvals expected with the 1H18 results. More recently, Mitsubishi increased its stake in the project from 18.1% to 40% for a total consideration of US$600m with Anglo diluting its stake down to 60%. The project was greenlit by Anglo with the 1H18 results. The company has guided to c. 300Ktpa of copper eq. production. According to the company the first production is expected to be in 2022 with production ramping up in 2023. During the first ten years the mine is slated to produce c. 300Ktpa of copper at a cash cost of US$1.05/lb of copper.



Production profile



Cash flow chart



Page 1 of 1

Economics summary

Internal rate of return	11%
NPV (including sunk costs)	US$1,775
NPV (2018+)	US$1,901
Cu required @ 15%	US$8,750 /t
Capex	US$5,400 mn
Capex / t Cu production	US$22,258
Capex / t Cu equ. production	US$20,184
Project type	Greenfield
Project status	Construction
Ore reserves / resources	1,333 mt
Copper grade	0.57% Cu
Contained copper	7,687 kt
Commissioning	2023
Peak copper production	313 ktpa
Average LOM production	243 ktpa
Life of mine	28+
Gross unit cost	US$2,952 /t
Net unit cost (C1)	US$2,369 /t

Source: Company data, Goldman Sachs Global Investment Research

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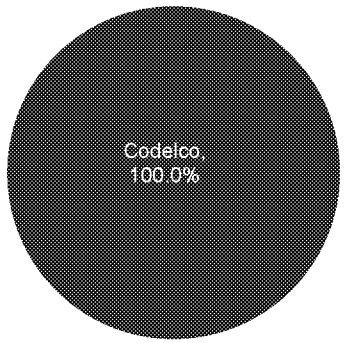
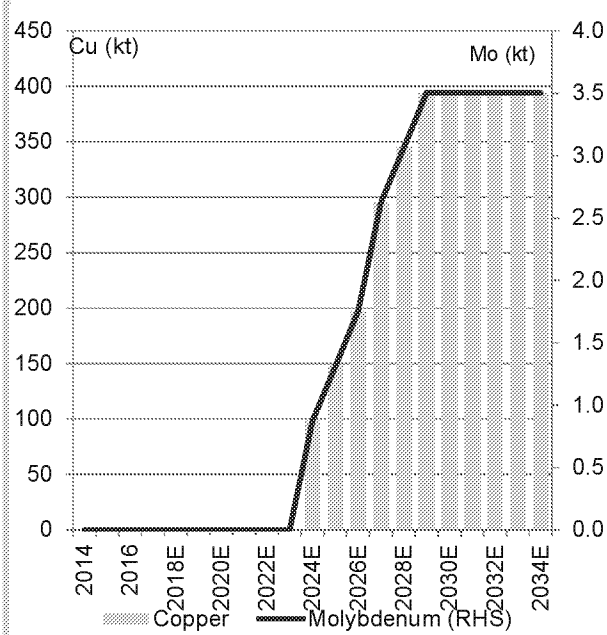
Exhibit 149: Radomiro Tomic

Radomiro Tomic	Chile	343 ktpa	US$5,900 mn	15% IRR

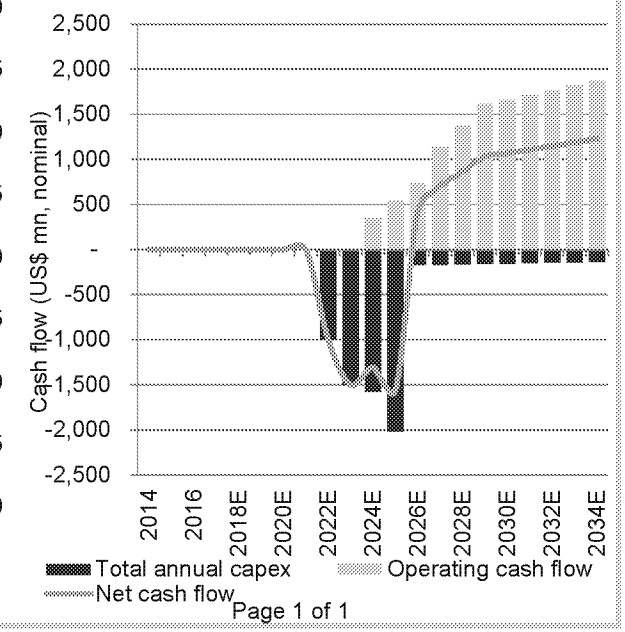
The 100% Codelco-owned Radomiro Tomic mine is located in Chile and is currently undergoing Phase 2 of development. The intial Phase 2 plan was mining the sulphide ore reserves, which were estimated at 2.8 bn tonnes, grading 0.5% copper with annual production expected to average 343 kt of copper from a planned 200 ktpd concentrator plant, offsetting expected sharp declines from the existing copper oxide production from 2018. However, due to water/capital constraints the company is now planning 2 dedicated 100kt/d concentrators. Stage 1 will include a 100kt/d concentrator which will use desalinated sea water. The second concentrator is also expected to operate with deslainated water. The project is in feasibility stage and the company has recieved EIA approvals in Jan 2016. The next stage of the project is approval by Codelco board and Cochilco. Recent newsflow suggests that Codelco is prioritising other project over Radomiro Tomic. Total capital investment for Stage 1 is estimated by Codelco at US$3.5bn and for phase 2 is expected to be US$2.5bn. Given the lack of any meaningful newsflow on the project, we see this as a low probablity project.



Production profile



Cash flow chart



Economics summary

Internal rate of return	15%
NPV (including sunk costs)	US$3,654
NPV (2018+)	US$3,654
Cu required @ 15%	US$6,553 /t
Capex	US$5,900 mn
Capex / t Cu production	US$17,201
Capex / t Cu equ. production	US$16,714
Project type	Brownfield
Project status	Feasibility
Ore reserves / resources	2,125 mt
Copper grade	0.50% Cu
Contained copper	10,625 kt
Commissioning	2024
Peak copper production	394 ktpa
Average LOM production	343 ktpa
Life of mine	27+
Gross unit cost	US$3,406 /t
Net unit cost (C1)	US$3,239 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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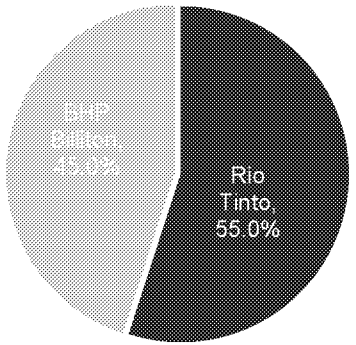
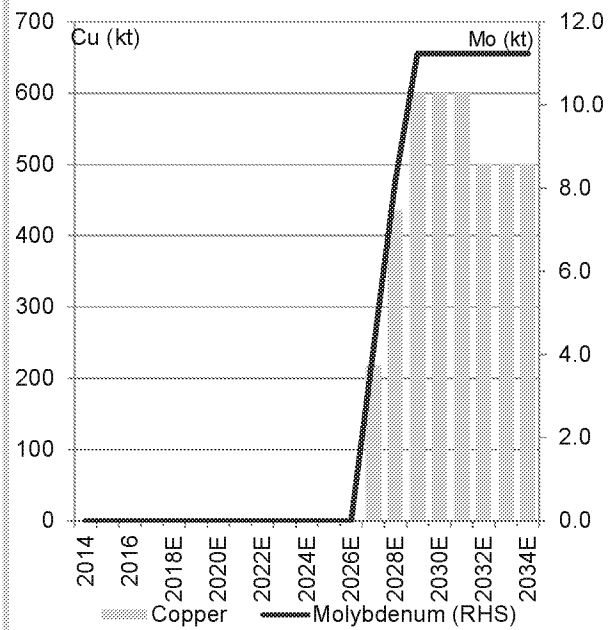
Exhibit 150: Resolution

Resolution	USA	498 ktpa	US$6,500 mn	15% IRR

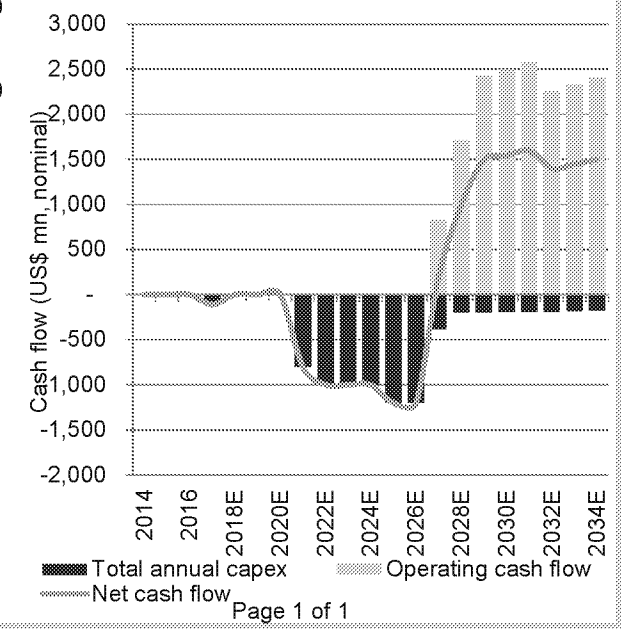
The Resolution copper project is located in Superior, Arizona, USA. Rio Tinto has a 55% stake, while BHP holds 45%. Drill results suggest a large ore body ranging 1,500-2,130 metres below the surface, which Rio expects will support an underground block caving operation processing 120 ktpd (up to 150 ktpd) of ore and which will produce an average 500 ktpa of copper for at least 40 years, on our estimates. A general plan of operations was published in November 2013 by the JV company, suggesting that underground development work and surface facility construction would take up to ten years. In December 2014, the US Federal government agreed to a land swap, which is currently undergoing environmental and regulatory review. The project is currently nearing the end of the prefeasibility phase. In December 2017 Rio approved a US$368mn commitment to further advance the Resolution Copper project. The funding will improve infrastructure and facilitate mine planning as part of the pre-feasibility study. We expect first production no sooner than 2027 (compared with previous guidance from the company of a 2021 start) and estimate capex at c.US$6.5 bn (excluding more than US$1.3 bn already spent) pending further guidance from the company.



Production profile



Cash flow chart



Economics summary

Internal rate of return	15%
NPV (including sunk costs)	US$4,197
NPV (2018+)	US$4,309
Cu required @ 10%	US$5,500 /t
Capex	US$6,500 mn
Capex / t Cu production	US$13,040
Capex / t Cu equ. production	US$12,279
Project type	Greenfield
Project status	Scoping
Ore reserves / resources	1,787 mt
Copper grade	1.54% Cu
Contained copper	27,520 kt
Commissioning	2027
Peak copper production	600 ktpa
Average LOM production	498 ktpa
Life of mine	24+
Gross unit cost	US$3,633 /t
Net unit cost (C1)	US$3,280 /t

Source: Company data, Goldman Sachs Global Investment Research

Page 1 of 1

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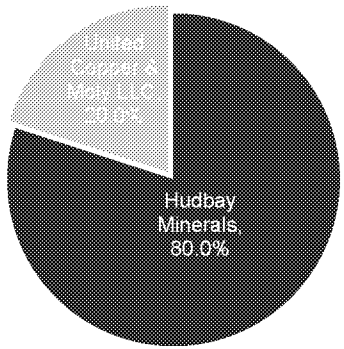
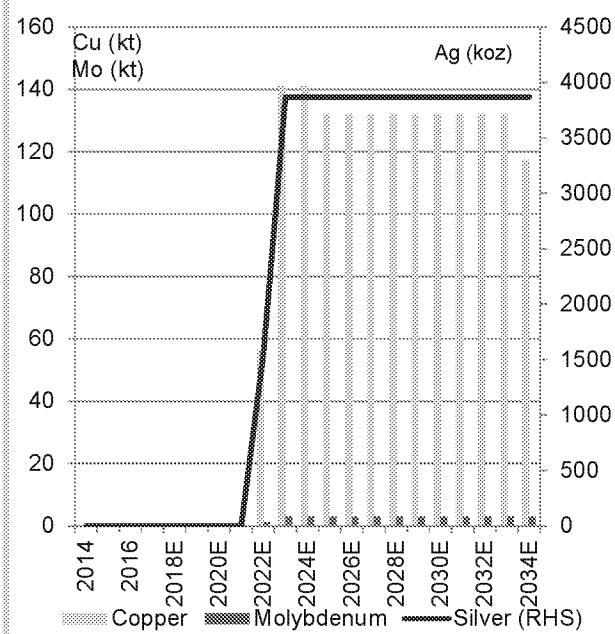
Exhibit 151: Rosemont

Rosemont	USA	125 ktpa	US$2,021 mn	13% IRR

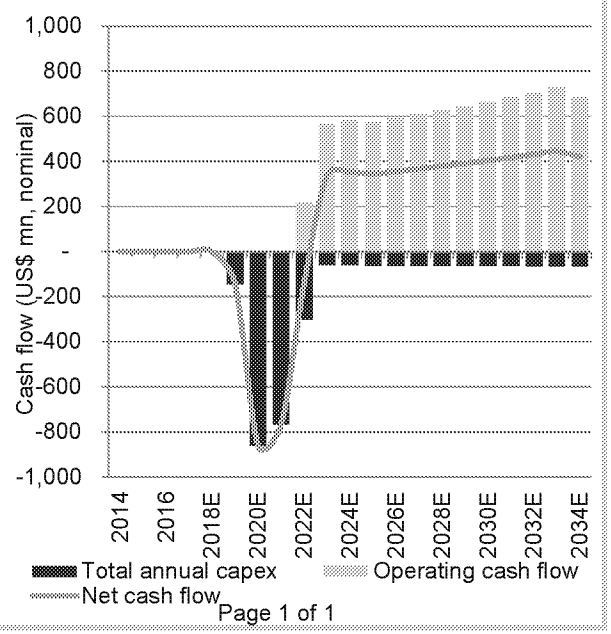
The Rosemont copper mine is located in Arizona, US, 50 km southeast of Tucson. The mine is currently 92.05% owned by Hudbay Minerals (after it acquired Augusta Resources in June 2014) subject to a 20% joint venture with United Copper and Moly LLC. A feasibility study was released in March 2017. The company had initially guided to US$1.3 bn capex, which was then raised to US$1.9 bn. The mine will produce c. 110Ktpa of copper over its LOM with 127Kt over the first 10 years. The project received a Final Record of Decision from the U.S. Forest Service in June 2017 and is preparing to receive Section 404 Water Permit and complete the Mine Plan of Operations. The project is shovel ready and the company is currently engaged in permitting and community engagement. Construction of the project can begin as soon as the permitting is compete.



Production profile



Cash flow chart



Page 1 of 1

Economics summary

Internal rate of return	13%
NPV (including sunk costs)	US$685
NPV (2018+)	US$685
Cu required @ 10%	US$6,005 /t
Capex	US$2,021 mn
Capex / t Cu production	US$16,136
Capex / t Cu equ. production	US$14,058
Project type	Greenfield
Project status	Permitting
Ore reserves / resources	537 mt
Copper grade	0.45% Cu
Contained copper	2,417 kt
Commissioning	2022
Peak copper production	141 ktpa
Average LOM production	125 ktpa
Life of mine	19
Gross unit cost	US$3,633 /t
Net unit cost (C1)	US$2,669 /t

Source: Company data, Goldman Sachs Global Investment Research

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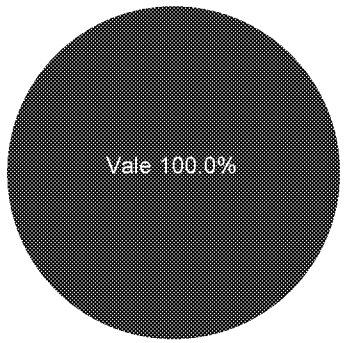
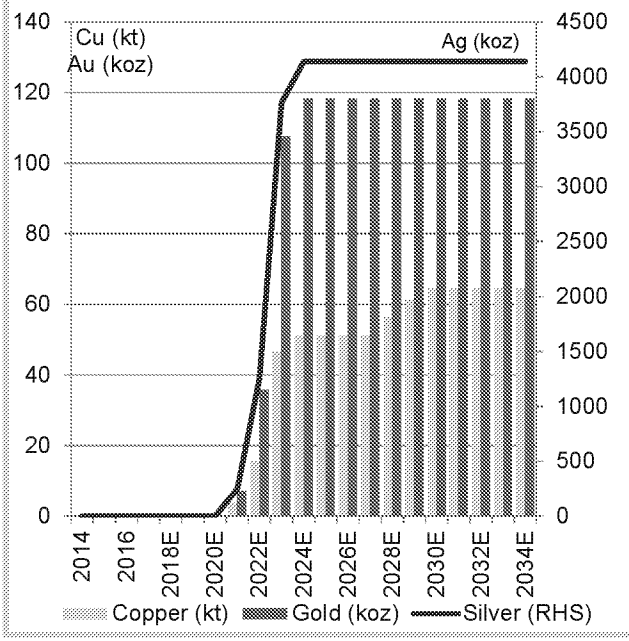
Exhibit 152: Salobo 3

Salobo 3	Brazil	60 ktpa	US$1,100 mn	20% IRR

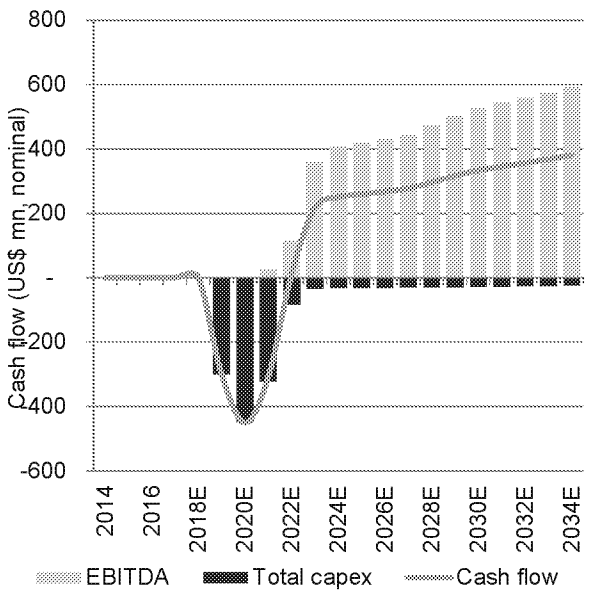
Salobo 3 is the next addition to the Salobo mine in Brazil. The mine as of now operates at a 24Mt/a ore conventional open pit mine and concentrator. In June 2012 Salobo started Phase I (Salobo I) with a mill capacity of 12Mt/a ore. The initial capex of this was US$2,507mn. In June 2014, Vale brought into production the Salobo II project, which doubled the nameplate milling capacity from 12Mt/a to 24Mt/a. Both Salobo I & II operate just as one open pit. Vale in 1Q18 said that it was studying the possibility of carrying out the Salobo III expansion. This will involve the expansion of the concentrator from 24Mt/a to 36Mt/a. Wood Mackenzie estimates the capex to be c. US$1.5bn (to which we add our capex inflation estimate) and expects the decision to start construction being taken soon. Given the high copper prices and the reduced leverage of Vale - we believe that a decision for the expansion is likely to be taken soon. We expect capex to be started to spend in 2019 with first production in 2022. Full production is likely to be reached in 3-4 years and we estimate the full production of the new expansion at c. 65Kt.



Production profile



Cash flow chart



Page 1 of 1

Economics summary

Internal rate of return	20%
NPV (including sunk costs)	US$1,817
NPV (2018+)	US$1,817
Cu required @ 25%	US$4,870 /t
Capex	US$1,100 mn
Capex / t Cu production	US$18,343
Capex / t Cu equ. production	US$12,272
Project type	Brownfield
Project status	Pre-feasibility
Ore reserves / resources	1,178 mt
Copper grade	0.63% Cu
Contained copper	7,421 kt
Commissioning	2022
Peak copper production	65 ktpa
Average LOM production	60 ktpa
Life of mine	30+
Gross unit cost	US$3,970 /t
Net unit cost (C1)	-US$442 /t

Source: Company data, Goldman Sachs Global Investment Research

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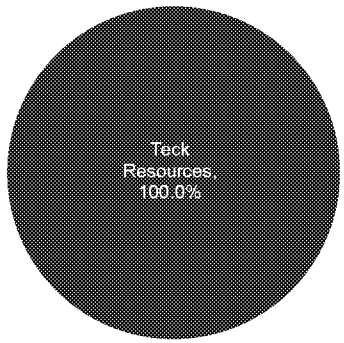
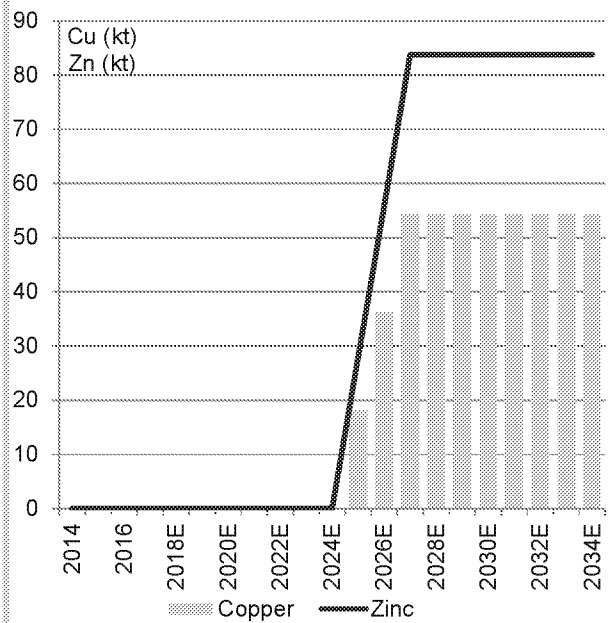
Exhibit 153: San Nicolas

San Nicolas	Mexico	51 ktpa	US$750 mn	24% IRR

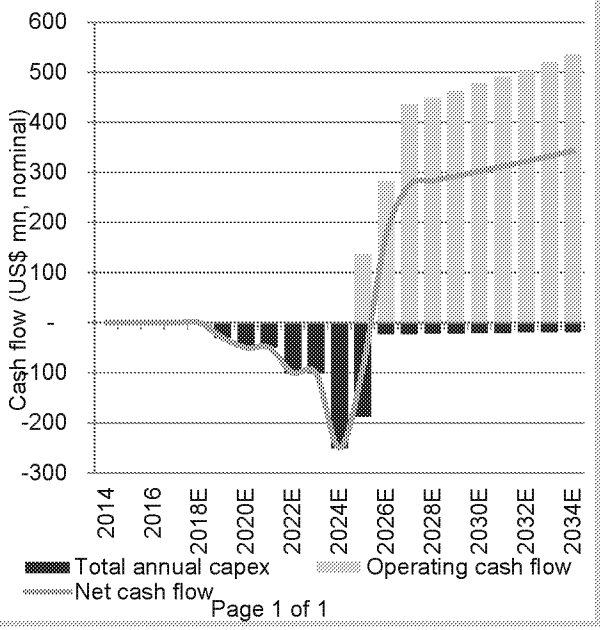
San Nicolas is a copper-zinc project owned by Teck Resources in Mexico. Teck increased its shareholding in the project from 79% to 100% by buying out GoldCorp's minorities for US$50mn last year. While the details around the project have been scant - the last full set of details (resources etc.) released was in 2001 - we believe that the recent commetnary by the company around the project has been encouraging. In 3Q17, Teck initiated the environmental and social baseline studies, preliminary hydrogeological studies, and project engineering programs were initiated in the third quarter of 2017 in support of a prefeasibility study and an SEIA which it is looking to finish by 2H19. The company in 2015 estimated capex to be c. US$585mn (we increase that number to reflect the recent inflation). Teck plans to spend US$30mn in exploration expenditure at the mine. We estimate the project to come online in 2025, but given the smaller size of the project there is upside risk to this project coming online sooner in our view.



Production profile



Cash flow chart



Economics summary

Internal rate of return	24%
NPV (including sunk costs)	US$1,140
NPV (2018+)	US$1,140
Cu required @ 12%	US$4,870 /t
Capex	US$750 mn
Capex / t Cu production	US$14,621
Capex / t Cu equ. production	US$8,641
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	92 mt
Copper grade	1.24% Cu
Contained copper	1,137 kt
Commissioning	2025
Peak copper production	54 ktpa
Average LOM production	51 ktpa
Life of mine	18
Gross unit cost	US$3,970 /t
Net unit cost (C1)	US$45 /t

Source: Company data, Goldman Sachs Global Investment Research

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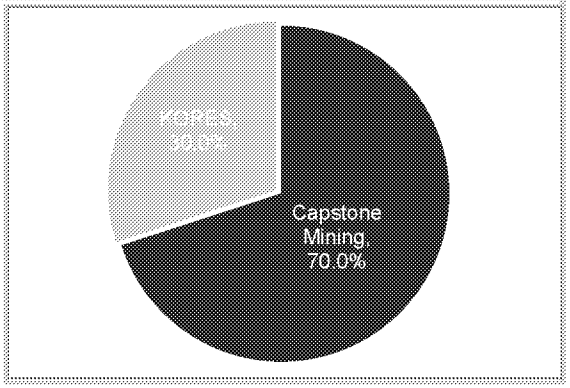
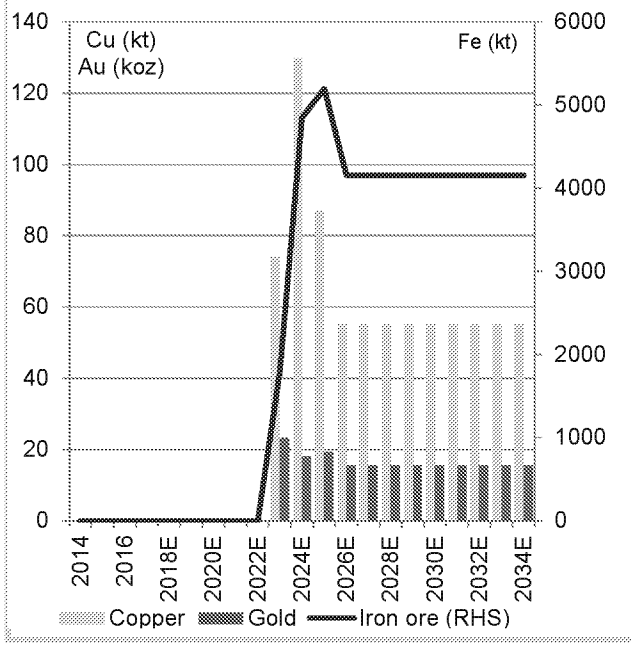
Exhibit 154: Santo Domingo

Santo Domingo	Chile	62 ktpa	US$1,850 mn	17% IRR

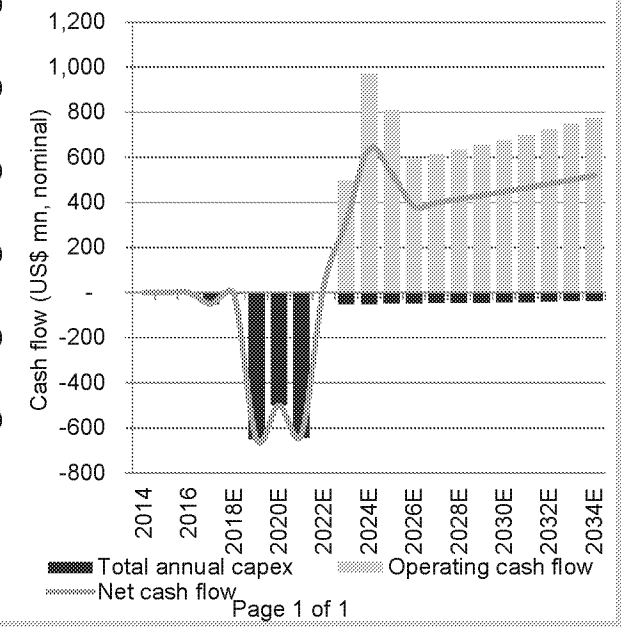
The Santo Domingo Project, owned 70% by Capstone and 30% by Korea Resources Corp (KORES), is located c.800 km north of Santiago, Chile. It is 60 km from the Pacific coast, providing seawater to the site and access to deep water port facilities and infrastructure such as rail, power lines and a smelter. Results of the 2014 feasibility study indicated an avg. annual production of 58 kt of copper (113 ktpa for the first five years), 4.2 mt of iron concentrate and 16 koz of gold, and estimated capex to be US$1.7 bn (we inflate that number). KORES acquired a 30% interest for US$194 mn. Under the agreement, it is responsible for arranging debt financing for 65% of the capital costs but in return has an offtake agreement for 50% of the copper and iron concentrate over the LOM. The Environmental Impact Assessment (EIA) for the project was approved in July 2015. In 2017, size long-lead permits were submitted and are pending approval. Current focus is on securing power for the project at an economical price and the owners are also looking to reach an agreement on sharing infrastructure which may reduce the capital cost of the project. The owners are currently updating costs for current conditions and evaluating opportunities which could eliminate the need for a port, as well as exploring interest from other parties to potentially reduce the owner's interest. We estimate start up in 2023.



