Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/22/2021 12:23:24 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Carbonell, Tomas [Carbonell.Tomas@epa.gov]
Subject: FOR YOUR REVIEW & SIGNATURE: SAN#8203 Signature: SSM Amendments CMS# OAR-21-000-1896 - FRL-10020-62-OAR
Attachments: Comms Plan_SSM_ministerial.docx; Fact Sheet_SSM_ministerial.docx; FRN SSM ministerial preamble Reg Text 2_12_2021Revision_Review.docx; Post It Note_SSM_ministerial.docx; SSM OGC Concurrence3Dec20.pdf; SSM TypesettingRqst p. 1.pdf; SSM TypesettingRqst p. 2.pdf; RE: FOR YOUR REVIEW: SAN#8203 Signature: SSM Amendments CMS# OAR-21-000-1896 - FRL-10020-62-OAR; SSM Ministerial Action Memo 022221.doc

Joe, the attached is ready for your review and signature on the action memo (SSM Ministerial Action Memo 022221). Tomas has reviewed and concurred (attached) and provided the summary below. There is no specific deadline associated with this action.

Summary

Ex. 5 Deliberative Process (DP)

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

From: Mcquilkin, Wendy <Mcquilkin.Wendy@epa.gov>
Sent: Tuesday, February 16, 2021 8:28 AM
To: Campbell, Ann <Campbell.Ann@epa.gov>
Cc: OAQPSREGPROCESSING <OAQPSREGPROCESSING@epa.gov>
Subject: SAN#8203 Signature: SSM Amendments CMS# OAR-21-000-1896 - FRL-10020-62-OAR

SAN#8203

Attached is the Amendment of 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1) to Reflect Court Vacatur of Exemption from Emission Standards During Periods of Startup, Shutdown, and Malfunction (SAN 8203) action that was previously signed on 1/5/21, but never published in the Federal Register. We are resubmitting this in the new administration.

OAR has provided us with the go-ahead to resubmit the package for signature and publication during the recent 1-on-1 with OAQPS. This is a Tier 3, OMB Non-Significant action and the CMS # is OAR-21-000-1896. OGC concurrence from the original package is also attached.

Alice Chang: Ex. 6 Personal Privacy (PP)

Wendy

Wendy Mcquilkin
USEPA - OAR/OAPPS
1200 Pennsylvania Ave, NW
Washington, DC 20460
Rm 5442S WJC North – MC 6103A
(202) 564-1348
Prejudice is a burden that confuses the past, threatens the future and renders the present inaccessible – Dr. Maya Angelou

Message

From: Shannon Heyck-Williams [HeyckWilliamsS@nwf.org]
Sent: 3/8/2021 5:10:19 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Jessica Arriens [ArriensJ@nwf.org]
Subject: Invite: EJ Mapping Tools for Climate Policy

Hi Joe,