Production profile



Cash flow chart



Page 1 of 1

Economics summary

Internal rate of return	17%
NPV (including sunk costs)	US$1,610
NPV (2018+)	US$1,662
Cu required @ 15%	US$5,476 /t
Capex	US$1,850 mn
Capex / t Cu production	US$29,959
Capex / t Cu equ. production	US$17,588
Project type	Greenfield
Project status	Feasibility
Ore reserves / resources	392 mt
Copper grade	0.30% Cu
Contained copper	1,175 kt
Commissioning	2023
Peak copper production	130 ktpa
Average LOM production	62 ktpa
Life of mine	18
Gross unit cost	US$2,044 /t
Net unit cost (C1)	-US$1,341 /t

Source: Company data, Goldman Sachs Global Investment Research

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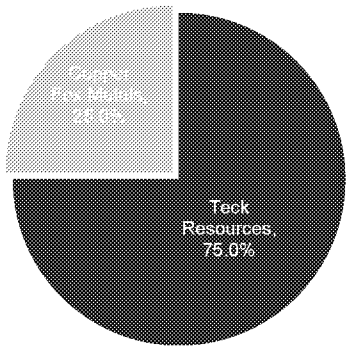
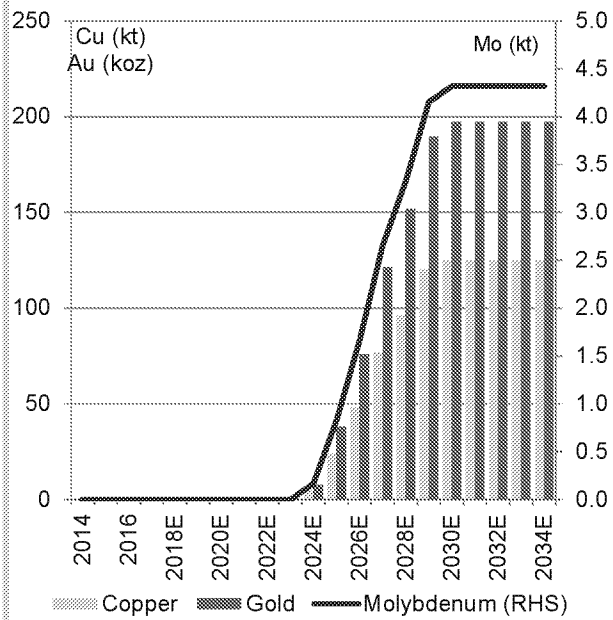
Exhibit 155: Schaft Creek

Schaft Creek	Canada	109 ktpa	US$3,700 mn	8% IRR

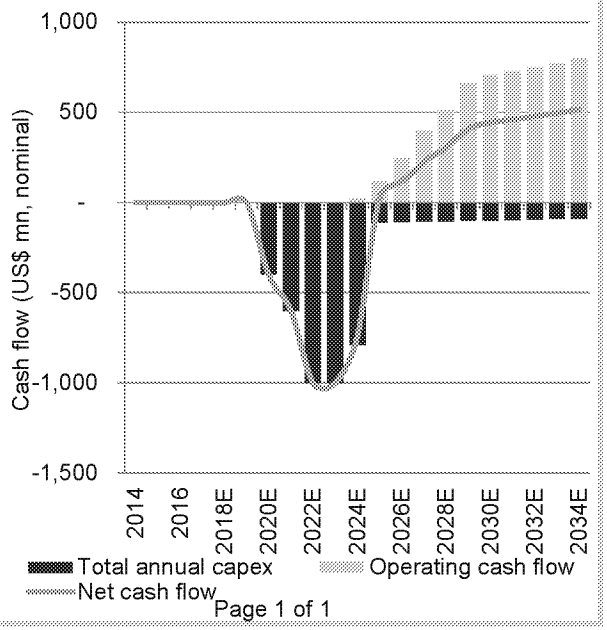
The Schaft Creek deposit is located in northwest British Columbia, Canada. The project was previously wholly owned by Copper Fox Metals; however, in July 2013, Copper Fox formed a JV with Teck Resources to further develop the project with Teck taking the majority share in the mine. A feasibility study was completed in January 2013 indicating an initial mine life of 21 years at a 130 ktpd milling rate from the open pit mine. Total capex for the project guided by the company is US$3.26 bn, but we add our capex escalation expectations to the guided number. In February 2018 Copper Fox Metals announced the 2018 Schaft Creek programme. The programme has a budget of US$0.8 mn and includes desktop studies to understand which scenarios add the best value to the project, collection of environmental data by external consultants and permitting/social activities which include ongoing consultation with the Tahltan First Nations on social and cultural matters. The Multi-Year Area Based Permit ("MYAB") has been filed with the Ministry of Mines for British Columbia. The main activities covered include approval for up to 50 diamond drill holes, 5 km of new drill road and 20 km of line cutting, none of which are planned at this stage.The focus for 2018 will be to: a) consultation with the Tahltan First Nations on social and cultural matters and evaluate development alternatives with potentially improved economics.



Production profile



Cash flow chart



Economics summary

Internal rate of return	8%
NPV (including sunk costs)	US$7
NPV (2018+)	US$8
Cu required @ 10%	US$7,428 /t
Capex	US$3,700 mn
Capex / t Cu production	US$34,071
Capex / t Cu equ. production	US$23,834
Project type	Greenfield
Project status	Feasibility
Ore reserves / resources	941 mt
Copper grade	0.27% Cu
Contained copper	2,550 kt
Commissioning	2024
Peak copper production	125 ktpa
Average LOM production	109 ktpa
Life of mine	23
Gross unit cost	US$5,064 /t
Net unit cost (C1)	US$2,230 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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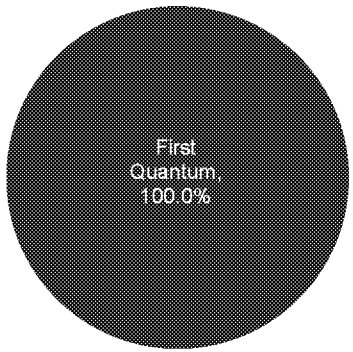
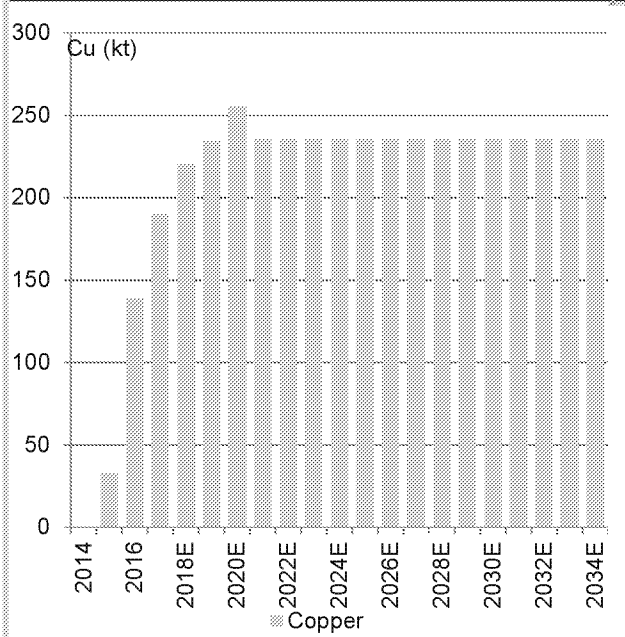
Exhibit 156: Sentinel

Sentinel	Zambia	220 ktpa	US$2,000 mn	20% IRR

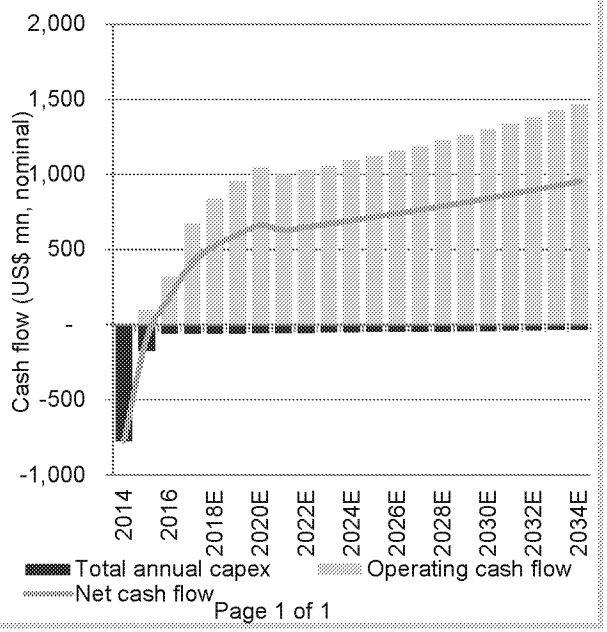
The Sentinel deposit is located in Zambia and is one of three mines that make up the Trident project. The project was commissioned in December 2014, 30 months from the start of full-scale construction. The project produced 190kt of copper in concentrate in 2017. The mine faced significant challenges in ramp-up given low copper prices and power issues in Zambia at the time. An agreement was reached with ZESCO and the Government of the Republic of Zambia in September 2017, whereby the company has accepted an increase in power tariffs under the stipulation that both Sentinel and Kansanshi can import a portion of their power and with a commitment from ZESCO to improve the stability and quality of power provided to the company's operations. First Quantum changed the mining layout and is transitioning to a terraced mining which is going to slow the ramp-up; guidance for 2019 is 235kt and for 2020 it is 250Kt+. The mine was initially ear-marked to produce c. 300Ktpa but given the smelting capacity constraints in Zambia we believe that 250Ktpa is likely going to be the upper limit until a decision is taken on building a new one.



Production profile



Cash flow chart



Economics summary

Internal rate of return	20%
NPV (including sunk costs)	US$5,275
NPV (2018+)	US$6,929
Cu required @ 15%	US$5,239 /t
Capex	US$2,000 mn
Capex / t Cu production	US$9,086
Capex / t Cu equ. production	US$9,086
Project type	Greenfield
Project status	Producing
Ore reserves / resources	894 mt
Copper grade	0.48% Cu
Contained copper	4,292 kt
Commissioning	2015
Peak copper production	255 ktpa
Average LOM production	220 ktpa
Life of mine	22
Gross unit cost	US$2,725 /t
Net unit cost (C1)	US$2,725 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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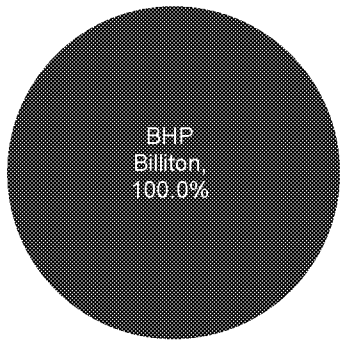
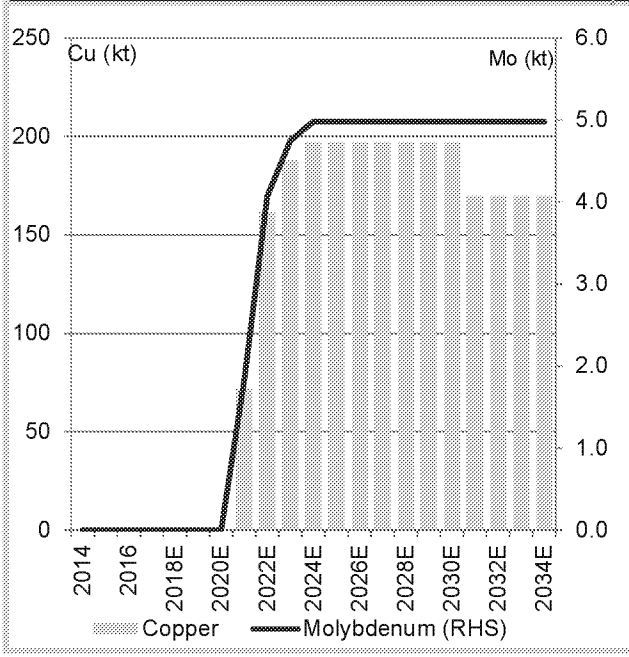
Exhibit 157: Spence growth option

Spence growth option	Chile	173 ktpa	US$2,510 mn	19% IRR

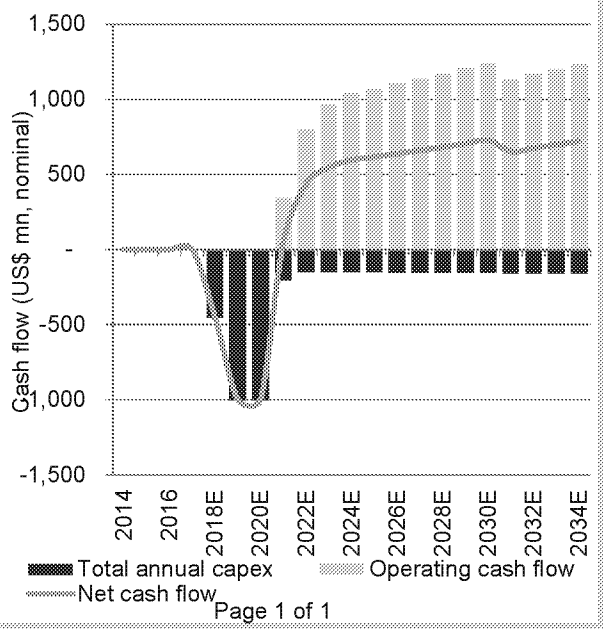
Spence Hypogene is an expansion project located in Chile. The project had been suspended in 2012 since BHP decided to first support its larger projects; however, it decided to restart the project in January 2013. The project was approved by the board in August 2017 with expected capex of US$2.46bn. The project will convert 1.3 Bt of Measured and Indicated Mineral Resources to hypogene sulphide Ore Reserves. BHP sees potential to exploit the hypogene resource through a 95 ktpd concentrator with longer-term expansion potential. BHP is guiding for capex of US$2.46bn. However, the desalination plant which is to be built at a capex of US$1.43bn will be paid for over the next 20 years. The decision to outsource the building of the desalination plant under a Build, Own, Operate and Transfer contract is unique - while it doesn't reduce the overall capex, it does reduce the initial outlay which makes the project screen better. The company expects first production in FY2021 - in line with our expectations - and anticipates the project to average production of ~185kt of copper in concentrate over the first 10 years. We expect the ramp-up to full capacity of c. 200Ktpa by 2025.



Production profile



Cash flow chart



Economics summary

Internal rate of return	19%
NPV (including sunk costs)	US$3,851
NPV (2018+)	US$3,851
Cu required @ 15%	US$5,697 /t
Capex	US$2,510 mn
Capex / t Cu production	US$14,492
Capex / t Cu equ. Production	US$12,933
Project type	Brownfield
Project status	Construction
Ore reserves / resources	1,300 mt
Copper grade	0.60% Cu
Contained copper	7,760 kt
Commissioning	2021
Peak copper production	197 ktpa
Average LOM production	173 ktpa
Life of mine	30+
Gross unit cost	US$2,498 /t
Net unit cost (C1)	US$1,778 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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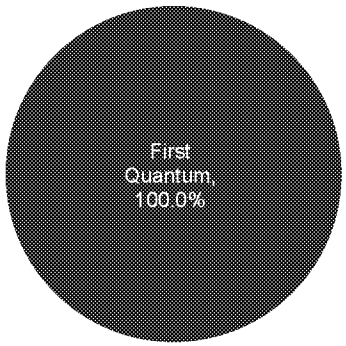
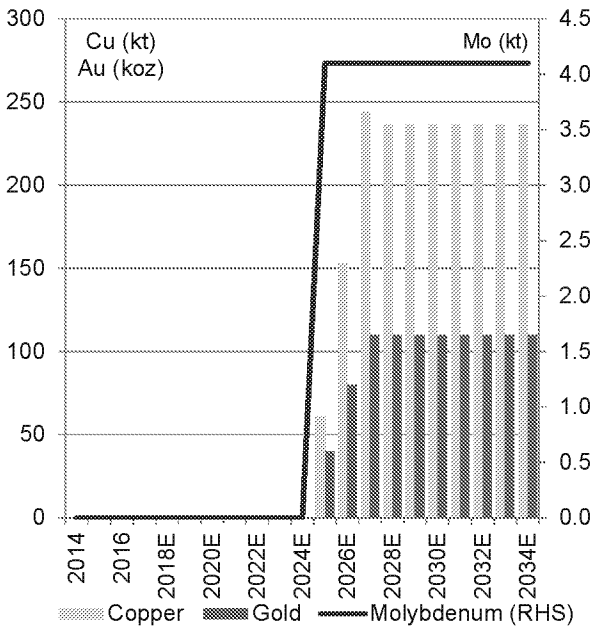
Exhibit 158: Taca Taca

Taca Taca	Argentina	227 ktpa	US$3,900 mn	16% IRR

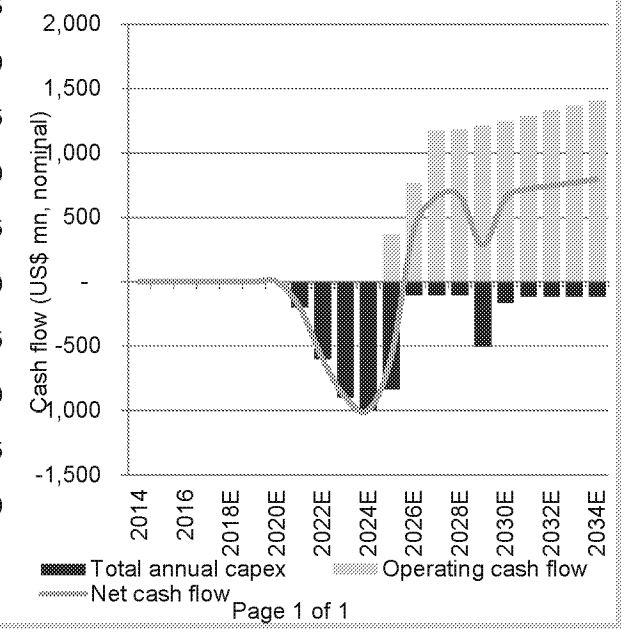
Taca Taca is wholly owned by First Quantum (which acquired the mine from Lumina Copper Corp. in 2014) and is a porphyry copper-gold-molybdenum deposit located in the Puna region of northwestern Argentina, approximately 230 km west of the provincial capital of Salta. A Preliminary Economic Assessment (PEA) was completed in April 2013. The project envisages a mine operating over a 26-year life delivering 120 ktpd of throughput to a concentrator comprising two milling and flotation lines in the first seven years, expanding to 180 ktpd in the eighth year through the addition of a third line. The increase in throughput corresponds with a decline in head grade as higher-grade supergene mineralisation is replaced by lower-grade primary mineralisation as the predominant material mined. Initial capex is estimated by the company at c.US$3.5 bn including the addition of a third milling and flotation line; we see potential upside to this estimate and assume US$3.9 bn. The company is still evaluating the best way to develop the project. Given the other preferences of the company - primary being ramping-up Cobre Panama - we believe that any decision on this mine is likely to be taken post 2020 - hence our estimate of first capex spend in 2021 and start-up in 2025.



Production profile



Cash flow chart



Page 1 of 1

Economics summary

Internal rate of return	16%
NPV (including sunk costs)	US$2,456
NPV (2018+)	US$2,456
Cu required @ 25%	US$9,437 /t
Capex	US$3,900 mn
Capex / t Cu production	US$17,192
Capex / t Cu equ. production	US$15,056
Project type	Greenfield
Project status	Scoping
Ore reserves / resources	2,165 mt
Copper grade	0.44% Cu
Contained copper	9,526 kt
Commissioning	2025
Peak copper production	244 ktpa
Average LOM production	227 ktpa
Life of mine	26+
Gross unit cost	US$3,406 /t
Net unit cost (C1)	US$1,308 /t

Source: Company data, Goldman Sachs Global Investment Research

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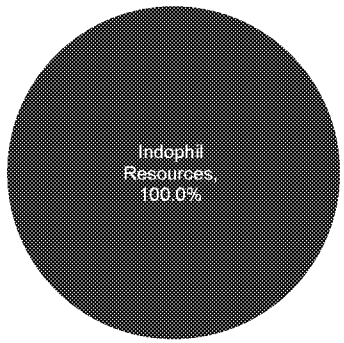
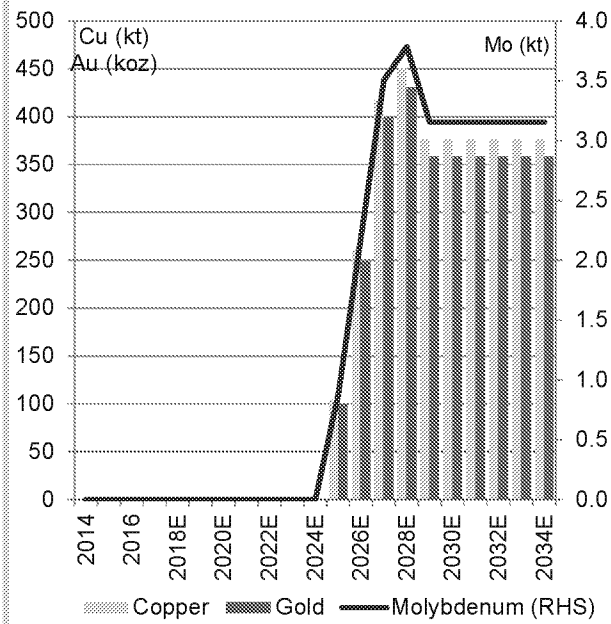
Exhibit 159: Tampakan

Tampakan	Philippines	361 ktpa	US$6,100 mn	16% IRR

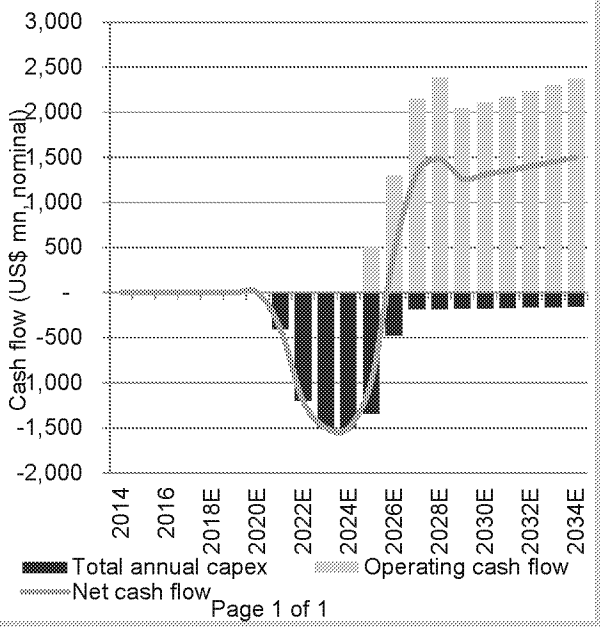
The Tampakan project, now 100% owned by Indophil Resources, is a greenfield open pit mine located on the Southern Philippines island of Mindanao. In June 2015, Glencore sold its stake in the project to Indophil Resources, consistent with the company's policy not to develop large greenfield projects. Previously, in 2007, Xstrata Copper assumed management control of the Tampakan copper-gold project through its subsidiary Sagittarius Mines Inc (SMI). The pre-feasibility study completed in 2009 was submitted to the Philippines government with average annual production of 375 ktpa of copper and 360 koz of gold over the initial 17-year mine life, and considerable growth potential. The latest provided estimated capital cost is US$5.9 bn, inclusive of US$900 mn for a power plant (up from an estimated US$4.8 bn). In February 2017 the ECC for the project was cancelled by the Mines Minister. With the change in ownership and given the size of the project, we see significant risks associated with the timing and capex of the project and now expect the project to commence production in 2025, with slight inflation to guided capex. We highlight that given the ban on open pit mining (which was upheld late last year) we see the probability of the project coming online as low.



Production profile



Cash flow chart



Economics summary

Internal rate of return	16%
NPV (including sunk costs)	US$3,406
NPV (2018+)	US$3,406
Cu required @ 25%	US$9,007 /t
Capex	US$6,100 mn
Capex / t Cu production	US$16,920
Capex / t Cu equ. production	US$14,004
Project type	Greenfield
Project status	Feasibility
Ore reserves / resources	1,117 mt
Copper grade	0.51% Cu
Contained copper	14,994 kt
Commissioning	2025
Peak copper production	451 ktpa
Average LOM production	361 ktpa
Life of mine	18
Gross unit cost	US$3,633 /t
Net unit cost (C1)	US$2,260 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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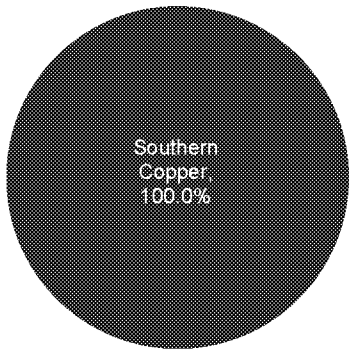
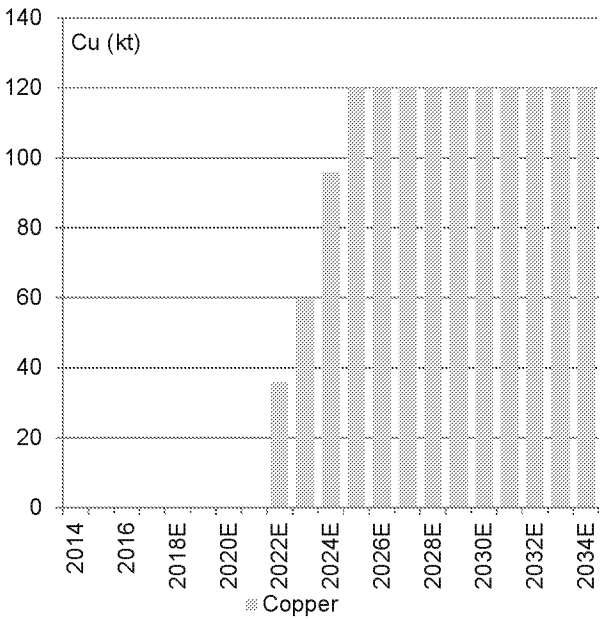
Exhibit 160: Tia Maria

Tia Maria	Peru	112 ktpa	US$1,500 mn	13% IRR

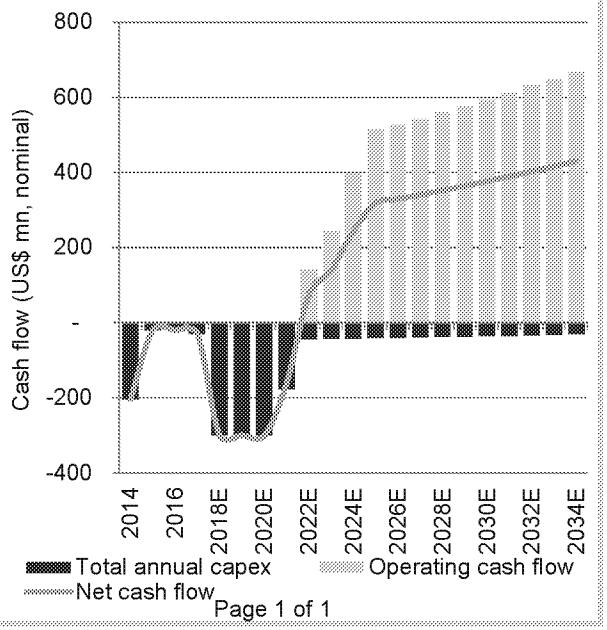
The Tia Maria project is located in the Peruvian region of Arequipa and is wholly owned by Southern Copper. The development of the mine has also been a contentious issue with local residents. After a number of protests, the company redesigned the mine and has now revived the project and has guided to a total capex of US$1.4 bn. However, the project seems to be moving in the right direction now as the company has been working with the local residents and has reached settlement with a company in Peru which had been blocking the project. The company has completed the engineering and after having complied with all environmental requirements it has received approvals for the environmental impact assessment. The company is hoping to get construction license by as soon as the end of this year which could allow construction to begin. While the project is in advanced stages and if the approvals were to be granted the mine could begin as soon as 2021, there have continued to be some local communitites which oppose the building of the project. We forecast the project to come online in 2022 and reach full production by 2025.



Production profile



Cash flow chart



Economics summary

Internal rate of return	13%
NPV (including sunk costs)	US$1,179
NPV (2018+)	US$1,657
Cu required @ 15%	US$7,632 /t
Capex	US$1,500 mn
Capex / t Cu production	US$13,360
Capex / t Cu equ. production	US$13,360
Project type	Greenfield
Project status	Permitting
Ore reserves / resources	721 mt
Copper grade	0.36% Cu
Contained copper	2,590 kt
Commissioning	2022
Peak copper production	120 ktpa
Average LOM production	112 ktpa
Life of mine	20
Gross unit cost	US$2,725 /t
Net unit cost (C1)	US$2,725 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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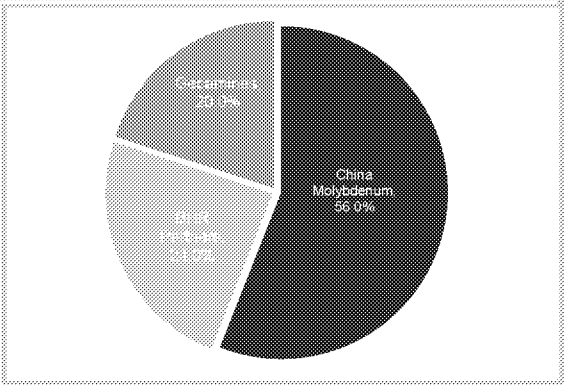
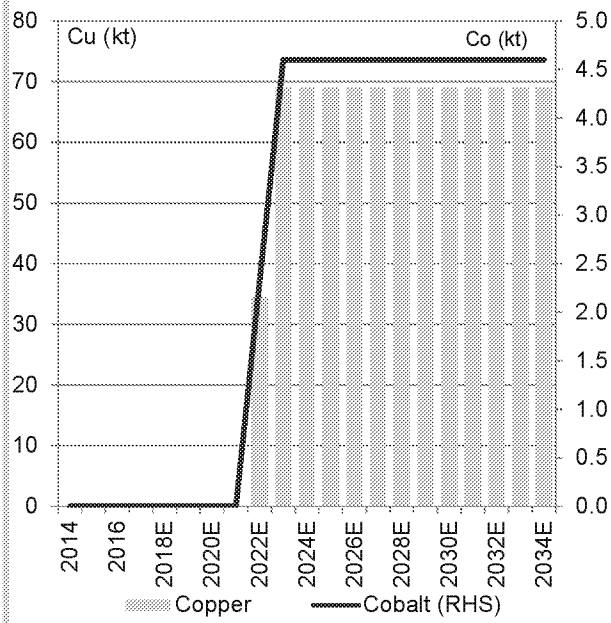
Exhibit 161: Tenke Phase 3

Tenke Phase 3	DRC	66 ktpa	US$600 mn	43% IRR

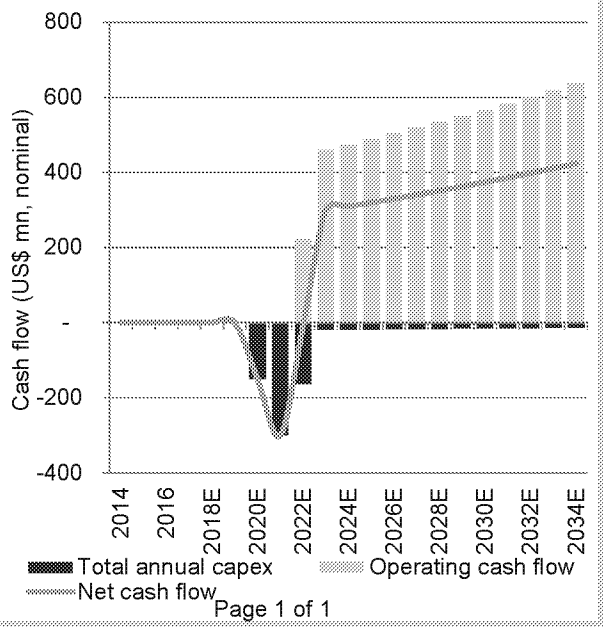
The Tenke-Fungurume mine is located in the Katanga province of the DRC. In May 2016, Freeport announced the sale of its 56% stake in Tenke to China Molybdenum Co. Ltd. for US$2.65bn and Lundin Mining sold its 24% stake to BHR Partners in November 2016 for US$1.14bn. Phase 2 expansion of the project was completed in 2H12, which expanded mill throughput to 14 ktpd (from 8 ktpd) to enable an increase in copper production by 68 ktpa to c.200 ktpa. Before Freeport sold, it continued exploration at Tenke to evaluate future opportunities for expansion including a third phase expansion to raise output by a further c.70 ktpa of copper and c.5 ktpa of cobalt. The existing operations have about 200 ktpa of capacity at the front-end of the plant, but plating capacity is already at c.270 ktpa, implying that the Phase 3 expansion would not require an expansion of the entire plant, reducing the capital intensity. Phase 3 would require additional crushing capacity, mine trucks and we estimate construction would take c.18-20 months. Official capex guidance has not been provided yet; we estimate a total US$600mn capex, slightly lower than c.US$700mn for Phase 2, reflecting the lower expected capital intensity partly offset by inflationary pressures while awaiting updates from the new operator. Any expansion requires increased grid power access - as such we don't see the likelihood of that happening in the near future.



Production profile



Cash flow chart



Economics summary

Internal rate of return	43%
NPV (including sunk costs)	US$1,443
NPV (2018+)	US$1,443
Cu required @ 25%	US$4,117 /t
Capex	US$600 mn
Capex / t Cu production	US$9,045
Capex / t Cu equ. production	US$5,214
Project type	Brownfield
Project status	Feasibility
Ore reserves / resources	98 mt
Copper grade	3.27% Cu
Contained copper	3,205 kt
Commissioning	2022
Peak copper production	69 ktpa
Average LOM production	66 ktpa
Life of mine	13
Gross unit cost	US$3,747 /t
Net unit cost (C1)	US$837 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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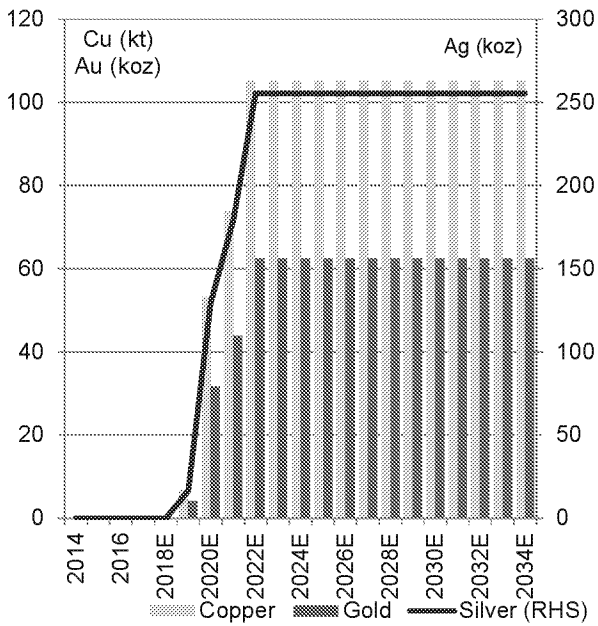
Exhibit 162: Tominsky

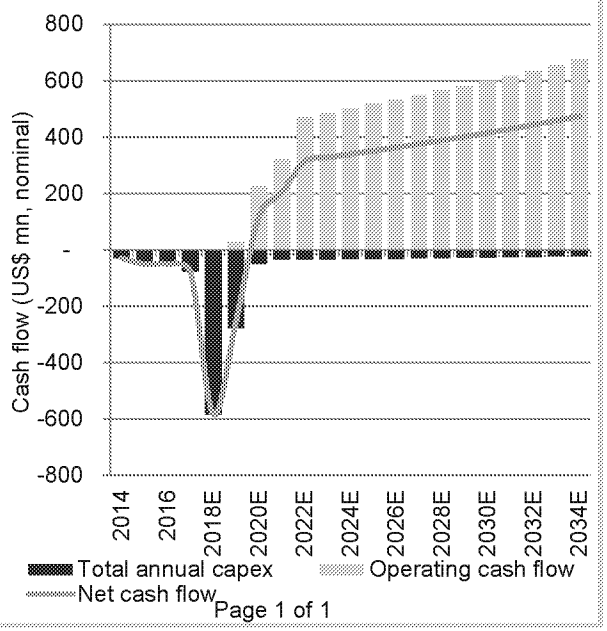
Tominsky	Russia	80 ktpa	US$1,283 mn	19% IRR

The Tominsky copper project, 100% owned by Russian Copper Company (RCC), is located in the Chelyabinsk region of the Russian Federation. The project is expected to have an open pit mine and a concentrator with a throughput of up to 28 mtpa. Construction of the Tominsky project is planned in two stages (14 mtpa each, target launch dates within 6 months of each other). The company has started mine construction in mid 2017 and in spring 2018 secured all necessary funding for the remaining capex. By end 2019 the company expects the construction of a covered mine, underground infrastructure and phase 1 of the processing plant with an estimated output of 14mt of ore per year. Phase 2 will be completed in 2020 to reach 28mtpa of ore producing ~105ktpa of copper concentrate.

Production profile



Cash flow chart



Economics summary

Internal rate of return	19%
NPV (including sunk costs)	US$2,058
NPV (2018+)	US$2,375
Cu required @ 12%	US$4,846 /t
Capex	US$1,283 mn
Capex / t Cu production	US$16,042
Capex / t Cu equ. production	US$16,042
Project type	Greenfield
Project status	Construction
Ore reserves / resources	580 mt
Copper grade	0.44% Cu
Contained copper	2,552 kt
Commissioning	2018
Peak copper production	105 ktpa
Average LOM production	80 ktpa
Life of mine	23
Gross unit cost	US$2,997 /t
Net unit cost (C1)	US$2,197 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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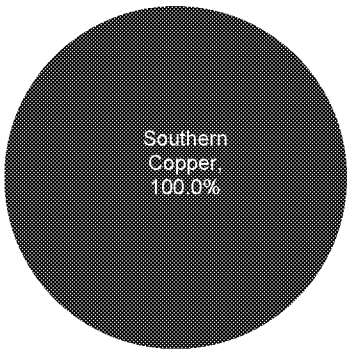
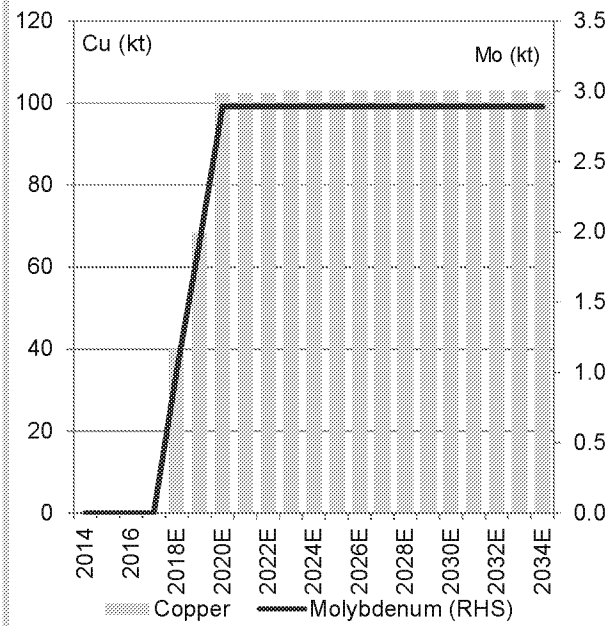
Exhibit 163: Toquepala

Toquepala	Peru	100 ktpa	US$1,310 mn	16% IRR

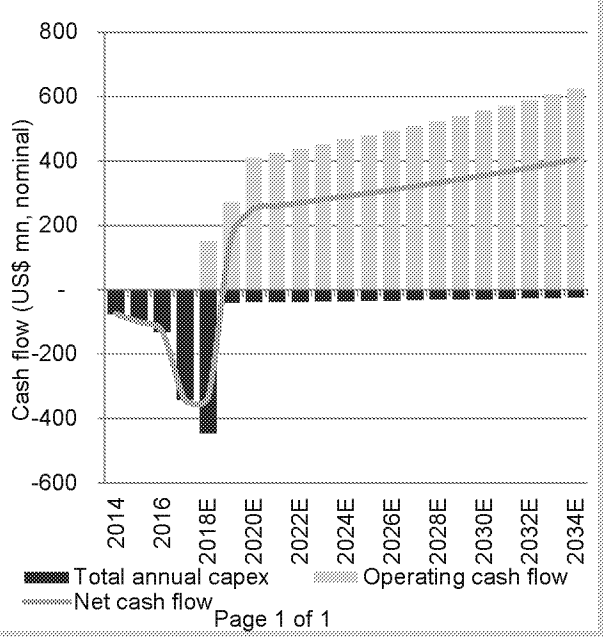
The Toquepala mine consists of a large porphyry copper deposit in the Tacna Province, Peru. The mine is an open pit operation producing copper with by-products of molybdenum, rhenium and silver. Southern Copper has 100% ownership of the mine. Midway through 2009, Southern Copper reinitiated expansion plans for the mine following a significant rise in the copper price. The company is guiding for the Toquepala concentrator expansion to increase copper production by 100 ktpa and molybdenum production by 3.1 ktpa - the copper concentrator capacity is being increased from 60Ktpa to 120Ktpa. The latest estimate of approved capital expenditure for the expansion is US$1,300 mn, we add inflation. The company received the EIA approval for the project in December 2014 and approval to commence construction in April 2015. The construction is expected to be finished in 2Q 2018 with ramp-up and production from the mine commencing in 3Q18 producing 40ktpa of copper in 2018 and ramping up to 100ktpa by 2020.



Production profile



Cash flow chart



Economics summary

Internal rate of return	16%
NPV (including sunk costs)	US$2,343
NPV (2018+)	US$3,318
Cu required @ 15%	US$6,325 /t
Capex	US$1,310 mn
Capex / t Cu production	US$13,091
Capex / t Cu equ. production	US$12,121
Project type	Brownfield
Project status	Construction
Ore reserves / resources	2,502 mt
Copper grade	0.52% Cu
Contained copper	13,085 kt
Commissioning	2018
Peak copper production	103 ktpa
Average LOM production	100 ktpa
Life of mine	33+
Gross unit cost	US$2,952 /t
Net unit cost (C1)	US$2,423 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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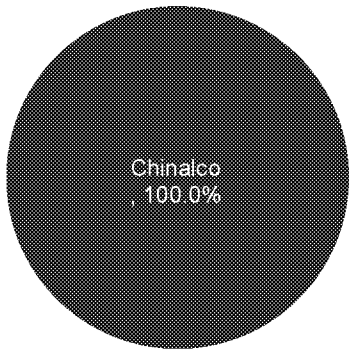
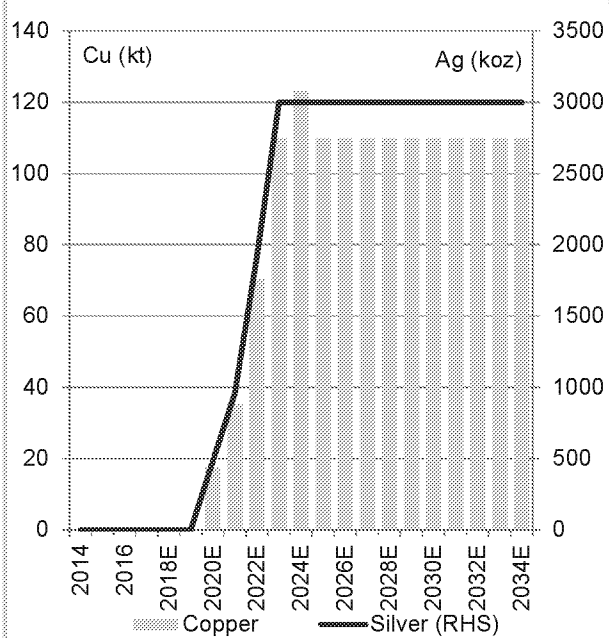
Exhibit 164: Toromocho expansion

Toromocho expansion	Peru	104 ktpa	US$1,400 mn	21% IRR

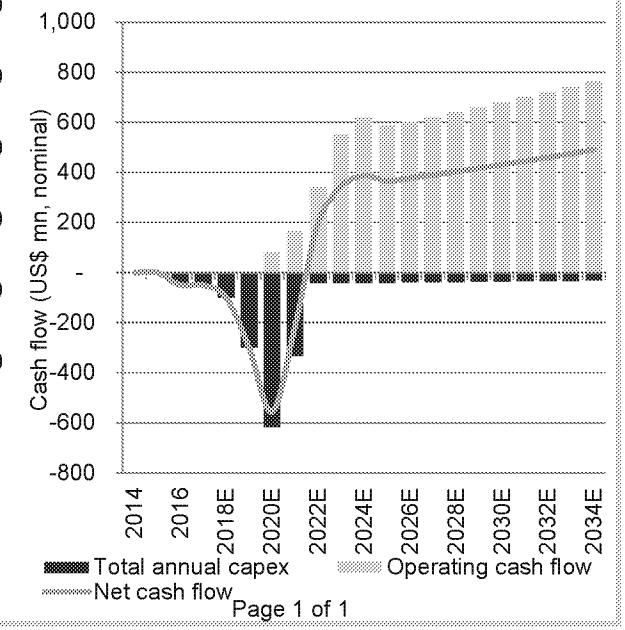
The Toromocho deposit is situated 140 km east of Lima, Peru, and is 100% owned by China's Chinalco following its purchase of Peru Copper Inc on July 11, 2007. The first phase of the project was commissioned in end 2013 with ramp-up expected to be completed by 2H2017. Chinalco approved an expansion to the Toromocho mine in mid-2013, proposing an additional 62.5Ktpd of concentrator capacity which would add c.100Ktpa of copper. Construction of the project was initially expected to start in January 2016 but was delayed indefinitely owing to issues faced at the Toromocho mine. In June 2018, Chinalco announced it had begun the second phase of the project - which it estimated to be at c. US$1.4bn. The project is pegged for completion in 2020. We expect first production at the mine in 2020, with the mine reaching full production by 2023.



Production profile



Cash flow chart



Economics summary

Internal rate of return	21%
NPV (including sunk costs)	US$2,634
NPV (2018+)	US$2,738
Cu required @ 15%	US$5,130 /t
Capex	US$1,400 mn
Capex / t Cu production	US$13,512
Capex / t Cu equ. production	US$11,601
Project type	Brownfield
Project status	Construction
Ore reserves / resources	1,526 mt
Copper grade	0.48% Cu
Contained copper	7,325 kt
Commissioning	2020
Peak copper production	123 ktpa
Average LOM production	104 ktpa
Life of mine	31+
Gross unit cost	US$2,952 /t
Net unit cost (C1)	US$1,861 /t

Page 1 of 1

Source: Company data, Goldman Sachs Global Investment Research

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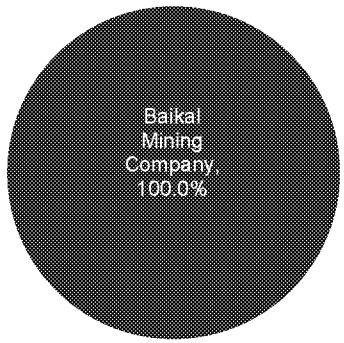
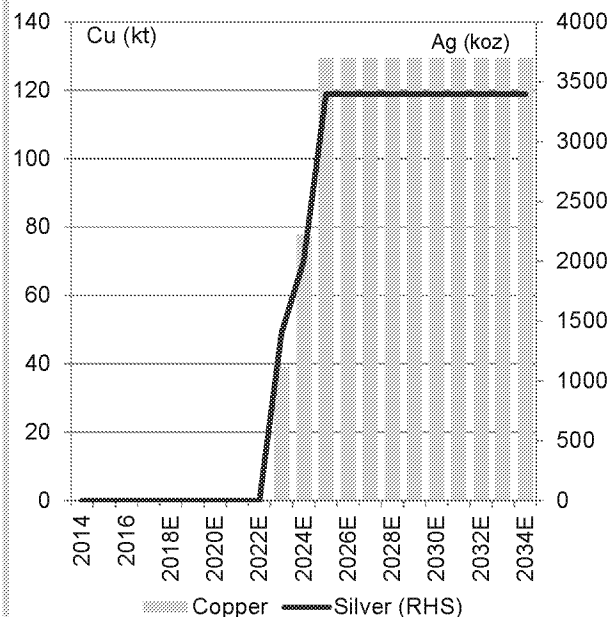
Exhibit 165: Udokan

Udokan	Russia	128 ktpa	US$2,695 mn	11% IRR

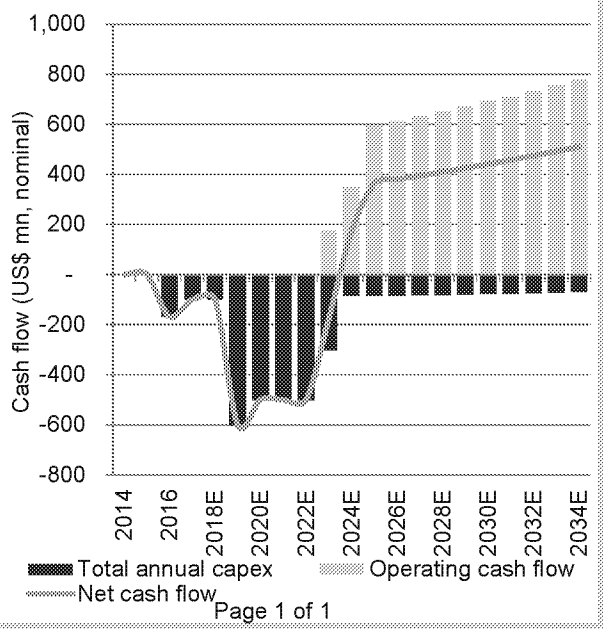
The Udokan mine is located in eastern Russia and is wholly owned by Baikal Mining Company (BMC) which was spun-off by Metalloinvest. Metalloinvest holds 54.25% of BMC. The project entails open pit mining, stage 1 of project development includes processing of 12 mtpa of copper ore producing 134ktpa of copper on average in the first ten years. Processing of Udokan ores is based on flotation-hydrometallurgical flowsheet. The plant shall produce cathode copper and sulphide concentrate. Further expansion to 48 mtpa of ore could be undertaken. Power supply infrastructure has been approved in the investment program of Russian Federal Grid Company and commissioning of the power transmission line (220 kV) is aligned with project schedule. During 2018 BMC is completing engineering of all complexes and infrastructure of Udokan MMP. Start of preparatory works at the plant site commenced in Sept 2018, full-fledged construction of major facilities is targeted for June 2019. Start of production aimed at 2022 (we model a more conservative start date of 2023). Total capex is estimated by company at US$2.4 bn for the Stage 1.



Production profile



Cash flow chart



Page 1 of 1

Economics summary

Internal rate of return	11%
NPV (including sunk costs)	US$1,141
NPV (2018+)	US$1,422
Cu required @ 12%	US$6,799 /t
Capex	US$2,695 mn
Capex / t Cu production	US$21,117
Capex / t Cu equ. production	US$20,029
Project type	Greenfield
Project status	Construction
Ore reserves / resources	1,440 mt
Copper grade	1.05% Cu
Contained copper	15,115 kt
Commissioning	2023
Peak copper production	130 ktpa
Average LOM production	128 ktpa
Life of mine	28+
Gross unit cost	US$3,156 /t
Net unit cost (C1)	US$2,679 /t

Source: Company data, Goldman Sachs Global Investment Research

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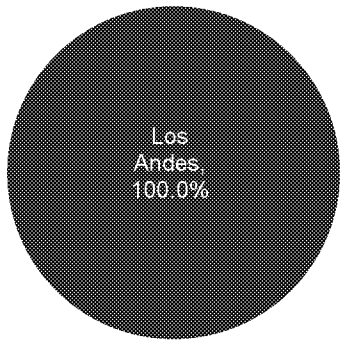
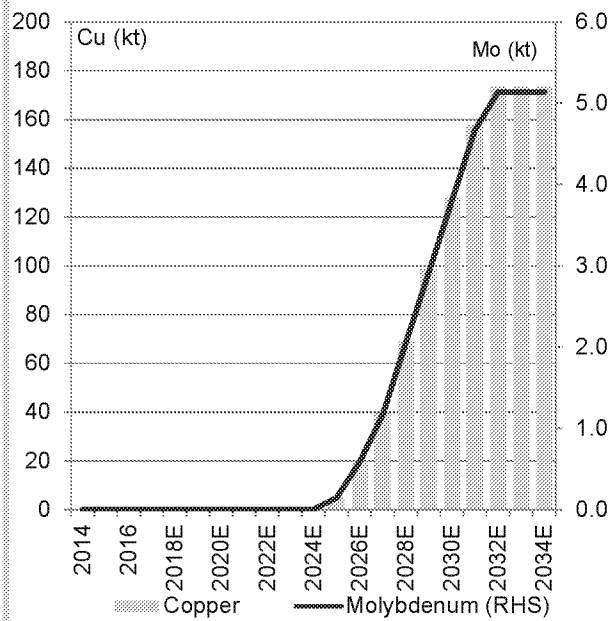
Exhibit 166: Vizcachitas

Vizcachitas	Chile	140 ktpa	US$3,000 mn	7% IRR

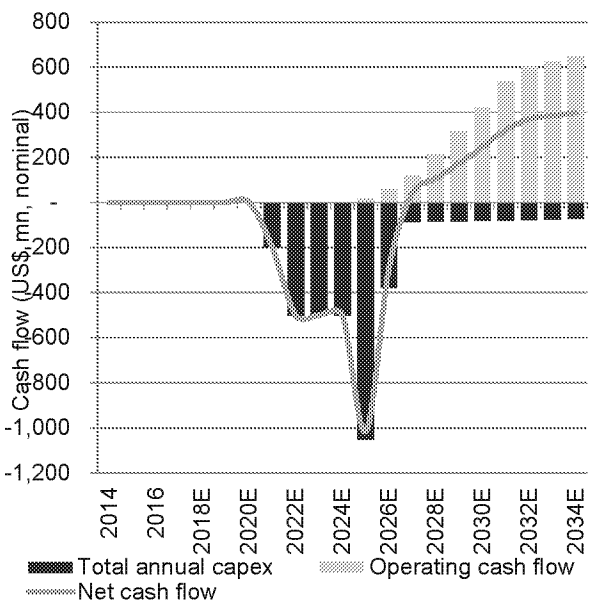
Vizcachitas is a copper-molybednum project located in Chile. It is owned by Los Andes. As part of the 2014 PEA, the company said that at an initial capex of US$2.9bn it would look to construct a 175ktpd mill which would see an average annual production of 179kt of copper and c. 5-6kt of molybdneum at a cost of c.USc170/lb. Since 2014, the company had been conducting exploration activities at the mine as part of which it has found higher grade mineralisation to the north of the existing mines. The mine is located at a low elevation with excellent infrastructure which makes it ideal for the project to start production. According to the company, the project is ready to enter the pre-feasibility stage. The company recently commented that it would update the PEA soon and the new parameters are likely to indicate a smaller mine at a much lower capex than the one for which it currently forecasts. The timeline according to the company is: 2018-20 it is looking to progress the PFS and environmental permits; by 2021 the company expects the environmental approval and and a decision on construction taken with construction starting in 2021-23. The company expects the copper production to begin in 2023 - we however take a slightly more conservative view and forecast first production in 2025 with full ramp-up by 2030.



Production profile



Cash flow chart



Economics summary

Internal rate of return	7%
NPV (including sunk costs)	-US$182
NPV (2018+)	-US$182
Cu required @ 15%	US$4,870 /t
Capex	US$3,000 mn
Capex / t Cu production	US$21,387
Capex / t Cu equ. production	US$19,384
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	1,038 mt
Copper grade	0.37% Cu
Contained copper	3,841 kt
Commissioning	2025
Peak copper production	173 ktpa
Average LOM production	140 ktpa
Life of mine	21
Gross unit cost	US$4,442 /t
Net unit cost (C1)	US$3,883 /t

Source: Company data, Goldman Sachs Global Investment Research

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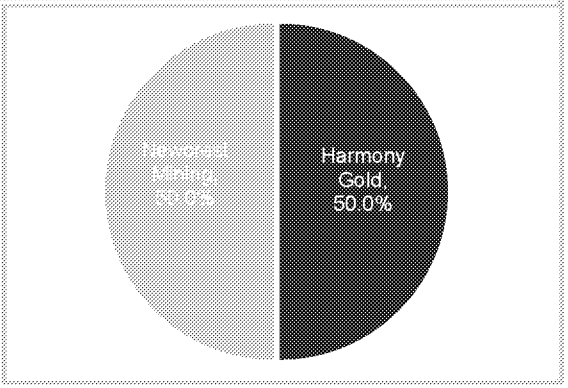
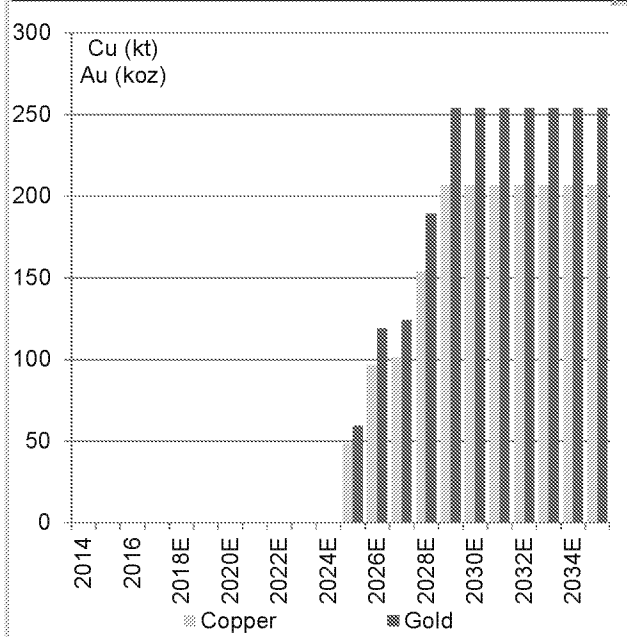
Exhibit 167: Wafi Golpu

Wafi Golpu	PNG	191 ktpa	US$3,000 mn	18% IRR

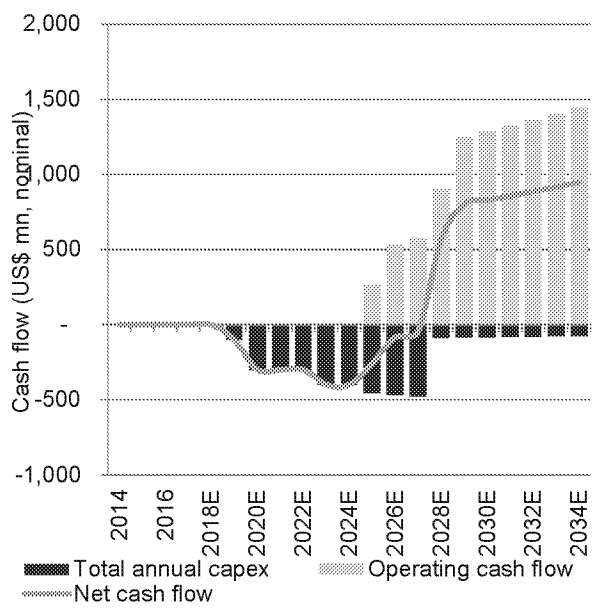
The Golpu deposit, located in Papua New Guinea (PNG), is a copper-gold deposit. The project is a joint venture between Harmony Gold Mining Company Ltd. (Harmony) and Newcrest Mining. In March 2018, Harmony released an updated feasibility study. The key changes are that the project now consists of three block caves (versus two previously) and the starter block cave is larger and deeper operating at 16mtpa (versus 3mtpa prior). The proposed 17mtpa processing plant will now include onsite-self generation of bulk power and associated fuel handling while Deep Sea tailings Placement (DSTP) has been identified as the preferred method of tailings management. First ore milled is expected 4.75 years from the grant of Special mining Lease (SML) which the JV applied for in August 2016 - the amended supporting documentation was submitted in March 2018. The JV plans to submit the EIS (Environmental Impact Statement) soon.The updated total initial capital for the project is expected to be US$2.8 bn compared to the initial pre-feasibility study capex guidance of US$4.8 bn and LoM capex is expected to be lower by US$1 bn. We model capex of US$3bn, as we adjust for inflation, and expect initial capex spend to start in 2019 with first production in 2025. In July 2018 the local Morobe government announced they wanted an equity stake of no less than 20% in the Wafi Golpu mine and want to be an active partner in the mine development.



Production profile



Cash flow chart



Economics summary

Internal rate of return	18%
NPV (including sunk costs)	US$3,388
NPV (2018+)	US$3,388
Cu required @ 25%	US$9,171 /t
Capex	US$3,000 mn
Capex / t Cu production	US$15,744
Capex / t Cu equ. production	US$12,732
Project type	Greenfield
Project status	Feasibility
Ore reserves / resources	380 mt
Copper grade	1.27% Cu
Contained copper	4,826 kt
Commissioning	2025
Peak copper production	207 ktpa
Average LOM production	191 ktpa
Life of mine	26+
Gross unit cost	US$1,703 /t
Net unit cost (C1)	US$922 /t

Source: Company data, Goldman Sachs Global Investment Research

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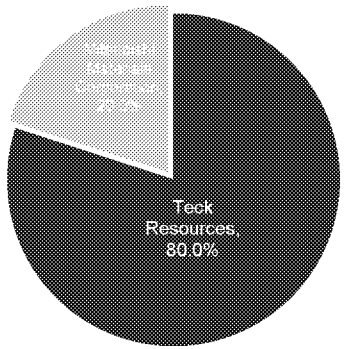
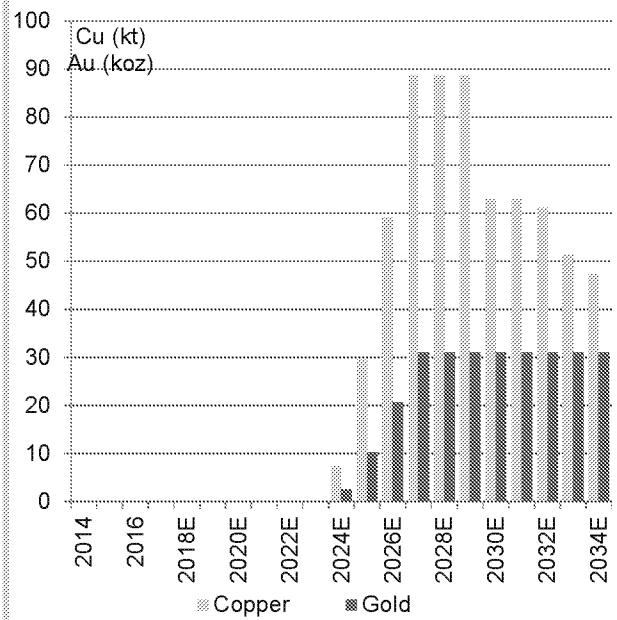
Exhibit 168: Zafranal

Zafranal	Peru	39 ktpa	US$1,270 mn	7% IRR

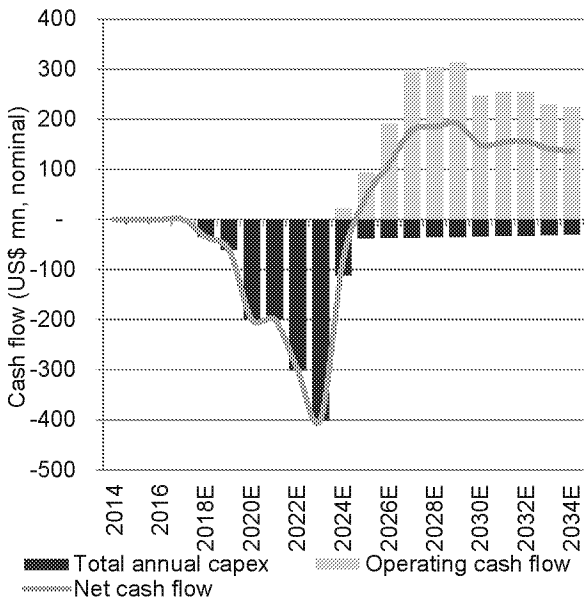
Zafranal, located in the Arequipa region in Peru, is a copper-gold greenfield open-pit mining project. The project was originally a 50/50 JV between its current operator, AQM, MAQM, and Teck Resources. In January 2017, Teck acquired AQM's share in MAQM and the effective ownership of the mine is now Teck Resources (80%) and MMC (20%). A Pre-Feasibility Study (PFS) was released in June 2016 which estimates resources of 467 mt with an average copper grade of 0.38%. The pre-production capex according to the PFS is US$1.16 bn with a mine life of 28 years and throughput averaging c.60ktpd. The environmental and social base line field studies for the project were delayed during 2015 as a result of local demands to sign a framework for long-term social investment programmes. During 2018 the focus will be on producing a feasibility study along with expanding community engagement activities and permitting work that is ncessary to prepare a Social and Environmental Impact Assessment (SEIA). The company expects to complete the feasibility study and submit the SEIA during 4Q18. Construction is expected to start in 1Q2019 with production to start at the end of 2021; we add slight capex inflation to the guided capex number and model first production from 2022.



Production profile



Cash flow chart



Economics summary

Internal rate of return	7%
NPV (including sunk costs)	-US$93
NPV (2018+)	-US$93
Cu required @ 15%	US$9,148 /t
Capex	US$1,270 mn
Capex / t Cu production	US$32,523
Capex / t Cu equ. production	US$29,983
Project type	Greenfield
Project status	Pre-feasibility
Ore reserves / resources	401 mt
Copper grade	0.40% Cu
Contained copper	1,604 kt
Commissioning	2024
Peak copper production	89 ktpa
Average LOM production	39 ktpa
Life of mine	27+
Gross unit cost	US$4,087 /t
Net unit cost (C1)	US$3,643 /t

Source: Company data, Goldman Sachs Global Investment Research

Share prices in this report are based on the market close of October 3, 2018.

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EPS change summary

Exhibit 169: Summary of EPS changes

Company	EPS						% Change		
	2018E		2019E		2020E		*2018E*	*2019E*	*2020E*
Diversifieds	New	Old	New	Old	New	Old			
BHP - LSE	1.24	1.24	1.56	1.40	1.30	1.24	*0%*	*11%*	*5%*
BHP - ASX	1.24	1.24	1.56	1.40	1.30	1.24	*0%*	*11%*	*5%*
Rio -LSE	5.22	5.03	4.83	4.84	4.30	4.27	*4%*	*0%*	*1%*
Rio Tinto - ASX	5.22	5.03	4.83	4.84	4.30	4.27	*4%*	*0%*	*1%*
Glencore	0.53	0.54	0.51	0.60	0.40	0.48	*-1%*	*-15%*	*-17%*
Anglo American	2.26	2.24	2.23	2.23	1.77	1.73	*1%*	*0%*	*2%*
Norilsk Nickel	2.45	2.56	2.55	2.76	2.43	2.63	*-4%*	*-8%*	*-7%*
Teck Resources Ltd.	4.46	4.92	3.63	4.16	3.04	3.58	*-9%*	*-13%*	*-15%*
Copper									
Antofagasta	0.39	0.42	0.80	1.17	0.93	1.24	*-7%*	*-31%*	*-25%*
Boliden	25.73	26.12	25.63	29.29	23.95	26.78	*-1%*	*-12%*	*-11%*
First Quantum Minerals	0.52	0.55	1.00	1.33	1.46	1.81	*-6%*	*-25%*	*-19%*
Lundin Mining Corp.	0.34	0.35	0.57	0.73	0.70	0.85	*-3%*	*-21%*	*-18%*
KAZ Minerals Plc	0.94	0.97	0.76	1.18	0.73	1.10	*-3%*	*-35%*	*-34%*
Aurubis AG	5.19	5.19	3.86	4.40	4.67	5.32	*0%*	*-12%*	*-12%*
KGHM Polska Miedz SA	9.25	10.01	11.09	6.02	8.15	2.69	*-8%*	*84%*	*202%*
Freeport-McMoRan Inc.	1.58	1.78	0.74	1.39	0.94	1.60	*-11%*	*-47%*	*-41%*
MMG Ltd	0.03	0.05	0.06	0.09	0.07	0.09	*-30%*	*-33%*	*-25%*
Jiangxi Copper	0.73	0.83	0.79	0.98	0.83	1.00	*-12%*	*-19%*	*-17%*
Zijin Mining	0.18	0.20	0.19	0.24	0.21	0.26	*-9%*	*-20%*	*-17%*

Source: Goldman Sachs Global Investment Research

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Disclosure Appendix

Reg AC

We, Eugene King, Abhinandan Agarwal, Trina Chen, Matthew Korn, CFA, Joy Zhang and Nina Dergunova, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

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Growth is based on a stock's forward-looking sales growth, EBITDA growth and EPS growth (for financial stocks, only EPS and sales growth), with a higher percentile indicating a higher growth company. **Financial Returns** is based on a stock's forward-looking ROE, ROCE and CROCI (for financial stocks, only ROE), with a higher percentile indicating a company with higher financial returns. **Multiple** is based on a stock's forward-looking P/E, P/B, price/dividend (P/D), EV/EBITDA, EV/FCF and EV/Debt Adjusted Cash Flow (DACF) (for financial stocks, only P/E, P/B and P/D), with a higher percentile indicating a stock trading at a higher multiple. The **Integrated** percentile is calculated as the average of the Growth percentile, Financial Returns percentile and (100% - Multiple percentile).

Financial Returns and Multiple use the Goldman Sachs analyst forecasts at the fiscal year-end at least three quarters in the future. Growth uses inputs for the fiscal year at least seven quarters in the future compared with the year at least three quarters in the future (on a per-share basis for all metrics).

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A-share Basic Materials: Aluminum Corp. of China (A), Angang Steel (A), Anhui Conch Cement (A), Baoshan Iron & Steel, BBMG Corp. (A), China Coal Energy (A), China Molybdenum Co. (A), Jiangxi Copper (A), Maanshan Iron & Steel (A), Yanzhou Coal Mining (A), Zijin Mining (A).

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China Basic Materials: Aluminum Corp. of China (H), Angang Steel (H), Anhui Conch Cement (H), BBMG Corp. (H), China Coal Energy (H), China Hongqiao Group, China Molybdenum Co. (H), China National Building Material, China Resources Cement Holdings, Jiangxi Copper (H), Lee & Man Paper Manufacturing Ltd., Maanshan Iron & Steel (H), MMG Ltd, Nine Dragons Paper Holdings, West China Cement, Yanzhou Coal Mining (H), Zhaojin Mining Industry, Zijin Mining (H).

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Goldman Sachs Investment Research global Equity coverage universe

	Rating Distribution			Investment Banking Relationships		
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Price target and rating history chart(s)

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Message

From: Susan Tackish [tackishs@api.org]
Sent: 10/23/2018 4:28:30 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: RE: telephone call

Thanks Ryan. I'll have Mike call your cell at 3:00pm today. Susan

---

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, October 23, 2018 12:14 PM
To: Susan Tackish <tackishs@api.org>
Subject: Re: telephone call

How about today at 3?

It's nothing policy related. I actually wanted to ask him about a couple of personnel issues.

I can also be reached anytime on my cell at Ex. 6

Ryan Jackson
Chief of Staff
U.S. EPA
202-564-6999

On Oct 23, 2018, at 10:52 AM, Susan Tackish <tackishs@api.org> wrote:

> Hi Ryan – Mike has availability today at 3:00pm or Thursday from 11:00-11:45am or 3:30-4:30pm. If none of those times work for you, let me know a couple of times that do and I'll try to adjust the schedule on our end. Is there a particular subject you want to discuss that I can give Mike a heads up on? Thanks, Susan
>
> **Susan A. Tackish**
> EA to the President & CEO
>
> API | 1220 L Street, NW | Washington, DC 20005
> 202.682.8502 P | 202.682.8110 F | tackishs@api.org
>
> ---
>
> **From:** Jackson, Ryan <jackson.ryan@epa.gov>
> **Sent:** Tuesday, October 23, 2018 10:32 AM
> **To:** Susan Tackish <tackishs@api.org>
> **Subject:** telephone call

Susan, I wanted to see if I could set up a time to talk with Mike for 10 or 15 minutes. Much appreciated.

Ryan Jackson
Chief of Staff
U.S. Environmental Protection Agency
(202) 564-6999

Message

From: Hogin, Andrew [Andrew.Hogin@mail.house.gov]
Sent: 10/18/2018 2:23:48 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Thank You Follow Up

Hi Ryan,

I hope your week is going well. I just wanted to say thank again for meeting last Friday (hopefully Mandy dropped off my thank you note). I'm leaving this evening for vacation in Europe so I I'll have limited access to emails. I get back on Oct. 27th and would love to continue the conversation with you or Troy when I return.

Thanks, and I look forward to hearing from you.

Andrew Hogin
Senior Legislative Assistant
Office of Congressman David Kustoff
508 Cannon Bldg. Washington D.C. 20515
(o) 202-225-4714
Ex. 6

Message

From: Russell Thomasson [rthomasson@cassidy.com]
Sent: 10/29/2018 2:50:12 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: Grasse River/Region 2 issue
Attachments: scan copy of RA letter to DEC commissioner 2018 10 18[4].pdf

Sorry to bug, but was just following up. Thanks.

Russell J. Thomasson
Executive Vice President
733 Tenth Street, NW, Suite 400
Washington, DC 20001
202.585.2554 (direct)
Ex. 6
www.cassidy.com
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From: "Thomasson, Russell (WAS-CAS)" <rthomasson@cassidy.com>
Date: Thursday, October 25, 2018 at 11:36 AM
To: Ryan Jackson <jackson.ryan@epa.gov>
Subject: Grasse River/Region 2 issue

Ryan, hope all is well. I am reaching out on behalf of Arconic regarding implementation of the Grasse River remedy in Region 2. Arconic has been working with Region 2 for many years on this project and are at the culmination of a five year long planning process that started following the 2013 Record of Decision. Arconic's commitment of resources was initiated following a series of meetings with Region 2 regarding the project schedule and project start date. These meetings took place from June 2016 through August 2018 and at the most recent meeting (less than two months ago) Arconic was told there was alignment with the Region to proceed with preparing to start the project in 2019. Following the August meeting the project was reviewed with the Arconic CEO, CFO and Board of Directors because of the magnitude of the financial commitment associated with the work and we received the necessary approvals to move forward.

Unfortunately, we have received indication that the Region 2 Administrator may be reopening this project (see attached). Any delay in moving forward with this project would add significant additional costs for Arconic. Could you point me to someone in the Administrator's office to discuss? Thanks and I really appreciate your help. Russ

Russell J. Thomasson
Executive Vice President
733 Tenth Street, NW, Suite 400
Washington, DC 20001
202.585.2554 (direct)
Ex. 6
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

OCT 18 2018

Basil Seggos, Commissioner
New York State Department of
Environmental Conservation
625 Broadway, 5th Floor
Albany, New York 12233-4750

Re: Grasse River (aka Alcoa Aggregation) Superfund Site

Dear ~~Commissioner Seggos~~: Basil

Thank you for your letter of September 7, 2018, and Interim Deputy Commissioner Judy Drabicki's letter of October 16, 2018 regarding several issues that the New York State Department of Environmental Conservation (NYSDEC) is seeking to resolve regarding the upcoming remediation work in the Grasse River. As you know, the Saint Regis Mohawk Tribe (SRMT) has also expressed concerns about this work.

While a detailed response to your letters is being developed, I am proposing that the Environmental Protection Agency, NYSDEC and the SRMT meet to discuss these issues. The SRMT have indicated that they are available to meet at 11 am on October 29, 2018. I am respectfully requesting your participation, and that of your team, in this meeting. There are some significant technical issues that need to be discussed. To facilitate these discussions, I am bringing my full technical team, as well as national experts from our Environmental Response Team that have worked extensively on this project, so that they can be available to respond directly to your questions and concerns. We will also make the fluvial geomorphologist who has been assisting in EPA's evaluation of Arconic's design available. Unfortunately, he won't be able to join us in person but we are hoping that we can arrange for his participation by videoconference.

We would like to discuss the concerns that have been expressed by both the SRMT and the NYSDEC, specifically issues related to the implementation of the remedy, summarized below:

- Habitat design issues, in particular the sufficiency of the thickness of the habitat layer over the section of the River that requires an armored cap;
- Whether plants or animals gathered for cultural and medicinal purposes are impacted by PCBs in soils from the Indian Meadows area;
- Whether the dewatering of dredged material at the sediment processing facility could cause air emissions that pose unacceptable human health risks; and
- The fate of freshwater mussels present in the contaminated sediments to be dredged from the River.

While most of these issues have been the subject of past discussions during the development of the remedial design we have been unable to come to a resolution. I am hoping that this meeting will facilitate an open dialogue among all parties about these issues and that as a result, our combined technical teams can find common ground.

Although this is short notice, I would appreciate it if NYSDEC facilities could be made available for this meeting. My staff are available to assist as necessary. Please have your staff coordinate this meeting through John Prince, Deputy Director, Emergency and Remedial Response Division, who can be reached at 212 637-4380.

I look forward to our upcoming meeting and hope that it will serve as an effective forum for all concerns to be heard. In the interim, if you have any questions please call me at (212) 637-5000.

Look forward to seeing you!

Sincerely,

Peter D. Lopez
Regional Administrator

cc: M. Brand, NYSDEC
M. Ryan, NYSDEC

Message

From: Lyndsay Alexander [Lyndsay.Alexander@lung.org]
Sent: 11/5/2018 6:45:54 PM
To: Wheeler, Andrew [wheeler.andrew@epa.gov]
CC: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Meeting Request - American Lung Association and partners
Attachments: ATT00001.txt; American Lung Association_Andrew Wheeler Meeting Request Nov.5 2018.pdf

Dear Acting Administrator Wheeler:

I request a meeting with you on behalf of the American Lung Association President and CEO, Harold P. Wimmer, and other national health and medical organizations with which we partner. We would like to discuss the critical role the U.S. Environmental Protection Agency (EPA) plays protecting millions of Americans from the life-threatening dangers of air pollution and climate change.

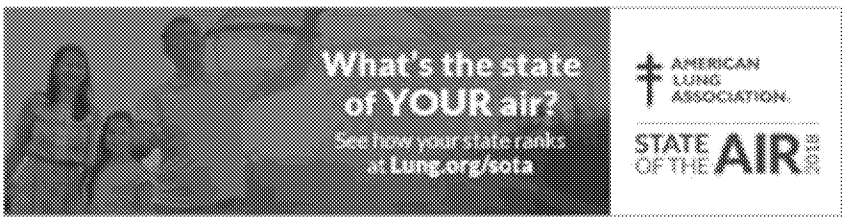
By implementing and enforcing the Clean Air Act, EPA has substantially reduced harmful air pollution that threatens the health of all Americans. However, much work remains to deliver the promise of the Act and fulfill EPA's mission of protecting human health and the environment.

Our organizations wish to discuss how to continue the progress that the nation has made under Clean Air Act safeguards that have dangerous emissions, particularly from the transportation and power sectors.

Thank you for considering this request. We look forward to meeting with you. To schedule the meeting, please ask your appropriate staff to contact me at 202-481-7668, or Lyndsay.Alexander@lung.org.

Sincerely,
Lyndsay Alexander

Lyndsay M. Alexander, MPA
National Assistant Vice President | Healthy Air Campaign
American Lung Association
1331 Pennsylvania Avenue NW, Suite 1425 | Washington, DC 20004
O: 202-481-7668
Lung HelpLine: 1-800-LUNGUSA
Lung.org| Lyndsay.Alexander@Lung.org



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National President and CEO
Harold P. Wimmer

November 5, 2018

The Honorable Andrew Wheeler
Acting Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Acting Administrator Wheeler:

I request a meeting with you on behalf of the American Lung Association President and CEO, Harold P. Wimmer, and other national health and medical organizations with which we partner. We would like to discuss the critical role the U.S. Environmental Protection Agency (EPA) plays protecting millions of Americans from the life-threatening dangers of air pollution and climate change.

By implementing and enforcing the Clean Air Act, EPA has substantially reduced harmful air pollution that threatens the health of all Americans. However, much work remains to deliver the promise of the Act and fulfill EPA's mission of protecting human health and the environment.

Our organizations wish to discuss how to continue the progress that the nation has made under Clean Air Act safeguards that have dangerous emissions, particularly from the transportation and power sectors.

Thank you for considering this request. We look forward to meeting with you. To schedule the meeting, please ask your appropriate staff to contact me at 202-481-7668, or Lyndsay.Alexander@lung.org.

Sincerely,

Lyndsay Alexander
National Assistant Vice President, Healthy Air Campaign
American Lung Association

Advocacy Office:
1331 Pennsylvania Avenue NW, Suite 1425 North
Washington, DC 20004-1710
Ph: 202-785-3355 F: 202-452-1805

Corporate Office:
55 West Wacker Drive, Suite 1150 | Chicago, IL 60601
Ph: 312-801-7630 F: 202-452-1805 info@Lung.org

Message

From: Edward Calabrese [edwardc@schoolph.umass.edu]
Sent: 10/18/2018 1:33:50 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
CC: Nezhad, Cyrus [Cyrus.Nezhad@hq.doe.gov]
Subject: new development

Dear Ryan:

I am using this email to introduce you to DOE Attorney Cyrus Nezhad. He has a significant leadership position in the DOE dealing with environmental contamination and clean up and all the DOE cites across the country. He is working with the top administrative leadership in DOE on new risk assessment based initiatives that should be of considerable interest to EPA.

Sincerely,

Ed Calabrese

Message

From: ECOS [ecos@ecos.org]
Sent: 10/19/2018 5:36:53 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: U.S. EPA Touts Reg Reform and Utah, Idaho, Colorado, & Louisiana Innovate

U.S. EPA Touts Reg Reform and Utah, Idaho, Colorado, & Louisiana Innovate

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ECOSWIRE

Friday, October 19, 2018
Vol. 20 No. 41

Table of Contents

- U.S. EPA Highlights Significant Regulatory Reform in Unified Agenda
- U.S. EPA Reports Reductions in 2017 GHG Emissions, Plans Webinar on FLIGHT
- Utah and Idaho Kick Off ECOS Lean Skills Exchange
- State News You Can Use
- ECOS News
- ITRC
- Upcoming Events

U.S. EPA Highlights Significant Regulatory Reform in Unified Agenda

On October 17, U.S. EPA reported significant regulatory reform underway and in the works in its Unified Agenda of Regulatory and Deregulatory Actions and Regulatory Plan for Fall 2018.

"To date, under President Trump, EPA has finalized 28 major deregulatory actions saving Americans over $1.6 billion and meeting the President's two-for-one regulatory order," said EPA Acting Administrator Andrew Wheeler. "We are providing the states and regulated community the regulatory certainty they need to advance new technologies, improve environmental protections, and enhance economic growth."

The *Agenda* shows continued reduction of regulatory burden as envisioned by Executive Order 13771. In the last fiscal year, EPA finalized 10 deregulatory actions and reduced

regulatory costs by $1.2 billion. In addition, the document includes 45 actions expected to be deregulatory, 34 of which appear for the first time.

EPA's *Regulatory Plan* describes 25 priority actions it will propose or complete in the coming year, including:

- The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks
- The Affordable Clean Energy Rule – Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program
- Revised Definition of "Waters of the United States." [Parisien]

U.S. EPA Reports Reductions in 2017 GHG Emissions, Plans Webinar on FLIGHT

On October 17, U.S. EPA released the 2017 greenhouse gas (GHG) data collected under the EPA's Greenhouse Gas Reporting Program. The data show that total GHG emissions decreased by 2.7 percent from 2016 to 2017, and reported emissions from large power plants declined 4.5 percent since 2016 and 19.7 percent since 2011. EPA collected annual facility-level emissions data from more than 8,000 major industrial sources in 2017 as well as data from upstream fossil fuel and industrial gas suppliers.

EPA will hold an informational webinar on **October 24** to demonstrate its GHG data publication tool known as FLIGHT (Facility Level Information on Greenhouse gasses Tool), including new features and a tutorial on common searches. FLIGHT allows users to view reported data by region, industry, or greenhouse gas. Registration is required for the webinar. [Poole]

Utah and Idaho Kick Off ECOS Lean Skills Exchange

The Utah and Idaho Departments of Environmental Quality (DEQs) have kicked off a Lean-Business Process Improvement (BPI) partnership under the ECOS BPI Skills Exchange program. The partnership is being coordinated by Scott Baird, Utah DEQ Deputy Director

and Lean-Six Sigma Green Belt, and Jess Byrne, Idaho DEQ Deputy Director and Lean Coordinator.

As recently reported in *ECOSWIRE*, Baird visited Idaho DEQ's office for an initial Lean presentation and planning exercise that was attended by approximately 24 Idaho DEQ staffers. The group's discussion focused on outlining Utah's process improvement journey and identifying some of Utah's approaches that can be replicated in Idaho.

Skills exchange attendees have participated in two lean events since the Utah presentation, and additional in-person staff details are expected in 2019. For more information or to get involved with ECOS' BPI Skills Exchange Program, contact Owen McAleer of ECOS. [McAleer]

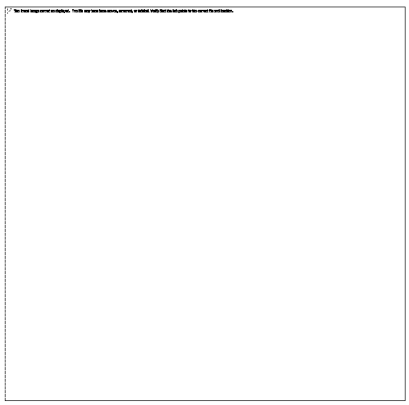
State News You Can Use

Colorado NextCycle to Fund Recycling End Market Development

Louisiana Launches New and Improved Water Data Portal

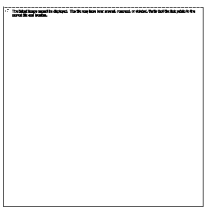
ECOS News

ECOS Welcomes New Administrative Assistant



ECOS is pleased to welcome Paulina Lopez-Santos as its new Administrative Assistant. Paulina recently graduated from the University of Maryland with a B.S. in Environmental Science and Policy and has served as a Diversity Fellow for the Citizens' Climate Lobby and a Team Leader for Greenpeace.

To reach Paulina, email plopezsantos@ecos.org.
[Parisien]



ITRC

Interstate Technology and Regulatory Council

ITRC Holds First PFAS Training Event in New Jersey

The Interstate Technology & Regulatory Council (ITRC) PFAS team recently held a successful training class at Montclair State University in Montclair, New Jersey. More than 100 people attended, including city, state, federal, and local regulators, as well as academic stakeholders and industry affiliates. Deputy Commissioner Debbie Mans of the

New Jersey Department of Environmental Protection delivered the keynote address.

Environmental experts trained participants on site characterization (sampling and analysis), complex mechanisms that impact fate and transport, current and potential remediation technologies, risk communications, and other topics.

The class was the first of several ITRC PFAS training classes planned nationwide. All classes are free to state and federal regulators. The next one will be held in Sacramento, California on **November 4** in collaboration with the Society of Environmental Toxicology and Chemistry (SETAC).

For more information about upcoming training events, click here. For questions or to inquire about receiving a travel scholarship, please contact Tadbir Singh of ECOS. [Singh]

ITRC PFAS training in Montclair, New Jersey.

Upcoming Events

Webinars

ITRC on Remediation Management of Complex Sites

The Interstate Technology & Regulatory Council (ITRC) will hold an online training course on Remediation Management of Complex Sites on **October 23 at 1-3:15 p.m. Eastern**.

At some sites, complex site-specific conditions make it difficult to fully remediate environmental contamination. This training course and associated guidance document provides a recommended holistic process for management of challenging sites, termed "adaptive site management." After attending this training, participants will be able to: identify and integrate technical and nontechnical challenges into a holistic approach to remediation; develop a long-term performance-based action plan; apply well-demonstrated techniques for effective stakeholder engagement; and access additional resources, tools, and case studies most relevant for complex sites.

Learn more and register here. [Olonoff]

U.S. EPA on Smoke Sense App

U.S. EPA will host a public webinar on its update to the Smoke Sense mobile application on **October 23 at 2-3 p.m. Eastern**. The app is part of a public health study that will investigate the extent to which wildland fire smoke exposure affects health and to develop health risk communication strategies. The newly released 2018 app update includes features like maps of hourly forecasts of smoke and ozone, time of last measurement of

two air pollutants present during wildfires, and a Smoke Smarts module.

For more information and to register, see here. [Longsworth]

ECOS and U.S. EPA on Compliance Research for Effective Government

ECOS and U.S. EPA are hosting a new webinar series entitled *Compliance Research for Effective Government*. The series will help state and EPA program administrators understand how collaboration with academics can identify effective and measurable approaches to compliance. The first webinar featured the Ohio Signage at Outfalls Study with presenters Brian Hall of the Ohio Environmental Protection Agency and Dr. Jay Shimshack of the University of Virginia. The future webinar schedule is:

- **October 23, 2-3:30 p.m. Eastern: Two Uses of Data Analytics**: one to predict air quality and inform the public and the other to improve compliance. Daniel Dix, Minnesota Pollution Control Agency, and Christina Seybolt, University of Chicago.
- **November 8, 1-2 p.m. Eastern: Compliance Interventions on the Behaviors of Third Party Lead Contractors.** Andrew Gosden, Maryland Department of the Environment, and Dr. Ben Meiselman, Johns Hopkins University.
- **November 29, 2-3 p.m. Eastern: Compliance Assurance Toolbox.** David Hindin, Office of Compliance, Office of Enforcement and Compliance Assurance, U.S. EPA, and Sam Sankar, ECOS.
- **December 11, 1-2 p.m. Eastern: New Hampshire Hazardous Waste Generator Training Program.** Tim Prospert, New Hampshire Department of Environmental Services, and Dr. Sarah Strafford, College of William and Mary.

Please register for the webinars here. For more information, please contact Sonia Altieri of ECOS. [Altieri]

ECOS Shale Gas Caucus on Novel Air Leak Detection Approaches

The ECOS Shale Gas Caucus (SGC) will host a webinar on **October 24 at 2-3 p.m. Eastern** on novel leak detection approaches for methane and volatile organic compounds (VOCs). The session aims to stimulate dialogue on the potential value of novel detection

for super-emitters, given innovation in continuous and aerial monitoring.

Moderated by SGC Co-Chairs Martha Rudolph of Colorado and Dave Glatt of North Dakota, the webinar will feature speakers with the Interstate Technology and Regulatory Council, EDF+Business, and other organizations.

An agenda and call information will be distributed to SGC members. Please contact Lia Parisien of ECOS for additional information. [Parisien]

ITRC on Issues and Options in Human Health Risk Assessment

The Interstate Technology & Regulatory Council (ITRC) will hold an online training course on Issues and Options in Human Health Risk Assessment on **October 25 at 1-3:15 p.m. Eastern**.

Regulatory project managers and decision-makers may not have specific guidance when alternative approaches, scenarios, and parameters are proposed for site-specific risk assessments, and are faced with difficult technical issues when evaluating these site-specific risk assessments. This training course and associated guidance document are resources for evaluating alternatives.

Learn more and register here. [Olonoff]

ITRC on Connecting the Science to Managing LNAPL Sites

The Interstate Technology & Regulatory Council (ITRC) will hold the first in a three-part online training course on *Connecting the Science to Managing LNAPL Sites* on **October 30 at 1-3:15 p.m. Eastern**.

The newly updated Light Non-Aqueous Phase Liquids (LNAPLs) three-part training course series is based on the ITRC guidance LNAPL Site Management: LCSM Evolution, Decision Process, and Remedial Technologies. *Part 1: Understanding LNAPL Behavior in the Subsurface* will teach participants how LNAPLs behave in the subsurface and examine what controls their behavior. This training will explain what LNAPL data can tell you about the LNAPL and site conditions, and cover how that information is applied to the development of an LNAPL conceptual site model (Part 2) and LNAPL technology selection

(Part 3).

Learn more and register here. [Olonoff]

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Message

From: Lorman OnDemand Webinars [customerservice@lormanwebinars.net]
Sent: 10/29/2018 7:53:38 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Backflow Prevention and Cross Connection Control - OnDemand Webinar

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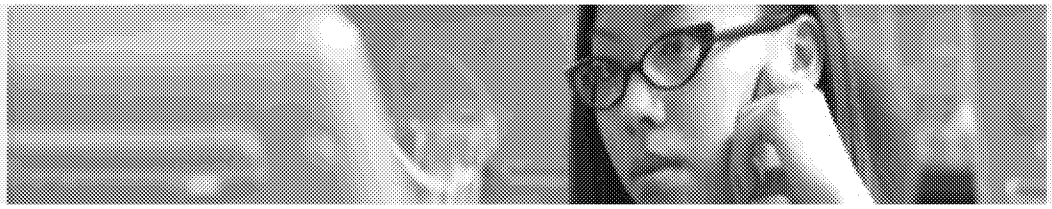

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View at your convenience 24/7, for 90 days

82 min

This on-demand webinar will review some key guidelines from sections of U.S. EPA, American Water Works Association, and the Foundation for Cross Connection Control and Hydraulic Research University of Southern California. Water purveyors are responsible for the delivery of safe water to their customers. Cross connection control is recognized as an essential element in maintaining the integrity of the distribution system.

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From: Managing the New Federal Workforce & PMA [PotomacForum@FederalWorkforceMgmt.org]
Sent: 10/18/2018 5:33:31 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: [SPAM-Sender] Just Announced: Developing, Managing and Supervising the Federal Workforce of the Future

Just Announced: New Workshop to Develop, Manage and Supervise the Federal Workforce
Please Forward to Others in Your Agency -

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How best to encourage employee engagement, improve the Federal hiring process to enhance the employee experience and create Federal competency reskilling and optimal career pathways to achieve future workforce requirements in the modern, mobile workplace.

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www.PotomacForum.org

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Keynote Speaker
Rebecca Ayers, PhD,
Performance Management Solutions
United States Office of Personnel Management
(Awaiting Agency Approval)

Guest Speakers

Mika Cross
Award Winning Federal Workforce Expert

Dr. Ray M. Crawford, Jr.
Chief of Staff
Executive Level Outreach
Office of Federal Student Aid
Department of Education

Thevee Gray
Personnel Psychologist
Department of Agriculture

Chris Armstrong
Veritas Culture
Former Culture Executive
United States Intelligence Community Agencies

Vince Brantley
Veritas Culture
Former Culture Executive
Defense Intelligence Agency (DIA)

Erica M. Roberts
Training Director, Customer Experience Expert,
and Employee Engagement Strategist
Former Director of Customer Service and Customer
Service Program Department of Labor

Additional government speakers awaiting confirmation

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This workshop will provide you with practical, easy to implement tools and resources to help your agency develop an innovative hiring strategy that brings on the right talent with the right skills, empower employees, align skills and competencies with mission requirements and modernize your workplace for the digital age while understanding how best to improve performance, increase accountability and enhance mission efficacy through effective recruitment and retention.

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- Optimize your strategy for recruiting, hiring, training and rewarding the Future Federal Workforce by bringing in the next generation of workers and retaining top talent; training (and retraining) personnel to forecast for future mission requirements, develop leaders across all levels of the organization and to enhance performance across the organization.

- Adopt promising practices that drive positive outcomes by leveraging the Federal Employee Viewpoint Survey Results into actionable steps to cultivate an inclusive, high-performing culture designed to retain top talent and maximize employee potential and performance

- Optimize employee recognition programs designed to recognize, reward and retain top performers;

- Build your toolkit for cultivating a culture of engagement and accountability designed to achieve enhanced organizational and individual performance

Who Should Attend:
- Federal supervisors and managers
- Federal HR Executives, managers and staff
- Anyone responsible for implementing Agency restructuring plans
- Federal employees or members of employee affinity groups
- Communications practitioners responsible for leading change management and internal communications campaigns

- IGs and Staff
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- Industry Partners who support the government

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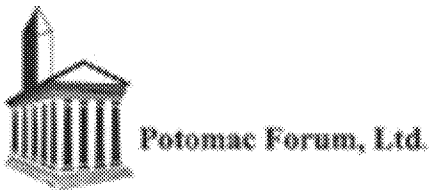

This email was sent by: **Potomac Forum, Ltd.**
2800 Eisenhower Avenue , Alexandria , Virginia, 22314 , USA

Message

From: Erdos & Morgan [invite@erdossurvey.com]
Sent: 11/5/2018 4:16:05 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: 2018 Opinion Leader Survey

Erdos & Morgan

Dear Mr. Jackson:

Recently we sent you an e-mail inviting you to participate in a Nationwide Survey of Opinion Leaders.

If you already replied, we thank you. If you haven't had the time to reply, please consider this another request to participate.

You have been identified as part of an elite group in this country, influencing public policy discussion for a nation faced with many diverse and complex challenges. Because of your position and accomplishments, it is undeniable that the issues which you devote your time and effort to are highly significant. The select group, of which you are a part, comes from all walks of life: Government, Business, the Arts, Sciences and Academia. The issues which should be in the forefront of the nation's agenda vary in degree and importance, in part, because of your perspective.

With this in mind, we ask for your participation in this survey. This will help establish which policy issues you judge should head America's agenda today. For over thirty years Erdos & Morgan has conducted this survey. The results are monitored closely because the priorities you set impact policy decision affecting the future.

In addition to including important issues of the day, this survey also measures the media, which you more than likely may use to gain further knowledge of public issues.

We realize your time is valuable and that you might consider this somewhat tedious. However, for your convenience, we've grouped the issues by subject matter, thereby making your participation relatively effortless.

Given your position, your response is of great significance. While your individual answers will remain strictly confidential, they will be used in combination with others in your peer group to make your views known.

To take our survey, please **click here**.

We appreciate your assistance and we thank you in advance for your cooperation.

Sincerely,

Jason Gorelkin
CEO

P.S. As a small token of our appreciation, we will make a $10.00 donation to one of the charities listed at the end of the questionnaire. Please indicate your choice of charity.

Erdos & Morgan | 485 Underhill Blvd, Ste 200 | Syosset, NY 11791

If you no longer wish to receive these emails, you may unsubscribe by clicking here.

Message

From: Chad Bradley [cbradley@sblstrategies.com]
Sent: 10/24/2018 2:28:18 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Fwd: TMDL - Conowingo WIP
Attachments: Exelon Memo to EPA Chief of Staff October 11 2018.pdf; Exelon Memo to EPA Region 3 Administrator and Staff October 11 2018.pdf

Memo's regarding Conowingo for your files.

Thanks.

Chad

Begin forwarded message:

From: "Carney, Jacqueline Ann:(BSC)" <Jackie.Carney@exeloncorp.com>
Subject: TMDL - Conowingo WIP
Date: October 19, 2018 at 2:21:36 PM EDT
To: "jackson.ryan@epa.gov" <jackson.ryan@epa.gov>
Cc: Chad Bradley <cbradley@sblstrategies.com>

Ryan,
Chad mentioned a short summary of Exelon's position regarding the creation of an additional entity WIP by the Chesapeake Bay Partnership Program's Principal's Staff Committee. The delay in getting this to you is on me!

I attach a memo addressed to you and also a longer legal memo for Region III just so you are aware of what we share with them. I/we are happy to answer any questions you may have. Thanks for taking the time to understand our concerns.

Best,
Jackie

Jackie Carney
Exelon Corporation
Director Fed Government Affairs
(202) 637-0347 desk
Ex. 6
Jackie.carney@exeloncorp.com

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MEMORANDUM

TO: EPA Chief of Staff
FR: Exelon Generation Company, LLC
RE: Unlawfulness of the Proposed "Conowingo WIP"
DA: Thursday, October 11, 2018

This Memorandum summarizes why EPA can, and should, block the proposed "Conowingo Watershed Implementation Plan."

EPA Has the Legal Authority to Block the "Conowingo WIP."

A Phase III Watershed Implementation Plan (WIP) such as the contemplated "Conowingo WIP" is both a component of a "current plan" under Section 303 of the Clean Water Act and a "management plan" under Section 117 of the Act. Section 303 authorizes EPA to "disapprove" a continuing planning process, and Section 117 requires EPA to "ensure" that proper management plans are developed and that the implementation process is begun. EPA's express powers to "disapprove" a Section 303(e) process and to "ensure" the propriety of a Section 117(g) management plan necessarily mean that EPA is authorized to disapprove the "Conowingo WIP."

The "Conowingo WIP" Would Require Formally Amending the Bay TMDL.

A "Conowingo WIP" would transgress the Bay TMDL's fundamental structure, its pollutant-reduction target system, its express timeline, and its specific instructions for adjusting to potential changes in the Conowingo Dam's trapping efficiency. Therefore, even if EPA somehow concluded that it lacked statutory authority to disapprove WIPs generally, the proposed "Conowingo WIP" could not take effect unless EPA first formally amended the Bay TMDL. That, of course, would demand a long, complex process, including public notice and comment.

The "Conowingo WIP" Would Be Illegal.

Even if EPA amended the Bay TMDL and approved the "Conowingo WIP," it could never be enforced because it would violate Sections 303 and 117 of the Clean Water Act. Section 303 places responsibility for implementing TMDLs on individual States, not on collections of States. And Section 117 does the same.

The rationale for those provisions flows from the Clean Water Act's fundamental structure. As the Supreme Court has explained, the Act establishes a regulatory "partnership" between the Federal Government and the source State, *i.e.*, the State

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where the pollution source is located. Recognizing that pollution is best controlled at its source, Congress gave a major role to the State where each pollution source is located, but only relatively minor roles for downstream States affected by pollutants discharged into interstate waters. As a result, water pollution generally may be regulated either by federal law (for example, by EPA actions taken under the Clean Water Act) or by the law of the State where the pollutant is discharged into navigable waters—but not by any other State, even if the latter State is injured by upstream pollution from out-of-state sources. So State *B* cannot regulate State *A*'s polluters. A multistate implementation plan such as the "Conowingo WIP" would effectively empower State *B* to regulate pollution sources in State *A*. That would violate the Clean Water Act.

THE "CONOWINGO WIP" WOULD BE BAD PUBLIC POLICY.

In addition to being unlawful, a "Conowingo WIP" would also be bad public policy for at least two reasons. *First*, the "Conowingo WIP" is just the mirror image of the unprecedented, and unlawful, Clean Water Act Section 401 certification that Maryland issued in an attempt to extort $7 billion from Exelon's Conowingo Hydroelectric Project. In essence, the "Conowingo WIP" would be the device for spending Exelon's money to control pollution sources outside the State of Maryland. *Second*, a "Conowingo WIP" would wreck the longstanding Bay TMDL accountability framework, which requires every square inch of the watershed, and hence each of its pollution sources, to be covered by one, and only one, State-specific WIP. By undermining that framework, a "Conowingo WIP" would leave pollution sources' owners and operators wondering whether their conduct will be regulated by their State-specific Phase III WIP, by the "Conowingo WIP," or by both. This is a recipe for confusion, unaccountability, and over-regulation.

CONCLUSION

In its August 2018 report to the Chesapeake Executive Council, the Chesapeake Bay Program proclaimed, without qualification, that the Bay-watershed jurisdictions "***will*** implement a separate WIP for Conowingo Dam" and that they will do so "with oversight ***by EPA***" (emphasis added). Given the legal and policy defects plaguing any "Conowingo WIP," as summarized above and in a more detailed memorandum we are sending to EPA Region 3, that proclamation must not stand.

EPA should exercise its power to block any "Conowingo WIP." Specifically, Exelon asks EPA to announce that, exercising its authority under the Clean Water Act, EPA will not approve or accept, or help to develop, draft, or implement, any "Conowingo WIP."

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MEMORANDUM

TO: EPA Region 3 Administrator and Staff
cc: EPA Chief of Staff
FR: Exelon Generation Company, LLC
RE: Unlawfulness of the Proposed "Conowingo WIP"
DA: Thursday, October 11, 2018

This Memorandum makes four main points:

- EPA has the legal authority to block the so-called "Conowingo Watershed Implementation Plan," or "Conowingo WIP."
- Adopting the "Conowingo WIP" would require EPA to formally amend the Chesapeake Bay TMDL.
- The "Conowingo WIP" would violate the Clean Water Act and would be poor public policy.
- EPA should announce that it will not approve or accept any "Conowingo WIP."

OVERVIEW OF THE CHESAPEAKE BAY TMDL AND ITS WIPS

The issues addressed in this Memorandum are critically important to the integrity of a major EPA project that formally commenced in 2007, when Administrator Johnson agreed that EPA would establish a federal "Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus, and Sediment," or Bay TMDL, to restore the health of the Chesapeake Bay by 2025. As you know, EPA's Bay TMDL is a comprehensive "'pollution diet' that identifies the maximum amount of a pollutant the waterway can receive and still meet water quality standards." *Chesapeake Bay TMDL*, at ES-3 (Dec. 29, 2010). The federal Bay TMDL sets precise quantitative allocations for each pollutant, for each State within the Bay watershed. The cornerstone of the TMDL's accountability framework is the set of seven State-specific Watershed Implementation Plans, or WIPs, which explain in detailed regulatory language "how and when [each] jurisdiction plans to meet its pollutant allocations under the TMDL." *Id.* at ES-8.

Under the Clean Water Act (CWA), EPA can approve or disapprove a State-proposed TMDL; if EPA disapproves, it must act in the State's stead to establish a federal TMDL. *See* 33 U.S.C. § 1313(d)(2). EPA also can effectively establish a region-wide federal TMDL, as it did for the Chesapeake Bay through a coordinated collection of 92 State-specific TMDLs. But even with EPA's imprimatur, a TMDL is not self-executing and thus cannot impose any binding implementation requirements on any

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State or pollution source. By contrast, when a State establishes a WIP and EPA accepts it, the WIP is binding and enforceable. *See American Farm Bureau Fed'n v. U.S. EPA*, 792 F.3d 281, 291–92 (3d Cir. 2015) (contrasting a TMDL that cannot be enforced "against anyone" with a state implementation plan that "create[s] enforceable rights and obligations"), *cert. denied*, 136 S. Ct. 1246 (2016).

If EPA does not accept a State's WIP, it is up to the State to revise the WIP to bring it into compliance with the Clean Water Act and then resubmit it to EPA. *See* 33 U.S.C. § 1313(e)(2). EPA has no power to establish a federal WIP. *See id.* Developing, drafting, and implementing a WIP are state, not federal, functions. In short, the Clean Water Act contemplates the existence (with EPA's approval) of state TMDLs, federal TMDLs, and state WIPs, but not federal WIPs.

Therefore, the Bay TMDL is implemented through a set of seven State-established WIPs—one for each State in the Bay watershed (Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia, and the District of Columbia, which the Clean Water Act treats as a State). The WIPs are geographically based and mutually exclusive: Every single pollution source in the Chesapeake Bay watershed is regulated by one, and only one, WIP. Currently, Phase II WIPs established and approved in 2012 are in effect.

The Chesapeake Bay Program's Principals' Staff Committee (PSC) has proposed something new and radical for the 2019 Phase III WIPs: In addition to the seven State-specific WIPs, there would be an eighth WIP, uniquely multistate in character, whose geographic scope overlaps with the geographic scope of several or all of the other seven WIPs. *See* Framework for the Conowingo Watershed Implementation Plan (Oct. 2018) [hereinafter *Conowingo WIP Framework*].

This new eighth WIP would be called the "Conowingo WIP," apparently because it would be tied to a Clean Water Act Section 401 certification that the Maryland Department of the Environment (MDE) recently issued to Exelon Generation Company, LLC, the owner and operator of the Conowingo Hydroelectric Project. If that certification withstands legal challenges currently pending in both federal and state courts, it would hold Exelon responsible for pollutants discharged by upstream New York and Pennsylvania sources and would effectively require Exelon to pay MDE more than $7 billion over the next several decades to operate the Conowingo Project. That figure exceeds, by orders of magnitude, the economic value of the Project as an operating asset. Together, the certification and the "Conowingo WIP" would compromise the Project's long-term financial viability and likely result in shutting down this hydroelectric facility, which would reduce Maryland's supply of renewable energy by 55%, with no offsetting benefit to the Chesapeake Bay.

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In developing the Bay TMDL, EPA assumed that the Conowingo Dam's capacity to trap pollutants before they reached the Bay would remain unchanged for at least another 15 years. But in its 2010 Bay TMDL document, EPA expressly stated that if this assumption proved to be incorrect, "an upland jurisdiction [*i.e.*, New York or Pennsylvania or Maryland] might need to increase its [pollutant-reduction] efforts." *Chesapeake Bay TMDL* 10-8. EPA explained that it was "[t]herefore ... imperative that those jurisdictions work together to develop an implementation strategy for addressing the sediment, nitrogen, and phosphorus behind the Conowingo Dam ***through their respective WIPs***, so that they are prepared if the trapping efficiencies decrease." *Id.* (emphasis added). EPA's Bay TMDL thus expressly established that any adjustments due to unforeseen conditions at Conowingo would be made only through the State-specific WIPs for the three States in the Susquehanna River basin, not through a multistate WIP.

This Memorandum principally addresses whether, with or without EPA's approval, there can lawfully be a multistate WIP such as the "Conowingo WIP." But first, a practical question: If the "Conowingo WIP" conflicts with federal law or public policy, can EPA unilaterally block it?

EPA HAS THE LEGAL AUTHORITY TO BLOCK THE "CONOWINGO WIP."

EPA derives its authority to block a "Conowingo WIP" from Sections 117 and 303 of the Clean Water Act, 33 U.S.C. §§ 1267, 1313. We will first address the more general, earlier-enacted provision, Section 303, before turning to the more recent, Chesapeake Bay-specific provision, Section 117.

Section 303(e) of the Act mandates that "the Administrator shall either approve or disapprove" each State's "continuing planning process." *Id.* § 1313(e)(2). Each State must submit to EPA a "continuing planning process" that is consistent with the Act and "will result in plans for all navigable waters within such State." *Id.* § 1313(e)(2)–(3). The plans must be kept "current" and must include, among other things, TMDLs for certain pollutants and "adequate implementation, including schedules of compliance." *Id.* § 1313(d)(2), (e)(3)(C), (F). The implementing regulations for these provisions require each State to document these steps in a water-quality management, or WQM, plan. *See* 40 C.F.R. §§ 130.5, 130.6, 130.7.

A State's WIP is one component of the State's WQM plan under Section 303 and its implementing regulations. *See Am. Farm Bureau*, 792 F.3d at 303 n.6 (suggesting that Phase II WIPs satisfy 33 U.S.C. § 1313(e)); *Food and Water Watch v. EPA*, 5 F. Supp. 3d 62, 77 (D.D.C. 2013) (discussing the Bay TMDL and WIPs; citing 33 U.S.C. § 1313(e)); *see also, e.g.*, D.C. Dep't of Energy & Env't, *Continuing Planning Process for Water Quality Management 2018*, at 12–13 (Sept. 18, 2018) (describing D.C.'s Phase

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II WIP as one component of D.C.'s Water Quality Management Plan); Brief for Virginia State Water Control Board at *50, *Appalachian Voices v. State Water Control Bd.* (4th Cir. No. 18-1077 (2018)), 2018 WL 3020037 (citing 33 U.S.C. § 1313(d)(2), *id.* § 1313(e)(3)(F), and 40 C.F.R. § 130.7(d)(2) as the federal laws that "require" Virginia to develop WIPs and submit them to EPA). And under Section 303 of the Clean Water Act, EPA retains ultimate authority to "either approve or disapprove." 33 U.S.C. § 1313(e)(2).

Likewise, when Congress amended the Act specifically to address the Bay, it authorized EPA to "ensure" that each WIP will help "achieve and maintain" the "nutrient goals" and "water quality requirements" necessary to restore the Chesapeake Bay ecosystem and its living resources. *Id.* § 1267(g)(1)(A)–(B). Section 117(g)(1) of the Act requires EPA to "ensure that management plans are developed and implementation is begun by [Bay-area governors] to achieve and maintain—(A) the nutrient goals ... for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed [and] (B) the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem." *Id.* By empowering EPA to "ensure" the development of management plans and the commencement of effective implementation, Congress clearly envisioned that EPA could and would disapprove any management plan, such as a WIP, whose implementation would not lead to achieving and maintaining these nutrient goals and water-quality requirements. So Congress thus reaffirmed EPA's power to disapprove Clean Water Act implementation plans.

A Phase III WIP such as the contemplated "Conowingo WIP" is both a component of a "current plan" under Section 303 and a "management plan" under Section 117. Section 303 authorizes EPA to "disapprove" a continuing planning process, and Section 117 requires EPA to "ensure" that proper management plans are developed and that the implementation process is begun. EPA's express powers to "disapprove" a Section 303(e) process and to "ensure" the propriety of a Section 117(g) management plan necessarily mean that EPA is authorized to disapprove a "Conowingo WIP."

Indeed, even the proponents of the "Conowingo WIP" concede that EPA has the authority to pass judgment on the WIP itself. *See Conowingo WIP Framework* 5 (describing EPA's "[r]esponsibilities" to "[e]valuate the Conowingo WIP" and "to determine if corrections or adjustments are necessary"); U.S. Environmental Protection Agency's Expectations for the Phase III Watershed Implementation Plans 9 (June 20, 2018) (similar).

A WIP becomes binding and enforceable only when it is final. *See Am. Farm Bureau*, 792 F.3d at 291–92, 303 (affirming 984 F. Supp. 2d 289, 328–29, 332 (M.D. Pa. 2013)). A WIP that EPA has disapproved could have no effect as a matter of law. A "Conowingo WIP" therefore could take effect only if EPA decides not to disagree with it. By announcing its intent to disapprove or disagree with any "Conowingo WIP,"

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EPA clearly could block its development, drafting, and implementation. And as explained below, there are good legal and policy reasons for EPA to do exactly that.

THE "CONOWINGO WIP" WOULD REQUIRE FORMALLY AMENDING THE BAY TMDL.

Even if EPA somehow concluded that it lacked statutory authority to approve or disapprove WIPs generally, a "Conowingo WIP" could not take effect without EPA action—specifically, without EPA formally amending its Bay TMDL. This is true for at least four reasons.

First, as explained above, EPA's Bay TMDL document established the structure of seven geographically based, mutually exclusive, State-specific WIPs that has been in effect continuously for nearly a decade now. The "Conowingo WIP" would destroy, and radically depart from, that structure. *Second*, under EPA's Bay TMDL, if each State meets its pollutant-reduction targets, by definition the entire Chesapeake Bay watershed will do so as well, and the Bay's health will be restored. By contrast, under the "Conowingo WIP" proposal, each State could meet its specific targets and yet the Bay watershed as a whole might still fail to do so, leaving the Bay polluted. *See Conowingo WIP Framework* 4. *Third*, although the Bay TMDL was designed to ensure that all pollution-reduction measures needed to fully restore the Bay will be in place by 2025, the "Conowingo WIP" proposal expressly raises the possibility of pushing implementation "beyond 2025." *Id.* at 2; *cf. id.* appendix B at 2, 4. *Fourth*, EPA's Bay TMDL expressly provided that if the Conowingo Dam's trapping capacity fell short of EPA's expectations, the three Susquehanna River basin States would have to adjust their pollution-reduction efforts "through their ***respective*** WIPs"—not through one multistate WIP. *Chesapeake Bay TMDL* 10-8 (emphasis added).

Because a "Conowingo WIP" would transgress the Bay TMDL's fundamental structure, its pollutant-reduction target system, its express timeline, and its specific instructions for adjusting to potential changes in the Conowingo Dam's trapping efficiency, the proposed WIP could not take effect unless EPA first formally amended the Bay TMDL. That, of course, would demand a long, complex process, including public notice and comment.

THE "CONOWINGO WIP" WOULD BE ILLEGAL.

Even if EPA amended the Bay TMDL and approved the "Conowingo WIP," it could never be enforced because it would violate Sections 303 and 117 of the Clean Water Act.

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Section 303 places responsibility for implementing TMDLs on individual States, not on collections of States. Section 303(d)(2) requires "***[e]ach*** State" to incorporate EPA-approved or -established TMDLs into its current plan under Section 303(e). 33 U.S.C. § 1313(d)(2) (emphasis added). Section 303(e) in turn requires "***[e]ach*** State" to have and occasionally update an EPA-approved continuing planning process that includes, "for all navigable waters ***within such State***," TMDLs for certain pollutants and "adequate implementation, including schedules of compliance." *Id.* § 1313(e)(1)–(3)(F) (emphasis added).

Likewise, Section 117 of the Clean Water Act instructs EPA to "ensure that management ***plans*** [(plural)] are developed and implementation is begun by ***signatories*** to the Chesapeake Bay Agreement," that is, by the individual state governors. 33 U.S.C. § 1267(g)(1) (emphasis added). Congress could instead have required the Chesapeake Executive Council—the collective entity to which all those governors belong—to develop one region-wide, multistate management plan and then begin implementing it as a single unified plan. But Congress did not do so, opting instead to pattern Section 117's Bay program after Section 303's State-by-State system for implementation.

The rationale for requiring State-specific implementation plans, both in general under Section 303 and in the Chesapeake Bay watershed under Section 117, flows from the Clean Water Act's fundamental structure. The Act "establishes a regulatory 'partnership' between the Federal Government and the source State," *i.e.*, the State where the pollution source is located. *International Paper Co. v. Ouellette*, 479 U.S. 481, 490 (1987). Recognizing that pollution is best controlled at its source, Congress gave a major role to the State where each pollution source is located, but only relatively minor roles for downstream States affected by pollutants discharged into interstate waters. *See id.* ("While source States have a strong voice in regulating their own pollution, the CWA contemplates a much lesser role for States that share an interstate waterway with the source (the affected States).").

As a result, water pollution generally may be regulated either by federal law (for example, by EPA actions taken under the Clean Water Act) or by the law of the State where the pollutant is discharged into navigable waters—but not by any other State, even if the latter State is injured by upstream pollution from out-of-state sources. *See generally id.* at 491 ("[A]n affected State may not ... regulate an out-of-state source." (citing 33 U.S.C. § 1342(b)).

Because an implementation plan is binding and enforceable, and because Congress has not authorized EPA to ***implement*** TMDLs (but rather only to establish them in the first instance), an implementation plan regulating a pollution source may be issued only by the State where the source is located. So State *B* cannot regulate State *A*'s polluters. A multistate implementation plan such as the "Conowingo WIP" would

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effectively empower State *B* to regulate pollution sources in State *A*. That would violate the Clean Water Act, regardless of whether EPA approved the WIP.

Furthermore, if the States simply agreed among themselves to subject pollution sources throughout the watershed to mutually agreed-upon controls under state law, without congressional approval, that would raise serious questions under the Federal Constitution's Compact Clause. The Clause provides: "No State shall, without the Consent of Congress, ... enter into any Agreement or Compact with another State ...." U.S. Const. art. I, § 10, cl. 3. The Clause prohibits States from entering into agreements that enhance their power at the expense of federal authority, without congressional approval. *See Cuyler v. Adams*, 449 U.S. 433, 440 & n.8 (1981). So even if the Bay-watershed States entered into a formal agreement or compact to support a "Conowingo WIP" (with or without EPA's approval), their agreement and common implementation plan could be unenforceable without congressional consent. *See Int'l Paper Co.*, 479 U.S. at 488 ("[T]he regulation of ***interstate*** water pollution is a matter of federal, not state law." (emphasis added)).

The only way to be certain that a binding, enforceable, multistate "Conowingo WIP" would comply with federal law is if it were authorized by a stand-alone federal statute or an interstate compact approved by Congress. But no such statute exists, and no interstate compact has ever been adopted for the Chesapeake Bay. The Chesapeake Bay Agreements that date back to the 1980s are merely voluntary agreements that were never formally enacted into federal law by Congress and cannot bind either the States themselves or polluters located within the States. *See* Congressional Research Service, *Federal Oversight and State Cooperation in the Chesapeake Bay* 3–4, 7 (2013). Because a multistate implementation plan cannot derive its binding force from a nonbinding, voluntary interstate agreement, the Chesapeake Bay Agreements cannot provide the legal foundation for a "Conowingo WIP."

Therefore, without a new act of Congress, a "Conowingo WIP" could violate the Clean Water Act, the Federal Constitution, or both. And even EPA's express approval could not save a "Conowingo WIP" from invalidation.

THE "CONOWINGO WIP" WOULD BE BAD PUBLIC POLICY.

In addition to being unlawful, a "Conowingo WIP" would also be bad public policy for at least two reasons.

First, the "Conowingo WIP" is just the mirror image of the unprecedented, and unlawful, Clean Water Act Section 401 certification that Maryland issued for Exelon's Conowingo Hydroelectric Project. Maryland's Section 401 certification effectively requires Exelon (a nonpolluting downstream property owner) to pay $7 billion to MDE,

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but fails to explain how those payments will reduce pollutants discharged not by Exelon, but by upstream sources in New York and Pennsylvania. The "Conowingo WIP" would be the device for spending that pot of money to control pollution sources outside the State of Maryland. *See Conowingo WIP Framework* 4–5 (referring to Exelon's payments under the certification as "[k]ey sources" for "pooled resources" to fund projects across several States). Indeed, this unprecedented cross-State funding scheme is the linchpin to the "Conowingo WIP" proposal; everything else that might be included in this multistate WIP could be parceled out to one of the seven State-specific Phase III WIPs.

The legality of Maryland's Section 401 certification is currently being challenged in both federal and state courts, where Exelon expects the certification will be declared invalid. And without billions of Exelon's dollars flowing from the Section 401 certification, the "Conowingo WIP" would become an empty formality.

Second, a "Conowingo WIP" would wreck the longstanding Bay TMDL accountability framework, which requires every square inch of the watershed, and hence each of its pollution sources, to be covered by one, and only one, State-specific WIP. By undermining that framework, a "Conowingo WIP" would leave pollution sources' owners and operators wondering whether their conduct will be regulated by their State-specific Phase III WIP, by the "Conowingo WIP," or by both. This is a recipe for confusion, unaccountability, and over-regulation.

Exelon is not alone in recognizing this problem: Just this summer, the PSC's newly appointed "Conowingo WIP Steering Committee" issued draft guiding principles acknowledging that a "Conowingo WIP" layered over seven State-specific WIPs runs the risk of "double-counting" and "creating duplicative bureaucracies." *See Conowingo WIP Framework* appendix A (Oct. 2018 version, originally dated June 29, 2018).

CONCLUSION

In its August 2018 report to the Chesapeake Executive Council, the Chesapeake Bay Program proclaimed, without qualification, that the Bay-watershed jurisdictions "***will*** implement a separate WIP for Conowingo Dam" and that they will do so "with oversight ***by EPA***." *See* State of the Chesapeake Bay Program 9 (Aug. 2018) (emphasis added). Given the legal and policy defects plaguing any "Conowingo WIP," as summarized in this Memorandum, that proclamation must not stand.

As explained above, EPA has the power to block any "Conowingo WIP." It should exercise that power.

Specifically, Exelon asks EPA to announce that, exercising its authority under the Clean Water Act, EPA will not approve or accept, or help to develop, draft, or implement, any "Conowingo WIP."

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Message

From: Holland, Luke (Inhofe) [Luke_Holland@inhofe.senate.gov]
Sent: 10/24/2018 5:21:16 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Kolan Davis

Kolan_Davis@judiciary-rep.senate.gov
Direct: 202-224-3800

Luke Holland
Chief of Staff
Office of U.S. Senator James M. Inhofe
(p) 202-224-4721

Message

From: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
Sent: 4/24/2018 2:36:17 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: FW: Letter from Senators Carper and Whitehouse
Attachments: 2018 04 24 Kevin Minoli_Perrotta.pdf

fyi

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Ferrato, Margaret (Whitehouse)
Sent: Tuesday, April 24, 2018 10:33 AM
To: Minoli.Kevin@epa.gov
Cc: Lyons, Troy <lyons.troy@epa.gov>; Palich, Christian <palich.christian@epa.gov>; Gaeta, Joe (Whitehouse) <Joe_Gaeta@whitehouse.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: Letter from Senators Carper and Whitehouse

Hello Kevin,

I hope you're well. Attached please find a letter to you from Senators Carper and Whitehouse. Don't hesitate to reach out with any questions or concerns.

All the best,
Maggie

Margaret Ferrato
Associate Legislative Assistant
Office of Senator Sheldon Whitehouse
530 Hart Senate Office Building
Washington, DC 20510
(202) 224-6564

United States Senate
WASHINGTON, DC 20510

April 24, 2018

Kevin Minoli
Principal Deputy General Counsel
Designated Agency Ethics Official
Environmental Protection Agency
1200 Pennsylvania Avenue NW, 2310A
Washington, D.C. 20460

Dear Mr. Minoli,

On March 6, 2018, we wrote to EPA Administrator Scott Pruitt requesting information about whether Pasquale "Nino" Perrotta, the Acting Special Agent in Charge of the Administrator's personal security detail, had been properly cleared by EPA officials to be a "principal" in Sequoia Security Group, a security firm Mr. Perrotta claims he founded. We specifically asked for:

- All requests for approval of outside employment by Mr. Perrotta, including supporting documentation and any other information relevant to the requirements of 5 C.F.R. 6401.103.
- All approvals given by EPA for his outside employment, including any guidance about or limitations to those approvals in any form.
- All financial disclosures made by Mr. Perrotta during his employment at EPA. If Mr. Perrotta did not make financial disclosures for any period of his employment at EPA, please provide an explanation of those gaps.[1]

While we have not yet received a response to our letter, EPA has been able to release the attached "Approval of Request for Outside Activity/Employment" in response to an article about Perrotta in the *New York Times*.[2] If this document is EPA's basis for claiming that Mr. Perrotta has been cleared, under EPA regulations, to run a private security consulting firm while running the Administrator's personal security detail, it is insufficient on its face for at least three reasons.

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[1] Letter from Senator Tom Carper and Senator Sheldon Whitehouse to EPA Administrator Scott Pruitt (Mar. 6, 2018) (available at https://www.whitehouse.senate.gov/news/release/whitehouse-carper-raise-red-flags-about-epa-contract-with-business-partner-of-pruitts-security-chief).
[2] Kenneth P. Vogel, Eric Lipton, and Lisa Friedman, "At E.P.A., Pruitt's 'Sheriff' Clashed With Critics of Spending," *The New York Times*, Apr. 12, 2018 (available at https://www.nytimes.com/2018/04/12/climate/epa-scott-pruitt-pasquale-perrotta.html).

First, the approval states that it "is effective for a period of five (5) years." That five-year limitation is required by 5 CFR 6401.103(d). Mr. Perrotta's approval was issued on March 5, 2013, so it has expired.

Second, 5 CFR 6401.103(d) also states, "[i]f there is a change in the nature or scope of the duties or services performed or the nature of the employee's business, the employee must submit a revised request for approval." Mr. Perrotta's duties at EPA have changed significantly since 2013. As *The New York Times* reported, and as we have confirmed through interviews with current and former EPA staff, Mr. Perrotta was named acting Special Agent in Charge just last year, and was elevated from a GS-13 to a GS-15 pay grade. The *Times* also reported that Mr. Perrotta "played a central role in approving Mr. Pruitt's regular use of first-class flights," "pushed for the construction of a $43,000 surveillance-proof booth in Mr. Pruitt's office in Washington," and "pressed, unsuccessfully, for a bulletproof vehicle for Mr. Pruitt and a bulletproof desk for his security detail." This reporting has also been confirmed by people with knowledge who have spoken with our staffs. Mr. Perrotta did not perform any of these functions for prior EPA administrators, so they plainly constitute a "change in the nature and scope of the duties or services" he performs.

Third, it appears that Mr. Perrotta has failed to keep EPA apprised of the nature and scope of his business. When he sought authorization for this outside employment in 2013, Mr. Perrotta represented to the agency that he expected to be "self-employed" "to provide consulting to 2-3 clients, for approximately 3-6 hours per week" related to cybersecurity and "denial of service insurance." He did not mention that his self-employment would be establishing a firm, the Sequoia Security Group, that currently lists six officers and advisors. The firm offers a far broader range of services than originally disclosed, including investigation, executive protection, risk and crisis management, cyber security, corporate compliance, security vulnerability and threat assessments, and technical surveillance countermeasures.[3] Not only does the nature and scope of Mr. Perrotta's business appear to have changed since 2013, but he now does work for private clients that closely aligns with his work for EPA and it appears he directed some of that work to one of his business associates, Edwin Steinmetz.

Based on the facts we know, we seek to understand how your office has evaluated and monitored authorizations it provides under 5 CFR 6401.103 for Mr. Perrotta and perhaps others at EPA as well. So that we may better understand whether EPA is following its own policies and regulations, we request copies of all requests for and approvals or denials of outside employment processed by your office since January 21, 2009, along with supporting documentation. Our staffs would be pleased to work with your office to establish a procedure for reviewing these documents that does not improperly infringe upon the privacy rights of EPA employees.

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[3] http://sequoiasecuritygroup.com/service.html

We request the courtesy of a response no later than May 4, 2018. Should you have any questions, please do not hesitate to contact Michal Freedhoff (michal_freedhoff@epw.senate.gov) or Joe Gaeta (joe_gaeta@whitehouse.senate.gov).

Sincerely,

Thomas R. Carper
United States Senator

Sheldon Whitehouse
United States Senator

cc: Troy Lyons, Associate Administrator, Office of Congressional and Intergovernmental Relations, Environmental Protection Agency

Message

From: Oklahoma City DC Fly In [oklahomacitydcflyin@okcchamber.com]
Sent: 4/19/2018 3:46:12 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Reminder: Congressional Reception with Greater Oklahoma City Chamber & Senator James Inhofe

You have been sent a reminder for the following event

Congressional Reception with the Greater Oklahoma City Chamber Leaders and U.S. Senator James Inhofe

To view your invitation please click the link below.
If you have already responded - thank you. Please disregard this message.

If you are unable to click on the link please copy and paste the address into your web browser.
https://einvitations.afit.edu/inv/anim.cfm?i=387829&k=01694501795E

Cordially,

Meredith Manley, CMP
Senior Events Manager
(P) 405.297.8964 | (F) 405.297.8919 Ex. 6
Greater Oklahoma City Chamber
123 Park Avenue | Oklahoma City, OK 73102

Message

From: Andrew Perez [andrew@maplight.org]
Sent: 5/4/2018 7:36:17 PM
To: Abboud, Michael [abboud.michael@epa.gov]; Wilcox, Jahan [wilcox.jahan@epa.gov]; Daniell, Kelsi [daniell.kelsi@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Seeking info on whether Admin Pruitt double dipped
Attachments: Screen Shot 2018-05-04 at 3.04.54 PM.png; Screen Shot 2018-05-04 at 3.04.25 PM.png; Screen Shot 2018-05-04 at 3.10.42 PM.png; Screen Shot 2018-05-04 at 3.10.10 PM.png

Hey -

I recently reached out to you all about a $400 reimbursement Administrator Pruitt sought on his way out as Oklahoma attorney general for items that had been purchased six years earlier.

Here's that story: https://maplight.org/story/mirror-mirror-on-the-ags-wall-and-six-years-later-also-on-pruitts-expense-account/

Oklahoma campaign finance records strongly suggest Pruitt had already been reimbursed from his campaign account for the same items.

In August 2014, the campaign repaid him for expenses at the same stores that match up exactly with the receipts he presented for reimbursement in Feb. 2017. I am including pictures for your review.

So our question to you is - did Administrator Pruitt double dip on these expenditures? If so, why? And is he going to pay the state back?

I know I just sent a request for comment on a separate story but I would appreciate if you handle this one first.

Thank you,
Andrew

ANDREW PEREZ
MapLight
Political Reporter
Ex. 6
t: @andrewperezdc

Aug 07, 2014	Office Artwork/Decorations for Officeholder - Pirates Alley	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$18.69
Aug 07, 2014	Business Meals for Officeholder - Beacon Club - 06/2014	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$59.61
Aug 07, 2014	Business Meals for Officeholder - 08/2013	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$82.59
Aug 07, 2014	Office Artwork/Decorations for Officeholder - Pirates Alley	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$238.43
Aug 07, 2014	Business Meals for Officeholder - Beacon Club - 05/2011	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$322.11
Aug 07, 2014	Business Meals for Officeholder - Beacon Club - 12/2011	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$59.61
Aug 07, 2014	Airline Baggage Charge - 1/2013	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$25.00
Aug 07, 2014	Business Telephone Expenses for Officeholder - Verizon 12/2012	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$110.90
Aug 07, 2014	Business Telephone Expenses for Officeholder - AT&T 07/2014	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$157.06
Aug 07, 2014	Office Artwork/Decorations for Officeholder - Hobby Lobby	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$35.74
Aug 07, 2014	Office Artwork/Decorations for Officeholder - Essentials	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$23.87
Aug 07, 2014	Office Artwork/Decorations for Officeholder - World Market	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$63.87
Aug 07, 2014	Office Artwork/Decorations for Officeholder - TLC	Scott Pruitt 2834 S. Utica	Scott Pruitt for Attorney	Officeholder Expenses	$18.40

Pirates Alley
The Mark of Fine Framing

1700 NW 23rd Street
Oklahoma City, OK 73106-1408
405-525-0091
405-525-3773(Fax)
info@piratesalleyokc.com
www.piratesalleyokc.com

INVOICE

52582
Mon, Feb 7, 2011

SOLD TO
Ann MANLEY
Ex. 6

SHIP TO

(405) 858-0092
Ex. 6

Cust Num	PO Number	Terms	Due Date	Sales Rep	Tax Exemption Number(s)
10371		Net		DARRELL	

Reference	Description	L/E #	Artist	Unit Price	Qty	Subtotal	Disc	Savings	Price
5157	tiffany 44x55 ant black			440.00	1	440.00	50%	-220.00	220.00

(matter in conference room)

Sale

Ex. 6 [redacted]

Entry Method: Swiped

Approval Online

Total: $ 238.43

73-1058921

Celebrating 40 Years in Business
See us on FaceBook

Date	Tender	Reference	Amount
2/8/11	MC	3705	238.43

Subtotal	440.00
Savings	-220.00
Sales Total	220.00
Tax	18.43
Total	238.43
Payment	-238.43
Balance	

payable upon receipt
73-1058921

18 ORA 37 Perez 0576

Page 1

Aug 07, 2014	Business Meals for Officeholder - Beacon Club - 07/2012	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$59.61
Aug 07, 2014	Office Artwork/Decorations for Officeholder - Bed Bath & Beyond	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$97.45
Aug 07, 2014	Office Artwork/Decorations for Officeholder - TLC Memorial	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$179.33
Aug 07, 2014	Business Meals for Officeholder - Beacon Club - 09/2013	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$59.61
Aug 07, 2014	Business Telephone Expenses for Officeholder - AT&T 09/2011	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$124.79
Aug 07, 2014	Business Telephone Expenses for Officeholder - AT&T 10/2011	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$122.73
Aug 07, 2014	Business Telephone Expenses for Officeholder - AT&T 09/2012	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$102.65
Aug 07, 2014	Office Artwork/Decorations for Officeholder - Pirates Alley	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$19.51
Aug 07, 2014	Business Meals for Officeholder - Beacon Club - 12/2012	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$59.61
Aug 07, 2014	Business Telephone Expenses for Officeholder - AT&T 05/2012	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$123.15
Aug 07, 2014	Business Meals for Officeholder - 06/2013	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$153.15
Aug 07, 2014	Business Telephone Expenses for Officeholder - AT&T 03/2012	Scott Pruitt 2834 S. Utica Tulsa, OK 74114	Scott Pruitt for Attorney General	Officeholder Expenses	$123.15
Aug 07, 2014	Business Telephone Expenses for Officeholder - AT&T	Scott Pruitt 2834 S. Utica	Scott Pruitt for Attorney	Officeholder Expenses	$123.15

TLC MEMORIAL
105 WEST MEMORIAL
OKLAHOMA CITY, OK 73114
405-751-0630

Ticket# T-1-000089810
Station: 6 User: KELLI
Customer # 8580092
1/5/2011 11:34 AM

Item # Description	Qty	Price	Total
CANNS10A	1	45.00	45.00
CANE, MASS 10" 4-3-2			
Hi! I'm an easy care plant. I like good to medium light but will tolerate low light. Just ask your TLC plant specialist for details. Water me when my soil feels dry 1" deep. Feed me every 2 months with TLC Premium 20-20-20. I am fluoride sensitive so please let my water set out overnight before using.			
SAUCC12	1	1.50	1.50
SAUCER, YS CLEAR 12"			
SPNSHMSS	1	6.99	6.99
MOSS, SPANISH 450 CU			
JP9041B	1	92.99	92.99
JP 12" TALL SQUARE			
KECOROLLSAB	1	18.99	18.99
SAUCER, CADDY CLEAR 14"			

Subtotal	165.47
Tax	13.86
Total	179.33
Tender:	
Visa	179.33
# ***[redacted]	
Items purchased:	5.00

ANN MANLEYS
OKC, OK 73120

Discount Sales Have No Warranty.

In times of great uncertainty, Federal employees need the skills to work past disagreements and find a way to get the best results.

Message

From: Chris McCloskey [Chris.McCloskey@dalecarnegie.com]
Sent: 4/19/2018 3:37:51 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: How to Lead in Times of Change ebook

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Hi Ryan,

In times of great uncertainty and change, Federal employees need the skills to work past disagreements and find a way to get the best results for their organization. Working together to overcome challenges is a part of workplace resiliency that's critical in today's environment.

Dale Carnegie helps federal agencies be more resilient, resourceful, and positive. Download our ebook, **How to Lead Change without Resistance or Resentment**.

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Dale Carnegie is the leader in building positive human relationships through transformational learning programs. Contact us to learn more about our Resilience in Leadership Training for Federal employees.

Sincerely,

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Message

From: Gretchen Goldman [GGoldman@ucsusa.org]
Sent: 4/23/2018 9:28:26 PM
To: Pruitt, Scott [Pruitt.Scott@epa.gov]; adm14pruitt@epa.gov
CC: Leopold, Matt [Leopold.Matt@epa.gov]; Wehrum, Bill [Wehrum.Bill@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]; Orme-Zavaleta, Jennifer [Orme-Zavaleta.Jennifer@epa.gov]; Neomi.Rao Ex. 6 Ex. 6 Yogin Kothari [YKothari@ucsusa.org]; Emily Berman [EBerman@ucsusa.org]
Subject: Letter from 985 scientists to Administrator Pruitt
Attachments: Letter from 985 scientists to Administrator Scott Pruitt opposing policy to restrict science.pdf

Dear Administrator Pruitt,

Please find the attached letter from 985 scientists and technical experts urging you to stop any plans to restrict the use of best available science at the Environmental Protection Agency.

Best,

Gretchen T. Goldman, Ph.D.
Research Director, The Center for Science and Democracy
Office: 202-331-6942
Union of Concerned Scientists | 1825 K Street NW, Suite 800 | Washington, DC 20006
Subscribe to my blog | Follow me on Twitter

April 23, 2018

The Honorable E. Scott Pruitt
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Re: Don't Restrict EPA's Ability to Rely on Science

Dear Administrator Pruitt,

As scientists and technical experts, we urge you to cease any plans to restrict the types of science that the Environmental Protection Agency (EPA) can use in regulatory decisionmaking. EPA can only adequately protect our air and water and keep us safe from harmful chemicals if it takes full advantage of the wealth of scientific research that is available to the agency.

Recent news reports[1] suggest that you plan to adopt restrictions on research similar to those contained in two pieces of proposed legislation (the Secret Science Reform Act and the HONEST Act), which have both repeatedly failed to pass Congress for several years for good reason.[2] Multiple major scientific societies repeatedly came out strongly against the legislation at the time. "We urge caution in setting laws that submerge science beneath politics," they wrote.[3]

Proponents for these radical restrictions purport to raise two sets of concerns: reproducibility and transparency. In reality, these are phony issues that weaponize 'transparency' to facilitate political interference in science-based decisionmaking, rather than genuinely address either. The result will be policies and practices that will ignore significant risks to the health of every American.

First, many public health studies cannot be replicated, as doing so would require intentionally and unethically exposing people and the environment to harmful contaminants or recreating one-time events (such as the *Deepwater Horizon* oil spill). Second, there are multiple valid reasons why requiring the release of all data does not improve scientific integrity and could actually compromise research, including intellectual property, proprietary, and privacy concerns. Further, EPA has historically been transparent in demonstrating the scientific basis of its decisions, so the public can hold the agency accountable to establish evidence-based safeguards; any changes should be made with the full consultation with and support of the scientific community.

There are ways to improve transparency in the decisionmaking process, but restricting the use of science would improve neither transparency nor the quality of EPA decisionmaking. If fully implemented, this proposal would greatly weaken EPA's ability to comprehensively consider the scientific evidence across the full array of health effects studies. This would negatively impact EPA public protections that reduce levels of lead, harmful chemicals, and fine particle pollution, among others.

Again, we urge you to stop any plans to restrict the science that EPA can use in decision-making across the board or on any specific issue, and instead to protect the integrity of science at EPA. We stand by ready to help EPA fulfill its science-based mission to protect public health and the environment.

Sincerely,

The undersigned,
985 scientists

Cc:
Matthew Z. Leopold, General Counsel
William Wehrum, Assistant Administrator, Office of Air and Radiation
Dr. Jennifer Orme-Zavaleta, Principal Deputy Assistant Administrator for Science
Neomi Rao, Administrator, Office of Information and Regulatory Affairs

[1] https://www.epa.gov/newsreleases/daily-caller-scott-pruitt-will-end-epas-use-secret-science-justify-regulations
[2] https://blog.ucsusa.org/gretchen-goldman/scott-pruitt-will-restrict-the-epas-use-of-legitimate-science
[3] https://mcmprodaaas.s3.amazonaws.com/s3fs-public/HR%201430%20HONEST%20Act%20Multisociety%20Letter%20of%20Concern.pdf

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Bruce Lott, M.S.
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D. Mark Manley, Ph.D.
Cuyahoga Falls, OH 44223

Joni Manson, Ph.D.
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Arthur Murdoch, Ph.D.
Atwater, OH 44201

Stanton Musick, Ph.D. candidate
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Susan Righi, M.D.
New Marshfield, OH 45766

George Sorial, Ph.D.
Cincinnati, OH 45221

Pamela Unger, M.S.
Columbus, OH 43229

Paul Voytas, Ph.D.
Springfield, OH 45504

Brenda Winnewisser, Ph.D.
Worthington, OH 43085

Chadwick Wright, M.D.
Lewis Center, OH 43035

Howard Baer, Ph.D.
Norman, OK 73071

Robert Nairn, Ph.D.
Norman, OK 73071

Mickey White, M.S.
Mustang, OK 73064

Stephen Bachhuber, M.D.
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Myrtle Point, OR 97458

Demelza Costa, M.S.
Sweet Home, OR 97386

Kimberly Crihfield, M.D.
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Laura Hanks, M.S.
Milwaukie, OR 97222

Paula Hood, M.S.
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Angela Horgan, Ph.D.
Portland, OR 97215

Sandra Joos, Ph.D.
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Kathryn Karas, M.S.
Beaverton, OR 97007

Jack Keyes, Ph.D.
Portland, OR 97236

Ned Knight, Ph.D.
Newberg, OR 97132

Edward J Kushner, Ph.D.
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Dr. Beverly Law, Ph.D.
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Arthur Miller, Post doc
Sisters, OR 97759

Gary Millhollen, Ph.D.
Eugene, OR 97408

Chris Moser, M.S.
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Desmond Murphy, M.S.
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Jeffrey Nason, Ph.D.
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Hugh Peach, Ph.D.
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Bonnie Reagan, M.D.
Portland, OR 97212

Peter Reagan, M.D.
Portland, OR 97212

Daniel Roby, Ph.D.
Corvallis, OR 97330

Andrew Rorick, M.S.
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Michael Stock, Ph.D.
Portland, OR 97223

Mark Surette, Ph.D. candidate
Corvallis, OR 97331

Ray Teplitz, M.D.
Medford, OR 97504

John Toner, Ph.D.
Eugene, OR 97403

Mary Vorachek, M.D.
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Randall Webb, M.S.
Portland, OR 97210

Jean-Paul Zagarola, M.S.
Corvallis, OR 97333

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Bala Cynwyd, PA 19004

Yair Argon, Ph.D.
Philadelphia, PA 19104

Joel Bennett, M.D.
Philadelphia, PA 19104

Joseph Bridy, M.S.
Philadelphia, PA 19148

Thomas Campbell, M.S.
Philadelphia, PA 19146

Jeffrey Carey, Ph.D. candidate
Philadelphia, PA 19128

Bobb Carson, Ph.D.
Coopersburg, PA 18036

Garry Chick, Ph.D.
Port Matilda, PA 16870

David Christiansen, M.D.
Mechanicsville, PA 18934

Sharon Conway, M.S.
Moscow, PA 18444

John Cooper, Ph.D.
Lewisburg, PA 17837

Brenda Daily, Ph.D.
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Shubham Das, Ph.D. candidate
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York, PA 17403

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State College, PA 16803

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Michelle Homan, Ph.D.
Erie, PA 16541

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Alandra Kahl, M.S.
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Kelly Matthews, Ph.D.
Manheim, PA 17545

Meagan Mauter, Ph.D.
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Molly McGuire, Ph.D.
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Steven Meister, M.D.
Bryn Mawr, PA 19010

Lenore Melmeyer, Ph.D.
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Jessica Robbins, Ph.D.
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Irwin, PA 15642

Daniel Safer, Ph.D.
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Cecilia Tommos, Ph.D.
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Memphis, TN 38111

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Chattanooga, TN 37406

Greg Loflin, M.S.
Knoxville, TN 37920

R Kenneth Reece, Ph.D.
Knoxville, TN 37922

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Johnson City, TN 37604

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Round Rock, TX 78664

Troy Ladine, Ph.D.
Marshall, TX 75670

Astrid Layton, Ph.D.
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Benjamin Liles, Ph.D.
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Lauren Stadler, Ph.D.
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Lake Stevens, WA 98258

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White Salmon, WA 98672

James Watson, M.D.
Gig Harbor, WA 98335

James Wechsler, Ph.D.
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Reitha Weeks, Ph.D.
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M.Marian Wineman, M.S.
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Fond Du Lac, WI 54937

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Michael Switzenbaum, Ph.D.
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Morgantown, WV 26508

David Yelton, Ph.D.
Morgantown, WV 26505

Ellin Stiteler, M.D.
Gillette, WY 82718

Message

From: Matthew Mulrine [matthew.mulrine@thedataincubator.com]
Sent: 4/1/2019 2:22:43 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: Data Science/Analytics Training at Office of the Administrator, EPA --The Data Incubator

Hello Ryan,

Following up on the below. Was wondering if you had a chance to review our courses yet. What questions do you have about which learning pathway would be best for your team?

Alternatively, if your analytics team is still just finding it's legs, let's talk about how we can get you moving in the right path. You should be exploiting your data to exponentially increase efficiencies and discover new insights, thereby meeting missions and/or increasing revenues at a much higher pace.

Take a look at just a bit of the work our industry thought leaders are contributing to Harvard Business Review, MIT Sloan Management Review, Wall Street Journal, O'Reilly, Entrepreneur, Tech Target, Venture Beat, Tech Crunch, and Fast Company, among others.

Look forward to hearing back from you.

Best,
Matt

Matt Mulrine
Director, Government Business Development | 703.794.5666

THE DATA INCUBATOR
A PRAGMATIC INSTITUTE COMPANY
thedataincubator.com

Don't want to be contacted anymore?
Reply to this message with "REMOVE" to cease emails.
The Data Incubator, 1601 Connecticut Ave NW, Suite 400, Washington, DC 20009

Message

From: Matthew Mulrine [matthew.mulrine@thedataincubator.com]
Sent: 3/25/2019 2:39:49 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Data Science/Analytics Training at Office of the Administrator, EPA --The Data Incubator

Hello Ryan,

I am Matt Mulrine, Director of Government BD at the The Data Incubator. We are the industry-leading Data Science training company that enables our partners and clients to accelerate the existing skills of your internal employees by equipping them with the latest data science techniques and tools. We can also give you the foundation to jumpstart or meet your organization's initiatives and requirements by harnessing the transformative power of your data.

Our PhD instructors teach to your team's specific needs, with modules ranging from beginner-level Data Science Foundations to Predictive Analytics and Advanced Machine Learning/AI.

We deliver the training--customized if needed--to your desired site location over a 3--5 day period. We can also instruct live-online to accommodate your situation, and we offer courses for individuals if you are not ready to train a full team.

Can you chat for a few minutes this week or early next? I look forward to speaking with you and learning how we can best add value to your team.

Best,
Matt

Matt Mulrine
Director, Government Business Development | ✆ 703.794.5666

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The Data Incubator, 1601 Connecticut Ave NW, Suite 400, Washington, DC 20009

Message

From: Jackson, Ryan [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=38BC8E18791A47D88A279DB2FEC8BD60-JACKSON, RY]
Sent: 1/9/2019 5:01:07 PM
To: Terry_VanDoren@mcconnell.senate.gov
CC: TROY M. LYONS (lyons.troy@epa.gov) [lyons.troy@epa.gov]
Subject: we just wanted to ensure you had seen
Attachments: !PN22_EPW.PDF

Ryan Jackson
Chief of Staff
U.S. Environmental Protection Agency
(202) 564-6999

UNITED STATES SENATE - OFFICE OF THE SECRETARY
NOMINATION REFERENCE AND REPORT RECEIPT

REFERRED TO COMMITTEE: Environment and Public Works HSOB-407

DATE DELIVERED: January 9, 2019 TRANSMITTED BY E-MAIL

Environmental Protection Agency

PN22

Andrew Wheeler, of Virginia, to be Administrator of the Environmental Protection Agency, vice Scott Pruitt.

NOMINATION REFERENCE AND REPORT

PN22

AS IN EXECUTIVE SESSION,
SENATE OF THE UNITED STATES,
January 9, 2019.

Ordered, That the following nomination be referred to the Committee on Environment and Public Works:

Andrew Wheeler, of Virginia, to be Administrator of the Environmental Protection Agency, vice Scott Pruitt.

_____, 2019.
(Date)

Reported by Mr. Barrasso _____
(Signature)

with the recommendation that the nomination be confirmed.

☐ **The nominee has agreed to respond to requests to appear and testify before any duly constituted committee of the Senate.**

EPW
PN22

The White House,

JAN - 9 2019

To the

Senate of the United States.

I nominate Andrew Wheeler, of Virginia, to be Administrator of the Environmental Protection Agency, vice Scott Pruitt.

DONALD J. TRUMP

Message

From: Jackson, Ryan [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=38BC8E18791A47D88A279DB2FEC8BD60-JACKSON, RY]
Sent: 1/9/2019 9:01:00 PM
To: Russell, Richard (EPW) [Richard_Russell@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]; Palich, Christian [palich.christian@epa.gov]
Subject: RE: NOTICE: Senate Committee on Environment and Public Works hearing entitled, "Hearing on the Nomination of Andrew Wheeler to be Administrator of the Environmental Protection Agency," Wednesday, January 16, 2019 at 10:00 AM

BOOM.

Big thanks.

From: Russell, Richard (EPW) [mailto:Richard_Russell@epw.senate.gov]
Sent: Wednesday, January 9, 2019 3:59 PM
To: Lyons, Troy <lyons.troy@epa.gov>; Palich, Christian <palich.christian@epa.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Subject: FW: NOTICE: Senate Committee on Environment and Public Works hearing entitled, "Hearing on the Nomination of Andrew Wheeler to be Administrator of the Environmental Protection Agency," Wednesday, January 16, 2019 at 10:00 AM
Importance: High

Richard M. Russell
Staff Director
Senate Committee on Environment and Public Works
202 224-6176

From: Trenti, Beth (EPW) <Beth_Trenti@epw.senate.gov>
Sent: Wednesday, January 9, 2019 3:49 PM
To: Balash, Joe (Sullivan) <Joe_Balash@sullivan.senate.gov>; Brubaker, Joel (Capito) <Joel_Brubaker@capito.senate.gov>; Goeas, Lisa (Ernst) <Lisa_Goeas@ernst.senate.gov>; Hack, Joe (Fischer) <Joe_Hack@fischer.senate.gov>; Jackson, Ryan (Inhofe) <Ryan_Jackson@inhofe.senate.gov>; Kunsman, Dan (Barrasso) <Dan_Kunsman@Barrasso.senate.gov>; Skjonsberg, Rob (Rounds) <Rob_Skjonsberg@rounds.senate.gov>; Tolar, Helen (Boozman) <Helen_Tolar@boozman.senate.gov>; DailyDigest <SecretaryDailyDigest@routing.senate.gov>; Gross, Amy (SAA) <Amy_Gross@saa.senate.gov>; Johnston, Joseph (Secretary) <Joseph_Johnston@sec.senate.gov>; Senate RTVG (SAA) <SenateRTVG@saa.senate.gov>; Tratos, Elizabeth (Secretary) <Elizabeth_Tratos@sec.senate.gov>; Adhar, Radha (Duckworth) <Radha_Adhar@duckworth.senate.gov>; Bansal, Rajan (Duckworth) <Rajan_Bansal@duckworth.senate.gov>; Barry, Giselle (Markey) <Giselle_Barry@markey.senate.gov>; Baugh, Jordan (Gillibrand) <Jordan_Baugh@gillibrand.senate.gov>; Beaton, Alex (Budget) <Alex_Beaton@budget.senate.gov>; Becerra, Dan (Merkley) <Dan_Becerra@merkley.senate.gov>; Becker, Kelsey (Duckworth) <Kelsey_Becker@duckworth.senate.gov>; Binsted, Kim (Whitehouse) <Kim_Binsted@whitehouse.senate.gov>; Bustamante, Michele (Markey) <Michele_Bustamante@markey.senate.gov>; Compton, Caryn (Sanders) <Caryn_Compton@sanders.senate.gov>; Conklin, Meghan (Van Hollen) <Meghan_Conklin@vanhollen.senate.gov>; Copeland, Mark (Duckworth) <Mark_Copeland@duckworth.senate.gov>; Deveny, Adrian (Merkley) <Adrian_Deveny@merkley.senate.gov>; Driscoll, Laura (Gillibrand) <Laura_Driscoll@gillibrand.senate.gov>; Dudis, Dan (Whitehouse) <Dan_Dudis@whitehouse.senate.gov>; Edwards, Ryan (Whitehouse) <Ryan_Edwards@whitehouse.senate.gov>; Frede, Shannon (Cardin) <Shannon_Frede@cardin.senate.gov>; Frey, Bridgett (Van Hollen) <Bridgett_Frey@vanhollen.senate.gov>; Gaeta, Joe (Whitehouse) <Joe_Gaeta@whitehouse.senate.gov>; Garmisa, Ben (Duckworth) <Ben_Garmisa@duckworth.senate.gov>; Goldner,

Aaron (Whitehouse) <Aaron_Goldner@whitehouse.senate.gov>; Goode, Eric (Duckworth) <Eric_Goode@duckworth.senate.gov>; Gray, Morgan (Markey) <Morgan_Gray@markey.senate.gov>; Greene, Daniel (Markey) <Daniel_Greene@markey.senate.gov>; Griffith, Lindsey (Markey) <Lindsey_Griffith@markey.senate.gov>; Harrelson, Jill (Budget) <Jill_Harrelson@budget.senate.gov>; Haynie, Deborah (Van Hollen) <Deborah_Haynie@vanhollen.senate.gov>; Hinch, Ethan (Sanders) <Ethan_Hinch@sanders.senate.gov>; Hollers, Logan (Merkley) <Logan_Hollers@merkley.senate.gov>; Jacobs, Ann (Cardin) <Ann_Jacobs@cardin.senate.gov>; Jamison, Brooke (Gillibrand) <Brooke_Jamison@gillibrand.senate.gov>; Joseph, Avenel (Markey) <Avenel_Joseph@markey.senate.gov>; Leibman, Adena (Whitehouse) <Adena_Leibman@whitehouse.senate.gov>; Maxwell, Gray (Cardin) <Gray_Maxwell@cardin.senate.gov>; Menard, Katrina (Sanders) <Katrina_Menard@sanders.senate.gov>; Mitnick, Rachel (Whitehouse) <Rachel_Mitnick@whitehouse.senate.gov>; Rampone, Emily (Budget) <Emily_Rampone@budget.senate.gov>; Rhodeside, Benjamin (Duckworth) <Benjamin_Rhodeside@duckworth.senate.gov>; Richer, Claire (Markey) <Claire_Richer@markey.senate.gov>; Schenning, Sarah (Van Hollen) <Sarah_Schenning@vanhollen.senate.gov>; Slevin, Chris (Booker) <Chris_Slevin@booker.senate.gov>; Smith, Lucas (Merkley) <Lucas_Smith@merkley.senate.gov>; Spain, Emily (Carper) <Emily_Spain@carper.senate.gov>; Stevens, Mae (Cardin) <Mae_Stevens@cardin.senate.gov>; Syed, Sharmin (Merkley) <Sharmin_Syed@merkley.senate.gov>; Tavar, Lauren (Booker) <Lauren_Tavar@booker.senate.gov>; Thomas, Katie (Sanders) <Katie_Thomas@sanders.senate.gov>; Thomson, Matt (Booker) <Matt_Thomson@booker.senate.gov>; Topper, Adam (Booker) <Adam_Topper@booker.senate.gov>; Vogel, Hannah (Markey) <Hannah_Vogel@markey.senate.gov>; Ward, Ben (Merkley) <Ben_Ward@merkley.senate.gov>; Ward, Rebecca (Merkley) <Rebecca_Ward@merkley.senate.gov>; Weinstein, David (Sanders) <David_Weinstein@sanders.senate.gov>; Wender, Joseph (Markey) <Joseph_Wender@markey.senate.gov>; Woods, Olivia (Merkley) <Olivia_Woods@merkley.senate.gov>; Zipkin, Adam (Booker) <Adam_Zipkin@booker.senate.gov>; Anderson, Mike (Sullivan) <Mike_Anderson@sullivan.senate.gov>; Atcheson, Laura (Cornyn) <Laura_Atcheson@cornyn.senate.gov>; Barlow Richardson, Michelle (Wicker) <Michelle_Richardson@wicker.senate.gov>; Beares, Ellen (Wicker) <Ellen_Beares@wicker.senate.gov>; Billingsley, Kaylan (Capito) <Kaylan_Billingsley@capito.senate.gov>; Bliss, Joe (Rounds) <Joe_Bliss@rounds.senate.gov>; Bolen, Brittany (RPC) <Brittany_Bolen@rpc.senate.gov>; Borck, Tom (Budget) <Tom_Borck@budget.senate.gov>; Brown, Joe (Boozman) <Joe_Brown@boozman.senate.gov>; Butler, Aniela (Budget) <Aniela_Butler@budget.senate.gov>; Chatterjee, Neil (McConnell) <Neil_Chatterjee@mcconnell.senate.gov>; Cole, Becky (Budget) <Becky_Cole@budget.senate.gov>; Douglas, Katie (Rounds) <Katie_Douglas@rounds.senate.gov>; Edwards, Deanna (SLC) <Deanna_Edwards@slc.senate.gov>; Elam, Erik (Sullivan) <Erik_Elam@sullivan.senate.gov>; 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McGuire, Alison (Budget) <Alison_McGuire@budget.senate.gov>; McMillin, Neal (Wicker) <Neal_McMillin@wicker.senate.gov>; McNeill, Jena (Ernst) <Jena_McNeill@ernst.senate.gov>; McNiven, Travis (Barrasso) <Travis_McNiven@Barrasso.senate.gov>; Motley, Jace (Boozman)

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Cc: Russell, Richard (EPW) <Richard_Russell@epw.senate.gov>; Leggett, Matt (EPW) <Matt_Leggett@epw.senate.gov>; Clifford, Brian (EPW) <Brian_Clifford@epw.senate.gov>

Subject: NOTICE: Senate Committee on Environment and Public Works hearing entitled, "Hearing on the Nomination of Andrew Wheeler to be Administrator of the Environmental Protection Agency," Wednesday, January 16, 2019 at 10:00 AM

Importance: High

SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

HEARING NOTICE

Senator:

The Senate Committee on Environment and Public Works will hold a hearing entitled, *"Hearing on the Nomination of Andrew Wheeler to be Administrator of the Environmental Protection Agency."*

WEDNESDAY, January 16, 2019
10:00 AM
Room 406 of the Dirksen Senate Office Building

By Order of the Chairman
John Barrasso, M. D.

Elizabeth Trenti | Director of Operations
Senate Committee on Environment & Public Works
(o) 202 . 224 . 6691

Message

From: Jackson, Ryan [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=38BC8E18791A47D88A279DB2FEC8BD60-JACKSON, RY]
Sent: 11/27/2018 6:28:47 PM
To: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]
CC: Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]; Lyons, Troy [lyons.troy@epa.gov]
Subject: RE: Peter Wright
Attachments: Secret Science letter.docx

Attached is a new letter concerning the science rule and SAB.

We have a suggestion on PFAS which you may be more interested in, maybe not.

On the other list, here are items which we can write back to do:

We can place PMNs and associated documents on EPA's website but can't commit to within 15 days because the CBI comb through takes longer than that. We can commit to briefing the committee on what our plan is to place more PMN information on the website. We can commit to posting PMNs in the Federal Register every month. We can in fact commit to placing PMNs, the exemptions (TMEs), and notices of commencement in the Federal Register each month. We should be doing this anyway, but this is specifically what we can provide monthly:

- PMNs/SNUNs/MCANs: Case number, amendment number and version, date received, manufacturer (if not CBI), use (specific or generic if CBI), chemical substance (specific or generic name if CBI).
- TME information: Case, Submission type, Version, Received date, Manufacturer, Use, Chemical substance.
- NOC information: Case, Received date, Commencement date, If amendment and type of amendment (amendment to generic name, specific name, technical contact information, etc.), chemical substance.

We can also discuss a standard operating procedure we are probably 60 days out from finalizing on making public more material substantiating the not likely determinations. We can write to commit to brief the committee on that procedure when it's ready to be released. On the framework, we can provide a letter as well or briefing on how we are evaluating new chemicals and could commit to holding another public meeting on that. The framework was described in the document as a work in progress when issued.

I can understand the CBI claims and who that's important to in particular. We can commit to provide a report or letter or whatever the form on how we are handling CBI requirements and we can in the same response commit to reviewing CBI claims for chemicals in RE's. Are you simply talking about the first ten though? We will review the claims but we also will issue the RE's for the first ten in February too in a very similar fashion to PV29. The PFAS SNUR is referenced in the upcoming report as well so that is very doable to commit to.

The WPS and certified use and designated representative provision at OMB can be withdrawn and we can write back on that as well.

There may be some more substance to provide on these, but this is about as far as we are able to go on that list. I'm glad to talk about other things on that list, but I'm a best offer kind of a guy without too much effort to low ball and offer. I want to offer what I really think we can do, so that's what this represents.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Tuesday, November 27, 2018 11:45 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>

Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

Thanks! – want to send us what you are proposing back on PFAS and CH2O and SAB as edits to the same letter? On SAB, I think we are fine with the 8 reappointments, the text we sent you about career staff advice, and depending on the call tomorrow we may want to add some document production (forward-looking, a commitment to provide some materials in the future, not before confirmation or a hotline etc), but do not expect to have new requests on policy on the advisory committee front. Happy to work to resolve a final letter text today and then start socializing this to folks.

We are headed in to talk to TC right now but can make time this afternoon if you want to talk through logistics, Dunn, or anything else.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 27, 2018 11:37 AM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

We can accept that edit.

I am strengthening the PFAS answer presently. I need to get some answer concerning formaldehyde so that everyone understands the procedure moving forward, but we can agree to IRIS processing of the chemical.

Finally, I have responses to the list of items concerning Alex, however, we need to have a conversation about it and what happens to all this if Peter and Chad can't get confirmed.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Tuesday, November 27, 2018 9:59 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

The Wehrum letter committed to the future denial of a rulemaking petition before it actually did so, among other commitments made. But in lieu of the first suggested edit, how about this one, which is intended to mirror a commitment to a policy but not specify a rulemaking outcome in a different part of the letter?

Let us know when you want to talk to figure the rest (formaldehyde and PFAS in particular) out. Happy to also share what I'm thinking in terms of process and what we will do to pave the way assuming we get to a good place on the substance.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, November 26, 2018 9:04 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re: Peter Wright

We didn't propose doing credit for exporting ethanol.

Ryan Jackson
Chief of Staff
U.S. EPA
202-564-6999

On Nov 26, 2018, at 7:52 PM, Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov> wrote:

> Why not? You did exactly that for Wehrum/Ernst didn't you?
>
> Sent from my iPhone
>
> On Nov 26, 2018, at 7:42 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> > We cannot put in a letter that the final rule will say something in particular. We cannot accept that last edit.
> >
> > **From:** Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
> > **Sent:** Wednesday, November 21, 2018 3:21 PM
> > **To:** Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
> > **Cc:** Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
> > **Subject:** RE: Peter Wright
> >
> > Ryan – thanks for the response. We are definitely making progress.
> >
> > First of all, just to respond to the Goo/SAB/ERRDA issue, the Goo memo explicitly refers to the **pre**-proposal stage, so we continue to think you are out of compliance with ERRDA. There is case law on this point that I imagine your lawyers are well aware of. I think the additions you made to the letter regarding SAB input and the need to re-propose may render this a moot point. Here is the rest (minus FARM)-
> >
> > 1. **Secret science** – added a very minor suggested tweak, and continue to wonder about the RIA. This rule will have impacts on other rules EPA promulgates, so it isn't entirely fair to say that the RIA isn't needed because this rule is only about EPA administration costs. I'd just ask that you think about that one again. But this letter is coming along and we appreciate it.

2. **Formaldehyde** – nothing new here, just waiting for you to get back to us on the pending request.

3. **SAB** – Re-appointing the 8 is very helpful - thanks. Happy to talk to the person you recommend we talk to as well, especially after you and he reviews what I'm including below.

   We want to talk further about process, but are willing to drop the proposal that you abandon the EPA grants conflict of interests thing (which we hate, so abandoning it is an accommodation on our part). When we talk about process, it isn't just about the EPA grants conflict of interest. It's about how recommendations are made for who to appoint. You have 7 SAB members that you're in the process of re-appointing, and a bunch of pending nominees for these slots. Historically, as nominees were being considered, EPA career staff would look at who was leaving and what needs SAB had in the coming year. So, for example, if all 7 departing people were industry people, one would expect the career staff to recognize that the SAB balance would argue for the appointment of new industry people and they would prepare options for new nominees that would be mostly or all industry people. If two of the 7 departing people were the SAB's only epidemiologists, and career staff knew that in the next year the SAB had a ton of epidemiology to do, they would prepare options for new nominees that would ensure the SAB retained its epidemiology capacity. Career staff would send decision-makers some document(s) that described who was leaving, what capacity was being lost, and recommend options for new appointees that addressed concerns that SAB retain diverse and qualified members and maintain core capacity. This Administration seems to have abandoned that process at least for some advisory committees. We'd like you to return to it. Note that decision-makers can choose not to accept the career staff recommendations, but those decision-makers should at least have the benefit of career staff input.

   Perhaps you could also include in a commitment letter on this that "EPA will follow its past practice of obtaining information and recommendations from EPA's career staff to ensure that new appointees to EPA's scientific advisory committees are independent, well-qualified, free of conflicts of interest, come from diverse technical and professional backgrounds and possess expertise in areas that the agency anticipates to be relevant in planned or anticipated reviews."

4. **PFAS** – nothing new here, just let us know what that language looks like

5. **TA** – thanks – had a brief call with the staff and sent some follow-up questions in writing. I'd really appreciate fast turnaround, and I tried hard to make them easy questions.

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Tuesday, November 20, 2018 7:25 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>

Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

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From: Jackson, Ryan
Sent: Monday, November 19, 2018 7:20 PM
To: 'Freedhoff, Michal (EPW)' <Michal_Freedhoff@epw.senate.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE: Peter Wright

So just a couple of points of initial feedback. The draft science policy letter is being reviewed presently. However, for ERDDA compliance we follow the attached.

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Director of Oversight

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- We can incorporate your changes on retroactivity. The text we provided we believed not only said that but provided the exact language in the proposed rule to illustrate that.
- We can incorporate your changes on PII. However, I don't think it's good for us to rely on a study from the 1950s.
- We can incorporate your changes on the top of the second page on providing legal authority, however, I'm not sure how we will conduct an RIA on internal agency procedures. We don't have an obligation to do that, and I'm not sure how to assess costs within EPA. Additionally, we don't imply. We either say it or not.
- We can incorporate your changes concerning compliance with other laws, although I don't know if we will use those cites and I would have to check the cites. There's one reference that the Clean Air Act requires agencies to do something instead of simply referencing EPA, but I would imagine that's subject to come clean up.

I can send a final draft tomorrow.

On formaldehyde, if you want an IRIS inter-agency process to happen on this which we have no control over, I can agree to that but I need to check with others here. Although Lautenberg allows 3.5 years it doesn't have to take that long. We can conduct a very public risk evaluation for the conditions of use which includes all foreseeable uses in the judgment of the Administrator so yes we can evaluate for all uses. The result of that risk evaluation is regulation. The result of an IRIS review is a nice binder for the shelf which is part of the problem with that program. Additionally, this IRIS study on formaldehyde

is something which has been ongoing for about 10 years and has until recently been criticized by the NAS and Congressional appropriations report language for its prior iterations. So yes, let me get back with you as soon as I'm able with probably an acceptance of this one too. We don't believe this is the way to approach a review of formaldehyde.

On the SAB, we are applying the same conflicts of interest rules we have always applied with the exception that if you are receiving a grant from EPA you unable to serve on the SAB. However, the specific offer was that there are 8 SAB members which have completed their first term. We propose reappointing all 8. I can provide their names tomorrow.

On PFAS, I need to check if we can lift the current draft language to send, but if we can we will accept this.

Finally, we can make a couple staff available to talk about off cycle and air conditioning credits for an hour? Let me know when works to do that. Also, I'm slow on getting a very recent federal district court case to you. It's in the 9th Circuit so maybe it doesn't matter on appeal, but the 9th Circuit is a big place. Regardless, we noticed it.

However, THE question I'm going to get when I take all this back is what do we get for doing this especially with word of a hold on Chad especially because we do have a problem with some of these requests. We need to have a telephone discussion of what this does.

Thanks.

From: Freedhoff, Michal (EPW) [mailto:Michal_Freedhoff@epw.senate.gov]
Sent: Friday, November 16, 2018 11:28 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

Ryan

Thanks for this response and for talking through some of the related issues with MF yesterday. Before sharing our response to the Wright-related matters, I wanted to let you know that we are trying to address the hold on Chad McIntosh, which as I mentioned last night, relates to this, and the hold was not lodged by a MI Senator. The fact that we have a hold on McIntosh is illustrative of the challenges EPA faces when asking to confirm any nominees through UC. We will keep you posted. We understand that there is also a blanket hold on ALL nominees for all agencies, but there is nothing we can do on that and assume it will work itself out before sine die. In the meantime, here is our response to the Wright-related matters. As always, we are happy to discuss.

1. **Secret science** Thank you for your effort to memorialize in part the conversations we have had with you, and that TC and AW have had, on this matter. We know your draft letter was a good-faith effort. However, there were some inaccuracies and misunderstandings associated with your draft. Attached

is our redline, which you should read on a PC because we tried to explain in comment boxes the reasons for our suggested edits.

2. **Formaldehyde** It does not work for us to move this request into a TSCA RE. That would add 3.5 additional years to an already years-long expensive effort, would not result in a useful product for the non-OCSPP program offices. Moreover, even if you DID consider all conditions of use, you would violate your own (illegal) TSCA rules, and more years-worth of litigation would ensue. What we want is for the IRIS risk assessment for formaldehyde to continue to be processed using the normal IRIS procedures (which I believe were actually written by Nancy Beck when she was at OMB), without additional delay. I do not believe there is middle ground on this request, but if you feel creative, let us know.

3. **Science panels** What we are looking for is a return to your normal procedures (including for how conflicts of interest are assessed) for appointments and reappointments. These procedures are documented in writing at EPA, but EPA is not following them. I understand you mentioned the potential for a compromise involving some specific re-appointments. I would be interested in additional specificity (names, what panel, etc) on that so we can better respond to that offer.

4. **PFAS/CERCLA** We are glad that this is within the scope of your PFAS action plan, and know that it would need to be undertaken by rulemaking and thus could not be completed before the end of the Congress. Could AW make a written commitment to Senator Carper that this will occur and provide a rough timeframe for the NPRM and final agency action? We can edit draft letter language quickly.

5. **FARM** We understand that our staff and yours will engage substantively in coming days/weeks. As part of the conversation RJ and MF had yesterday, she also flagged more systemic concerns about the manner in which the agency engages with us. To that end, I've flagged for both of you, repeatedly, a TA request on cars I submitted about 3 weeks ago that Mandy has told EPA career staff they do not have permission to undertake. I'd like that call to occur early next week. Note that I do not consider this a 'give' on your part – I consider the provision of TA to be the normal manner in which EPA has historically done its job.

Thanks very much

Michal

Michal Ilana Freedhoff, Ph.D.
Director of Oversight
Committee on Environment and Public Works Democratic Staff

From: Jackson, Ryan <jackson.ryan@epa.gov>
Sent: Monday, October 22, 2018 11:29 AM
To: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: Peter Wright

To provide a specific update on this and overall update, we are updating and clarifying text for this answer. I'm anticipating getting some final language or simply thumbs up from our program office shortly. I also will provide an update to the EPCRA 304 site on the cites used.

On the accidental releases terminology, our program offices chose that term to distinguish a one-time, inadvertent release from a "continuous release" that "occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes." 40 CFR 302.8(b). There's different reporting requirements under CERCLA 103(f)(2) and EPCRA 304 for continuous releases versus a temporary or accidental or one time one. That's the distinction they report to me they are attempting to make.

On science transparency rules, you may have noticed that the unified regulatory agenda places it further out because of the anticipated time involved on this. The attached draft is an example of what we could provide to answer some specific and overall questions from the Senate about our timing, thoughts, and any path forward.

The formaldehyde study might have a pathway ahead which would be better than sending the study through intra-agency review, but I hope to have an answer on that soon.

On the science boards, there's a track record of board members leaving or not getting reappointed. However, it's not easy to determine why. Maybe they didn't apply or maybe they did. We have reappointed some and accepted new applicants in other cases and can provide that information. We can also provide the nominating individuals too. Some self nominate, but others come from other sources if that's of interest.

Finally, on CERCLA eligibility, we are in the process of putting together our PFAS strategy based on the 6 townhalls and record which closed 3 weeks ago. This is within that process. But also, this will require rulemaking which is not entirely within our control and for this will take a while. Something to get this request narrowed would be worth talking about, I think.

From: Repko, Mary Frances (EPW) [mailto:mary_frances_repko@epw.senate.gov]
Sent: Friday, October 5, 2018 5:47 PM
To: Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Lyons, Troy <lyons.troy@epa.gov>
Subject: RE:

Ryan,

We are glad you took down the guidance link from the website, and that is helpful. But there are a few more issues with what the agency's website says now that the guidance is down.

The site says:

EPCRA Reporting Requirements

Do I need to submit an EPCRA report?
No. Based on the criteria for EPCRA section 304 release reporting, air emissions from animal waste (including decomposing animal waste) at a farm do not need to be reported under EPCRA.
Furthermore, the statute excludes farms that only use substances in "routine agricultural operations" from reporting releases of hazardous substances under EPCRA section 304. For more information, please see: EPCRA Q&A.

- While you don't have a link to the guidance doc, the website refers to it by citing the specific criteria under 304. It would be better if the website language were more simple:

  No. The EPA has interpreted the "routine agricultural operations" exemption under EPCRA section 304 to not require reporting from farms. For more information, please see: EPCRA Q&A.

- Also, the website's link to EPCRA 304 talks about accidental releases. That's not a word used in the statute, and certainly EPCRA reporting isn't limited to just accidental releases, but rather to any release that isn't federally permitted and that doesn't fall into one of the exemption categories in the statute.

- Finally, you need to update the links to the CFR on the EPCRA 304 page, since what is linked to is now out of date, having been modified by the CFR changes made to reflect the recent vacature order by the DC Circuit of the 2008 rule.

Hope that's clear,
MF

-----Original Message-----
From: Freedhoff, Michal (EPW)
Sent: Wednesday, October 3, 2018 8:03 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re:

Thanks!

Sent from my iPhone

> On Oct 3, 2018, at 6:40 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> We'll have the changes to the FARM Act website posted within the next 30 minutes.
>
>
>
>
>

>
>
> Ryan Jackson
> Chief of Staff
> U.S. EPA
> 202-564-6999
>

Dear Senator Carper,

I appreciate your interest in the U.S. Environmental Protection Agency (EPA) proposed rule, "Strengthening Transparency in Regulatory Science," process for selecting candidates to serve on EPA's Science Advisory Board, and the opportunity to respond to some of your concerns.

The intent of the proposed rule is to establish procedures for strengthening the transparency and reproducibility of scientific information underlying significant EPA actions. Specifically, the proposal seeks to ensure that the data and models underlying EPA regulatory science are "publicly available in a manner sufficient for validation and analysis."[1] The proposal was designed to enhance existing policies on scientific transparency and public access to data in a way that builds public trust and understanding of EPA's regulatory decision making. As I am sure you will agree, under the principles of community right to know, it is important for the EPA to make public the scientific information we use in our rulemaking process.

Since the rule was proposed in April 2018, EPA has received a variety of public feedback that require careful consideration. EPA held a public hearing on July 17, 2018 in Washington, D.C. that hosted nearly 100 speakers, including members of Congress. During the 108-day public comment period, EPA also received over 597,000 written comments, of which over 9,200 are individual, unique comments.[2] EPA, with contractor assistance, is currently in the process of reviewing the unique comments and preparing a summary of those comments to inform the agency's internal regulatory development workgroup's next steps which will include review of the proposal by EPA's Science Advisory Board.

While EPA has received a host of questions on the proposal that are still under thoughtful consideration, I want to address some of the more prevalent questions related to the applicability of the rule and protections for personal information. In the first instance, any reading of the proposed rule should not be understood to apply to scientific studies that pre-date the proposal. Although EPA has received many public comments, consistent with the proposal, we believe it is the best policy to not apply the rule retroactively to studies and science which pre-date the rule. In regard to questions about protection of personal information, nothing in the text of the proposal would compel disclosure of confidential or private information. In fact, the proposed rule reinforces existing legal and ethical protections of such information. The proposal states, "[w]here the Agency is making data or models publicly available, it shall do so in a fashion that is consistent with law, protects privacy, confidentiality, confidential business information, and is sensitive to national and homeland security."[3] I commit to a policy that ensures that in instances in which EPA has determined that disclosing a study's underlying data may implicitly or explicitly identify such information, it will not publicly disclose the data, but will nevertheless fully consider the study during the rule development process.

Given the scope and volume of public comments, the Agency's review process cannot be rushed, and EPA has a significant amount of work ahead to fully consider and develop any final action. As with all

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[1] 83 Fed. Reg. 18871, April 30, 2018.

[2] [HYPERLINK "https://www.regulations.gov/document?D=EPA-HQ-OA-2018-0259-0001"]

[3] 83 Fed. Reg. 18873, April 30, 2018

rulemakings issued by EPA, any final action must be based on our statutory authority and a robust, sound record. Where EPA determines further analyses, information or legal authority is needed to support a particular final action, the Agency will issue a supplemental notice seeking further public comment. Based on our preliminary analysis of the comments reviewed, I expect that EPA will need to issue one or more supplemental notices and solicitations of comment. This future process will likely include a specific legal analysis of the statutory provisions that provide EPA with the authority to take action in this area as well as an analysis of relevant case law that EPA relied upon to support the rule. The supplemental notice will also address comments filed in response to the original proposal that question whether the proposal is consistent with all provisions of all statutes that EPA administers.

I commit that as the EPA moves forward with its consideration of this proposal, the Agency will ensure that it has complied with all applicable laws, including the Administrative Procedure Act and all of EPA's organic statutes, as well as executive orders, that govern the rule-making process. Further, I commit that the Agency's implementation and use of this rule will comply with the Administrative Procedure Act and Clean Air Act[4], which require agencies to consider[5] and respond[6] to all significant information presented to them pursuant to a rulemaking, as well as statutes that mandate the use of the best available science, such as the Toxic Substances Control Act[7] and Safe Drinking Water Act[8].

Finally, EPA has recruited and received nominations for candidates to serve on its Federal Advisory Committee Act panels and EPA's Science Advisory Board. During this Administration, EPA has placed notices in the Federal Register and on its website for nominations and has received hundreds of applications. EPA will continue follow its past practice of obtaining information and recommendations from EPA's career staff to ensure that new appointees to EPA's scientific advisory committees are independent, well-qualified, free of conflicts of interest, come from diverse technical and professional backgrounds and possess expertise in areas that the agency anticipates to be relevant in planned or anticipated reviews. All candidates will be posted for a public comment period prior to their selection on EPA's panels.

I appreciate your interest in this proposed rule and service on EPA's FACA and science panels, and commit to working with your office to provide as much information and briefings as we can provide, and to keep your office fully updated concerning both.

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[4] 42 U.S.C. §4607(d)(3) and (6)
[5] 5 U.S.C. §553
[6] *Home Box Office, Inc. v. F.C.C.*, 567 F.2d 9, 35–36 (D.C. Cir. 1977)
[7] 15 U.S.C. 2625(h)
[8] 42 U.S.C. § 300g-1(b)(3)(A)

Message

From: Jackson, Ryan [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=38BC8E18791A47D88A279DB2FEC8BD60-JACKSON, RY]
Sent: 11/21/2018 12:25:25 AM
To: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]; Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]
CC: Lyons, Troy [lyons.troy@epa.gov]
Subject: RE: Peter Wright
Attachments: image2018-11-19-072132.pdf; Secret Science letter.docx

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Sent: Friday, November 16, 2018 11:28 AM
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Cc: Lyons, Troy <lyons.troy@epa.gov>; Freedhoff, Michal (EPW) <Michal_Freedhoff@epw.senate.gov>
Subject: RE: Peter Wright

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Thanks very much

Michal

Michal Ilana Freedhoff, Ph.D.

Director of Oversight
Committee on Environment and Public Works Democratic Staff

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Furthermore, the statute excludes farms that only use substances in "routine agricultural operations" from reporting releases of hazardous substances under EPCRA section 304. For more information, please see: EPCRA Q&A.

- While you don't have a link to the guidance doc, the website refers to it by citing the specific criteria under 304. It would be better if the website language were more simple:

  No. The EPA has interpreted the "routine agricultural operations" exemption under EPCRA section 304 to not require reporting from farms. For more information, please see: EPCRA Q&A.

- Also, the website's link to EPCRA 304 talks about accidental releases. That's not a word used in the statute, and certainly EPCRA reporting isn't limited to just accidental releases, but rather to any release that isn't federally permitted and that doesn't fall into one of the exemption categories in the statute.

- Finally, you need to update the links to the CFR on the EPCRA 304 page, since what is linked to is now out of date, having been modified by the CFR changes made to reflect the recent vacature order by the DC Circuit of the 2008 rule.

Hope that's clear,
MF

-----Original Message-----
From: Freedhoff, Michal (EPW)
Sent: Wednesday, October 3, 2018 8:03 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re:

Thanks!

Sent from my iPhone

> On Oct 3, 2018, at 6:40 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> We'll have the changes to the FARM Act website posted within the next 30 minutes.
>
>
>
>
>
>
>
> Ryan Jackson
> Chief of Staff

> U.S. EPA
> 202-564-6999
>

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C. 20460

JAN 2 2013

OFFICE OF THE ADMINISTRATOR

MEMORANDUM

SUBJECT: Identifying EPA Planned Actions for Science Advisory Board (SAB) Consideration of the Underlying Science – Semi-annual Process

FROM: Michael Goo, Associate Administrator
Office of Policy

Glenn Paulson
Science Advisor

Vanessa Vu, Director
SAB Staff Office

TO: General Counsel
Assistant Administrators
Associate Administrators
Regional Administrators

The purpose of this memorandum is to provide guidance for implementing improved coordination with the SAB, the goal of the memorandum dated January 19, 2012 on that topic (Attachment A).

We ask that you work with the Office of Policy to provide the SAB Staff Office with information about the science supporting major planned agency actions (Tier 1 and Tier 2 actions) that are in the pre-proposal stage. The *2012 Unified (Regulatory) Agenda and Regulatory Plan* was published on December 21, 2012 on the Office of Management and Budget web site http://www.reginfo.gov/public/.

Please provide the SAB Staff Office (contact: Angela Nugent) by **January 30, 2013**, a brief description of each action along with its supporting science, following the format provided in Attachment B. Please ensure that these submissions to the SAB are consistent with information developed in the action development process.

This process supplements the Deputy Administrator's annual memorandum requesting program and regional offices to identify scientific issues that might be appropriate for SAB consideration.

We look forward to working with you on this new process to strengthen science supporting EPA's decisions. Please contact us or Caryn Muellerleile (202-564-2855) in the Office of Policy or Angela Nugent (202-564-2218) in the SAB Staff Office, should there be questions.

Attachments

cc: Administrator
Deputy Administrator
Chief of Staff
Deputy Chief of Staff

Attachment A: January 19, 2012 Memorandum from Michal L. Goo

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 19 2012

OFFICE OF POLICY

MEMORANDUM

SUBJECT: Coordination with the Science Advisory Board Regarding Proposed Criteria Documents, Standards, Limitations and Regulations

FROM: Michael L. Goo, Associate Administrator
Office of Policy

TO: Assistant Administrators
General Counsel
Chief of Staff
Associate Administrators
Regional Administrators

This is to confirm the procedures that we have discussed regarding coordination with the Science Advisory Board (SAB) on the science and technical information underlying the EPA's proposed criteria documents, standards, limitations and regulations.

In addition to the current process by which program offices identify actions on which they plan to seek advice from the SAB on scientific and technical issues, OP will semiannually inform the SAB, through the SAB Staff Office, of upcoming proposed actions. This process will focus on those proposed regulations, criteria documents, standards or limitations that undergo interagency review and will operate as follows:

1. OP will submit to the SAB staff office a list, based on the Agency's *Semiannual Regulatory Agenda* (*Regulatory Agenda*), augmented as necessary, of upcoming proposed regulations, criteria documents, standards or limitations that are expected to undergo interagency review. OP will work with program and regional offices to ensure that any actions not listed in the *Regulatory Agenda* that nevertheless are expected to be submitted for interagency review are included in this submission. For any of these additional actions, offices should provide a description similar to that provided for actions included in the *Regulatory Agenda*.

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2. Program and Regional offices will notify the SAB staff office when proposed Agency actions that undergo interagency review become formally available for public review and comment. EPA programs are also expected to provide additional information as requested by the SAB Staff Office to facilitate the SAB's consideration of this information.

If the SAB decides to review and, as appropriate, comment on the scientific and technical basis for a proposed action, OP will work with the SAB Staff Office and the relevant program or regional office to establish the appropriate time frame for SAB review and comment.

Thank you for your assistance in adhering to this process. If you have any questions or concerns, please contact me, or your staff can contact Nicole Owens owens.nicole@epa.gov, at 202 (564-1550).

cc: Bob Perciasepe
Bob Sussman
Deputy Assistant Administrators
Deputy Associate Administrators
Deputy Regional Administrators
Assistant Regional Administrators
Alex Cristofaro
Nicole Owens
Vanessa Wu
Thomas Brennan

Dear Senator Carper,

I appreciate your interest in the U.S. Environmental Protection Agency (EPA) proposed rule, "Strengthening Transparency in Regulatory Science," and the opportunity to respond to some of your concerns.

The intent of the proposed rule is to establish procedures for strengthening the transparency and reproducibility of scientific information underlying significant EPA actions. Specifically, the proposal seeks to ensure that the data and models underlying EPA regulatory science are "publicly available in a manner sufficient for validation and analysis."[1] The proposal was designed to enhance existing policies on scientific transparency and public access to data in a way that builds public trust and understanding of EPA's regulatory decision making. As I am sure you will agree, under the principles of community right to know, it is important for the EPA to make public the scientific information we use in our rulemaking process.

Since the rule was proposed in April 2018, EPA has received a variety of public feedback that require careful consideration. EPA held a public hearing on July 17, 2018 in Washington, D.C. that hosted nearly 100 speakers, including members of Congress. During the 108-day public comment period, EPA also received over 597,000 written comments, of which over 9,200 are individual, unique comments.[2] EPA, with contractor assistance, is currently in the process of reviewing the unique comments and preparing a summary of those comments to inform the agency's internal regulatory development workgroup's next steps which will include review of the proposal by EPA's Science Advisory Board.

While EPA has received a host of questions on the proposal that are still under thoughtful consideration, I want to address some of the more prevalent questions related to the applicability of the rule and protections for personal information. In the first instance, any reading of the proposed rule should not be understood to apply to scientific studies that pre-date the proposal. Although EPA has received many public comments, consistent with the proposal, we believe it is the best policy to not apply the rule retroactively to studies and science which pre-date the rule. In regard to questions about protection of personal information, nothing in the text of the proposal would compel disclosure of confidential or private information. In fact, the proposed rule reinforces existing legal and ethical protections of such information. The proposal states, "[w]here the Agency is making data or models publicly available, it shall do so in a fashion that is consistent with law, protects privacy, confidentiality, confidential business information, and is sensitive to national and homeland security."[3] I commit to ensure that in instances in which EPA has determined that disclosing a study's underlying data may implicitly or explicitly identify such information, it will not publicly disclose the data, but will nevertheless fully consider the study during the rule development process.

Given the scope and volume of public comments, the Agency's review process cannot be rushed, and EPA has a significant amount of work ahead to fully consider and develop any final action. As with all

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[1] 83 Fed. Reg. 18871, April 30, 2018.

[2] [HYPERLINK "https://www.regulations.gov/document?D=EPA-HQ-OA-2018-0259-0001"]

[3] 83 Fed. Reg. 18873, April 30, 2018

rulemakings issued by EPA, any final action must be based on our statutory authority and a robust, sound record. Where EPA determines further analyses, information or legal authority is needed to support a particular final action, the Agency will issue a supplemental notice seeking further public comment. Based on our preliminary analysis of the comments reviewed, I expect that EPA will need to issue one or more supplemental notices and solicitations of comment. This future process will likely include a specific legal analysis of the statutory provisions that provide EPA with the authority to take action in this area as well as an analysis of relevant case law that EPA relied upon to support the rule. The supplemental notice will also address comments filed in response to the original proposal that question whether the proposal is consistent with all provisions of all statutes that EPA administers.

I commit that as the EPA moves forward with its consideration of this proposal, the Agency will ensure that it has complied with all applicable laws, including the Administrative Procedure Act and all of EPA's organic statutes, as well as executive orders, that govern the rule-making process. Further, I commit that the Agency's implementation and use of this rule will comply with the Administrative Procedure Act and Clean Air Act[4], which require agencies to consider[5] and respond[6] to all significant information presented to them pursuant to a rulemaking, as well as statutes that mandate the use of the best available science, such as the Toxic Substances Control Act[7] and Safe Drinking Water Act[8].

I appreciate your interest in this proposed rule, and commit to working with your office to provide as much information and briefings as we can provide, and to keep your office fully updated concerning this rulemaking.

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[4] 42 U.S.C. §4607(d)(3) and (6)
[5] 5 U.S.C. §553
[6] *Home Box Office, Inc. v. F.C.C.*, 567 F.2d 9, 35–36 (D.C. Cir. 1977)
[7] 15 U.S.C. 2625(h)
[8] 42 U.S.C. § 300g-1(b)(3)(A)

Message

From: Jackson, Ryan [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=38BC8E18791A47D88A279DB2FEC8BD60-JACKSON, RY]
Sent: 11/19/2018 3:15:52 AM
To: Freedhoff, Michal (EPW) [Michal_Freedhoff@epw.senate.gov]; Repko, Mary Frances (EPW) [mary_frances_repko@epw.senate.gov]
CC: Lyons, Troy [lyons.troy@epa.gov]
Subject: RE: Peter Wright
Attachments: Don't Waste Arizona v. Hickman_Findings of Fact and Conclusions of Law_11.02.18.pdf

I can understand initial holds because we are EPA. However, the general perspective is that we plan to answer Republican and Democratic letters. We have, and we will and more. If there's something a member would like, it may take time but we will try to comply. In other words, we want to cooperate with them, but I need to have program directors here to do that.

There's a lot of people who work for Ford. Saying that Chad is responsible for all things Ford is the same as the NYT trying to say that Peter is responsible for all things Dow which also was successfully shot down in that article by Region 5 attorneys and staff who worked with Peter while at Dow. Chad was the director of global environmental policy for Ford when this situation was uncovered meaning he was working on Ford issues in Europe and South America. He never worked on this issue. If he had though, it would have been a good thing for Ford and the community because he would have solved it.

On the letter, we can accept most the suggestions.

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No. Based on the criteria for EPCRA section 304 release reporting, air emissions from animal waste (including decomposing animal waste) at a farm do not need to be reported under EPCRA.
Furthermore, the statute excludes farms that only use substances in "routine agricultural operations" from reporting releases of hazardous substances under EPCRA section 304. For more information, please see: EPCRA Q&A.

- While you don't have a link to the guidance doc, the website refers to it by citing the specific criteria under 304. It would be better if the website language were more simple:

  No. The EPA has interpreted the "routine agricultural operations" exemption under EPCRA section 304 to not require reporting from farms. For more information, please see: EPCRA Q&A.

- Also, the website's link to EPCRA 304 talks about accidental releases. That's not a word used in the statute, and certainly EPCRA reporting isn't limited to just accidental releases, but rather to any release that isn't federally permitted and that doesn't fall into one of the exemption categories in the statute.

- Finally, you need to update the links to the CFR on the EPCRA 304 page, since what is linked to is now out of date, having been modified by the CFR changes made to reflect the recent vacature order by the DC Circuit of the 2008 rule.

Hope that's clear,
MF

-----Original Message-----
From: Freedhoff, Michal (EPW)
Sent: Wednesday, October 3, 2018 8:03 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Repko, Mary Frances (EPW) <mary_frances_repko@epw.senate.gov>; Lyons, Troy <lyons.troy@epa.gov>
Subject: Re:

Thanks!

Sent from my iPhone

> On Oct 3, 2018, at 6:40 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

>
> We'll have the changes to the FARM Act website posted within the next 30 minutes.
>
>
>
>
>
>
>
> Ryan Jackson
> Chief of Staff
> U.S. EPA
> 202-564-6999
>

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF ARIZONA

Don't Waste Arizona Incorporated, Plaintiff, v. Hickman's Egg Ranch Incorporated, Defendant.	No. CV-16-03319-PHX-GMS **FINDINGS OF FACT AND CONCLUSIONS OF LAW**

According to the stipulation of the parties, the Court held a trial without a jury regarding the Plaintiff's Complaint on October 17, 2018. The Court hereby makes its findings of fact and conclusions of law pursuant to Federal Rule of Civil Procedure 52.

FINDINGS OF FACT

1. Defendant Hickman's Egg Ranch, Inc. ("Hickman's") owns and operates Desert Pride Farms, which is located at 41625 West Indian School Road in Tonopah, Arizona ("Tonopah Facility").

2. Hickman's also owns and operates a facility that is located at 32902 West Ward Road and 32425 West Salmone Highway in Arlington, Arizona ("Arlington Facility").

3. Plaintiff Don't Waste Arizona ("DWA") is a non-profit organization dedicated to protecting the Arizona environment. Certain members of DWA live in the vicinity of the two facilities owned by Hickman's.

4. A natural byproduct of the decomposition of chicken waste is ammonia,

which is included among the chemical compounds that are listed as extremely hazardous substances under the Emergency Planning and Community Right to Know Act ("EPCRA") 42 U.S.C. §§ 11001–11050; *see also* 40 C.F.R. § 302.4.

5. The purpose of EPCRA is "to encourage and support emergency planning efforts at the State and local levels and to provide the public and local governments with information concerning potential chemical hazards present in their communities." 52 ed. Reg. at 13378 (Apr. 22, 1987).

6. Although the figures vary from month to month, documents produced by Hickman's show that the Arlington Facility housed as many as 4,127,267 laying hens in May 2013 while the Tonopah Facility housed as many as 3,344,877 laying hens in January 2017.

7. Both the Tonopah and Arlington Facilities emitted into the air over 100 pounds per day of ammonia from animal waste during the timeframes relevant to this proceeding.[1]

8. Individuals from both Arlington and Tonopah testified that they could smell ammonia regularly at their residences following the construction of both the Arlington and Tonopah Facilities.

9. Where releases of hazardous substances are continuous, the EPCRA reporting requirement is satisfied if an initial notice is provided to the National Response Center ("NRC"), the State Emergency Response Commission ("SERC"), and the Local Emergency Planning Committee ("LERC") in the state in which the release occurs. 40 C.F.R. § 302.9. Prior to the passage of the FARM Act, EPA determined that release of hazardous substances from animal waste typically qualify for continuous release reporting. *See* Final Rule, (Dec. 18, 2008), 73 Fed. Reg. 76,948 at 76,952.

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[1] Hickman's witness Dr. Burns estimates that 1,896 pounds per day of ammonia is produced from the Arlington facility, and 1,599 pounds per day is produced at the Tonopah facility. (Doc. 61, Ex. 4 at 3).

10. In 2006, Hickman's submitted a letter to the Environmental Protection Agency ("EPA") Office of Regulatory Enforcement. There, Hickman's acknowledged the Arlington Facility "may generate routine air emissions of ammonia in excess of the reportable quantity of 100 pounds per 24 hours," and that "a rough estimate of those emissions is approximately 125 pounds per 24 hours, but this estimate could be substantially above or below the actual emission rate." (Defendant's Trial Ex. 101). At the time, EPA was developing an emission rate factor to estimate the amount of ammonia generated by large agricultural operations. The letter further explained that because an emission rate factor was under development, when EPA finalized that emission rate, Hickman's would "notify [EPA] of any reportable release pursuant to CERCLA section 103 or EPCRA section 304." (*Id.*). EPA did not ultimately produce an emission rate factor for ammonia from chicken waste.

11. On May 2, 2016, Plaintiff served written notice on Hickman's of its intent to file a citizen's action under provisions of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§ 9601–9675 and EPCRA, based on Hickman's alleged failure to submit notification under these statutes that reportable quantities of hydrogen sulfide and ammonia had been released at the Arlington and Tonopah Facilities.

12. Nearly five months later, Plaintiff filed its Complaint. (Doc. 4). The Complaint alleged that Hickman's violated EPCRA because it failed to file the necessary reports regarding the release of ammonia at the Arlington Facility and the Tonopah Facility. Hickman's filed an answer denying liability on October 21, 2016. (Doc. 11).

13. There are additional agricultural operations within two to five miles of the Arlington and Tonopah facilities, including multiple dairy farms that produce cow waste. (Defendant's Trial Ex. 106). Ammonia is also a natural byproduct of cow waste.

14. Once the chicken waste is dried at its facilities, Hickman's processes the chicken waste and sells it as a fertilizer to facilities in neighboring areas.

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15. Hickman's regularly tested for ammonia and hydrogen sulfide emissions on the premises of both facilities.

16. In March 2017, Hickman's filed compliance reports with the NRC, SERC and LERC. (Doc. 107 at 6). Hickman's also filed an update to these reports in March 2018. (*Id.*).

17. After the construction of the Arlington and Tonopah facilities, individuals living near the facilities filed complaints with the Arizona Department of Environmental Quality ("ADEQ") and other environmental agencies. ADEQ has never found that Hickman's was in violation of state or federal environmental laws.

18. Earlier this year, Congress enacted the Consolidated Appropriations Act of 2018. The act incorporated at Division S, Title XI the Fair Agricultural Reporting Method Act ("FARM Act"), which amended Section 103 of CERLA to eliminate any reporting requirement for air emissions from animal waste or the decomposition of animal waste. EPCRA's reporting requirements under section 304 extend to releases that "require[] a notification under section 103(a) of [CERCLA]." 42 § U.S.C. 11004.

19. EPA recently issued a Guidance Document detailing when EPCRA applies to farms engaged in "routine agricultural operations." EPA Office of Land and Emergency Management, *How Do the Reporting Requirements in EPCRA Section 304 Apply to Farms Engaged in "Routine Agricultural Operations"?* (Apr. 27, 2018), https://www.epa.gov/sites/production/files/2017-10/documents/web_document_placeholder.pdf ("EPA Guidance 2018").

20. On September 25, 2018 this Court issued an order clarifying various legal issues before the trial without a jury. (Doc. 130) ("Clarifying Order"). Among other issues, the Clarifying Order found that the FARM Act was not retroactively applicable, that Plaintiff has the burden to prove that the release resulted in exposure to persons outside the facility, and that Defendant has the burden to prove that the release falls within the exemption at 42 U.S.C. § 11021(e)(5). (Clarifying Order at 10–11).

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CONCLUSIONS OF LAW

Defendant has conceded that Plaintiff has standing to prosecute this action under EPCRA. So the Court will only analyze the merits issues. Due to the passage of the FARM Act, however, this Order only considers whether Hickman's violated EPCRA by not making a required continuous release report concerning ammonia release prior to March 28, 2017.

1. Prior to the passage of the Farm Act, ammonia generated as a byproduct of chicken waste was an "extremely hazardous material" released into the environment that triggered reporting requirements under EPCRA.

EPCRA directs the EPA Administrator to list hazardous substances along with the amount of substance that must be released in order to trigger EPCRA reporting requirements. *See* 42 U.S.C. § 11002(a)(2) (directing the Administrator to publish a list of extremely hazardous substances within 30 days). The list of extremely hazardous substances can be found at 40 C.F.R. § 302.4. Under EPCRA section 11004(a), merely possessing a hazardous substance is not enough to trigger reporting requirements. Specifically, EPCRA requires a notification only "if a release of an extremely hazardous substance . . . occurs from a facility." 42 U.S.C. § 11004(a)(1)–(2).

Ammonia is an extremely hazardous substance listed under 40 C.F.R. § 302.4. Chicken waste is not listed under 40 C.F.R. § 302.4, nor is it "released" into the environment.

2. The release of ammonia at both the Arlington and Tonopah Facilities does not fall within the statutory exemption at 42 U.S.C. § 11004(a)(4).

Under EPCRA, a release is not reportable if it "results in exposure to persons solely within the site or sites on which a facility is located." 42 U.S.C. § 11004(a)(4). As discussed in the Clarifying Order, the burden to establish that the ammonia releases resulted in exposures to persons outside the facility falls on DWA, who must establish that persons were exposed to the ammonia by the preponderance of the evidence. Unlike the release provision, which requires 100 pounds of ammonia to be released to trigger the

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reporting requirement *see* 40 C.F.R. § 302.4, the implementing regulations do not require a specific amount of exposure to persons to avoid liability under 11004(a)(4). Thus, *some* level of exposure to ammonia outside the site is sufficient to trigger the reporting requirement.

The parties do not dispute that Hickman's released more than 100 pounds of ammonia into the ambient air daily during the relevant time period for this lawsuit. Indeed, Hickman's own expert found that the amount of ammonia generated at each facility likely exceeded 1500 pounds each day. Several individuals from both Arlington and Tonopah also testified that they could smell ammonia regularly at their residences following the construction of both the Arlington and Tonopah Facilities.

That Hickman's later measured zero ammonia parts per million at the facility borders once a month does not demonstrate that no persons were ever exposed to ammonia from the facilities during the relevant time frame. Plaintiff's dispute whether the device used by Hickman's to measure ammonia at the facility is even designed to make measurements of ammonia in the ambient air. (Plaintiff's Trial Ex. 33). Hickman's admits that it employs no machinery to capture, store, or otherwise prevent the gaseous ammonia from entering the ambient air. And while there are other agricultural operations in the vicinity of Hickman's, it is not plausible that releasing thousands of pounds of ammonia into the ambient air daily for a period of years did not regularly result in exposure to persons outside the facility. Accordingly, the release at issue here does not fall within the exemption in 42 U.S.C. § 11004(a)(4).

3. Ammonia released as a byproduct of chicken waste is not a hazardous material "used in a routine agricultural operation."

In April 2018, EPA issued a guidance document that describes the activities that fall within the routine agricultural operation exemption under 42 U.S.C. § 11021(e)(5). In that guidance document, EPA reasoned that "the feeding and breeding of animals, as well as the expected handling and storage of the animals' waste, would also be considered a routine agricultural operation," and interpreted 42 U.S.C. §11021(e)(5) to

include "handling and storage of waste for potential use as a fertilizer." *See* EPA Guidance 2018.

As discussed in this Court's Clarifying Order, "policy statements, agency manuals and enforcement guidelines . . . do not warrant *Chevron*-style deference." *Christensen v. Harris County*, 529 U.S. 576, 587 (2000). When executive guidance does not warrant *Chevron* deference, courts should still give some weight to agency interpretations depending on the thoroughness of its consideration, validity of its reasoning, consistency with earlier and later pronouncements, and its general power to persuade. *See Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944).

EPCRA generally requires reporting of all releases of hazardous materials that were "produced, used, or stored" at a facility. 42 U.S.C. § 11004(a)(1). In a separate subsection, EPCRA clarifies that the term "hazardous materials" does not cover "any substance to the extent it is *used in* routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer." 42 U.S.C. § 11021(e)(5) (emphasis added). The statutory provision by its terms does not exempt *all* activities at routine agricultural operations from reporting requirements under EPCRA. It specifically limits the exemption to hazardous materials "*used in* routine agricultural operations." 42 U.S.C. § 11021(e)(5) (emphasis added). Had Congress wanted to exempt all substances at routine agricultural operations from reporting requirements, it could have simply stated that routine agricultural operations are entirely exempt.

"[W]here Congress includes particular language in one section of a statute but omits it in another . . . , it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion." *Keene Corp. v. United States*, 508 U.S. 200, 208 (1993) (internal citation and quotation marks omitted); *see also Bailey v. United States*, 516 U.S. 137, 146 (1995) (distinction in one provision between "used" and "intended to be used" creates implication that related provision's reliance on "use" alone refers to actual and not intended use). Because Congress deployed the phrase "produced, used or stored" when defining what releases are reportable, but only deployed the word

"used" when defining this exemption, Congress likely did not intend to exclude releases from materials that are produced or stored at, but not ultimately used in routine agricultural operations, with the exception of a fertilizer held for sale to the ultimate consumer.

"Used" is defined as "employed in accomplishing something." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 2524 (1961). Hickman's does not employ the ammonia in accomplishing any ultimate goal or objective. The gaseous ammonia is instead a mere byproduct of the agricultural operation. Thus, the ammonia does not qualify as a material "used in" a routine agricultural operation.

4. Ammonia released as a byproduct of chicken waste is not "a fertilizer held for sale to the ultimate consumer."

The statutory language exempts hazardous materials from the EPCRA reporting requirements if that material "is a fertilizer held for sale to the ultimate consumer." 42 U.S.C. § 110021(e)(5). It is possible that the EPA Administrator could list common fertilizers under the EPCRA reporting requirements, and Congress was probably aware of that possibility when it was drafting 110021(e)(5). And those fertilizers, if held for sale by a facility, and subsequently released into the environment, would fit within the exemption. But the gaseous ammonia released by the chicken waste itself is not a fertilizer held by Hickman's.[2] Instead, the ammonia is a *byproduct* of a material—the chicken waste—that is eventually converted to a fertilizer. That Hickman's later processed the chicken waste and sold it as a fertilizer does not transform the gas released by the chicken waste at an earlier stage into a fertilizer. So even assuming this Court would find that the chicken waste was a fertilizer, a gaseous byproduct released by its decomposition would not qualify for the exemption under 42 U.S.C. § 110021(e)(5).

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[2] A fertilizer is defined as "a substance (as manure, lime or commercial fertilizer) used to fertilize soil; *esp* one chemically prepared that supplies nutrients." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 840 (1961).

5. The Court will impose a penalty below the maximum amount for an emissions reporting violation for each of the Hickman's Facilities.

The Court finds that Hickman's failed to comply with the written notice requirement under EPCRA for 592 days for the Tonopah Facility, and for 1,825 days for the Arlington Facility. Hickman's violations here essentially amount to two failures to report a continuous emissions release. *See* Final Rule, (Dec. 18, 2008), 73 Fed. Reg. 76,948 at 76,952. If considered a continuous emissions release, the maximum penalties under EPCRA for each release are $25,000 dollars.

EPA published an Enforcement Response Policy for its own enforcement actions that may also be used as a guideline here. *See* EPA Office of Regulatory Enforcement and Compliance Assurance, *Enforcement Response Policy For Sections 304, 311 and 312 of the Emergency Planning and Community Right-to-Know Act*, (Sept. 30, 1999), https://www.epa.gov/sites/production/files/documents/epcra304.pdf ("ERP"). While the Court is not required to apply the ERP guidelines, both parties agree that the Court should look to the ERP to help determine what penalty to impose on Hickman's.

The ERP lays out four factors to weigh in determining whether or not to impose the maximum daily penalty: the nature of the violation, the extent of the violation, the gravity of the violation, and the circumstances of the violation. ERP at 9-17. EPA also lists adjustment factors for penalties, including the ability to pay and continue in business, the prior history of violations, the degree of culpability, the economic benefit of non-compliance, and other matters as justice may require. ERP at 22-28. Penalties imposed by EPA under this rubric in the past for violations range from $7,735 to $278,000. (Doc. 107, Ex. A).

When determining the circumstances surrounding a violation, EPA looks at any actual problems that first responders and emergency managers encountered due to a failure to notify, the effect noncompliance has on the LEPC's ability to plan for chemical emergencies, and the potential for emergency personnel, the community and the environment to be exposed to hazards posed by noncompliance.

None of these factors point towards imposing a harsh penalty. There were no actual problems that emergency personnel encountered due to Hickman's lack of reporting, and Hickman's failure to report did not impact the LEPC's ability to plan for chemical emergencies. And while Hickman's failure to report the ammonia emissions likely deprived the community of some information regarding hazardous substances in their community, many members of the public were aware of the facilities and the ammonia they emit. The noncompliance *itself* did not greatly increase the likelihood of the public to be exposed to hazardous materials.[3] After all, these releases are not illegal under any other statute.

Other adjustment factors point in favor of a modest fine. Hickman's does not have a history of prior violations under EPCRA or other environmental statutes. There is no evidence that Hickman's gained any meaningful economic advantage over other agricultural operations by not reporting the ammonia emissions under EPCRA. ERP at 28. And a severe penalty issued here could threaten Hickman's ability to stay in business.

The ERP also allows for consideration of "other matters as justice may require." ERP at 31. The law surrounding reporting requirements for animal waste under EPCRA has been in flux since EPCRA was passed in 1986. *See* 1987 Final Rule; 2008 Final Rule, 73 Fed. Reg. 76,948 (Dec. 18, 2008), *vacated by Waterkeeper Alliance v. EPA*, 853 F.3d 527 (D.C. Cir. 2017); EPA Guidance 2018.[4] To date, EPA has still failed to develop

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[3] In the 2008 Final Rule on this subject, EPA stated that reports regarding emissions from animal waste "are unnecessary because, in most cases, a federal response is impractical and unlikely." 73 Fed. Reg. at 76,956.

[4] Congress recently exempted these types of releases from reporting under CERCLA when it passed the FARM Act. EPA recently proposed new regulations exempting animal waste emissions from reporting requirements under EPCRA—a necessary consequence of the amendments to CERCLA. *See* EPA, Proposed Amendment to Emergency Release Notification Regulations on Reporting Exemption for Air Emissions from Animal Waste at Farms; Emergency Planning and Community Right-to-Know Act, (Oct. 30, 2018), https://www.epa.gov/sites/production/files/2018-10/documents/proposed_epcra_amendment_signed_10-30-18.pdf. The proposed regulation incorporates the FARM Act's exemption of animal waste to EPA's existing regulations under EPCRA.

an emission rate factor for estimating the amount of ammonia emissions from chicken waste at agricultural operations like Hickman's. Unlike many other instances where EPA has implemented harsh penalties on large agricultural operations, Hickman's has not been found to violate any other environmental statutes in this proceeding, such as the Clean Water Act or CERCLA. (Doc. 107, Ex. A). And Hickman's has recently come into compliance with EPCRA and filed a continuous emissions release report for both the Arlington and Tonopah Facilities. After the passage of the FARM Act, no agricultural operation will be penalized for failing to report emissions generated from animal waste, because they are no longer subject to the reporting requirements of EPCRA.

At trial, Plaintiff's counsel pointed to three pieces of evidence to suggest that a large fine should be imposed on Hickman's. First, Plaintiff argued that the letter submitted to EPA in 2006 should be considered evidence that Hickman's was aware that the Arlington Facility needed to submit reports under EPCRA. Second, Plaintiff pointed to the numerous complaints filed by individuals living in the Arlington and Tonopah areas. Finally, Plaintiff points to the fact that Hickman's failed to take any action to come into compliance with EPCRA after it received Plaintiff's 60-day notice letter.

The first two pieces of evidence seem to cut against assessing a harsh penalty against Hickman's. The letter indicates that the regulating agency was aware of Hickman's emissions at the Arlington facility and chose not to request further action. And the fact that ADEQ, after receiving all of these complaints, did not require Hickman's to take further action, supports the conclusion that Hickman's was not acting in bad faith here. Hickman's regularly coordinates with state regulators, and there is no evidence that Hickman's is in violation of *any* other state or federal environmental laws. But Hickman's did fail to take any action after Plaintiffs filed their 60-day Notice, and even after the Complaint in this case was filed.

Because Hickman's failed to comply with EPCRA, the Court will assess a fine of 1,500 dollars for each facility, totaling 3,000 dollars. This amount is below other EPA enforcement actions where there were violations of other environmental laws, and will

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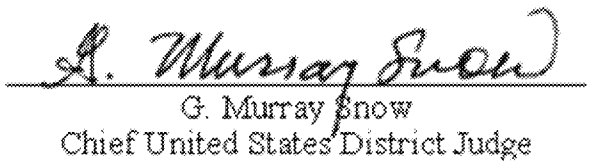
not be so harsh as to put Hickman's out of business.

Any conclusion of law deemed a finding of fact is so adopted.

CONCLUSION

For the reasons stated above, the Court enters judgment in Plaintiff's favor in the amount of three thousand dollars ($3,000.00). Plaintiff is directed to file a Notice and lodge a proposed final judgment on or before **November 16, 2018.**

Dated this 2nd day of November, 2018.



G. Murray Snow
Chief United States District Judge

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Message

From: Ex. 6
Sent: 4/24/2018 6:30:11 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]; Munoz, Charles [munoz.charles@epa.gov]
Subject: Start date

Ryan/Charles,
If Friday ends up not working as start date when do you think we will be able to nail down when the start date will be? I tentatively had 2 events next Thursday and Friday. Thursday was going to be 30 major players invited to meet and greet in Sacramento hosted by CA Business Roundtable. Friday was going to be at luncheon in Modesto with a hundred plus of major CA farmers hosted by Congressman Denham. I was planning on driving up to SF to be in the Regional Office Tuesday and Wednesday and then heading over to Sacramento Thursday. So any input on when we will be able to nail things down would be helpful.
Thanks,
Mike
Ex. 6

Sent from my iPhone

Message

From: Ex. 6
Sent: 4/11/2018 6:13:04 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Re: Remember my counsel will be working out of LA office with me.

And I plan on being up there 3-4 times a month with a regular scheduled senior staff meeting the first week of every month.
Mike

Sent from my iPhone

> On Apr 11, 2018, at 10:56 AM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:
>
> Mike, I thought he was working out of San Francisco. I need someone in San Francisco to run herd.
>
> -----Original Message-----
> From: Ex. 6
> Sent: Wednesday, April 11, 2018 1:32 PM
> To: Jackson, Ryan <jackson.ryan@epa.gov>
> Subject: Remember my counsel will be working out of LA office with me.
>
>
>
> Sent from my iPhone

Message

From: Kennett, Dave [Dave.Kennett@mail.house.gov]
Sent: 3/14/2018 6:28:25 PM
To: Jackson, Ryan [jackson.ryan@epa.gov]
Subject: Stoker PETT.pdf
Attachments: Stoker PETT.pdf

Congress of the United States

Washington, DC 20515

December 7, 2016

President-Elect Donald Trump
Trump Tower
New York, NY 10022

Dear President-Elect Trump.

As you continue to select individuals to serve within your Administration, we recommend the appointment of Mr. Michael Stoker for a position on the National Labor Relations Board. A delegate for you in Cleveland, Mr. Stoker is an attorney whose practice emphasizes labor, land use, government, and agricultural law. He currently serves as Director of Government Relations for UnitedAg.

Mr. Stoker's long background in public service includes serving on the Santa Barbara County (CA) Board of Supervisors from 1986-1994. In 1995, he was appointed by California Governor Pete Wilson to be the Chairman of the California Agricultural Labor Relations Board where he served until 2000. In 2000, then California Secretary of State Bill Jones named Mr. Stoker Deputy Secretary of State where he served until January 2003.

He has also served as Chairman of the Santa Barbara Air Pollution Control District, Chairman of the Santa Barbara Association of Governments, Chairman of the Santa Barbara County Water Agency and Flood Control District board. Additionally, he was on the Southern California Hazardous Waste Management Board and serves or has served on the Board of Directors of the American Heart Association, The Boys Club of America, the Chamber of Commerce, the UCSB General Affiliates, the Marian Hospital Foundation Board, fundraising Co-Chair for Northern Santa Barbara County United Way, Good Samaritan Homeless Shelter, the American Red Cross (Santa Barbara County Chapter), Coastal Business Finance Corporation, Young America Foundation, Santa Barbara Industrial Association, the Santa Barbara Taxpayers Association, Santa Barbara Trust for Historic Preservation, Fighting Back Public Policy Task Force, Court Appointed Special Advocates (CASA), Santa Barbara YMCA and the Los Padres Council of the Boy Scouts of America

Thank you for considering Mr. Stoker for a position in your Administration. Please let us know if you have any questions or if you would like to further discuss his qualifications for the position.

Respectfully,

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Ed Royce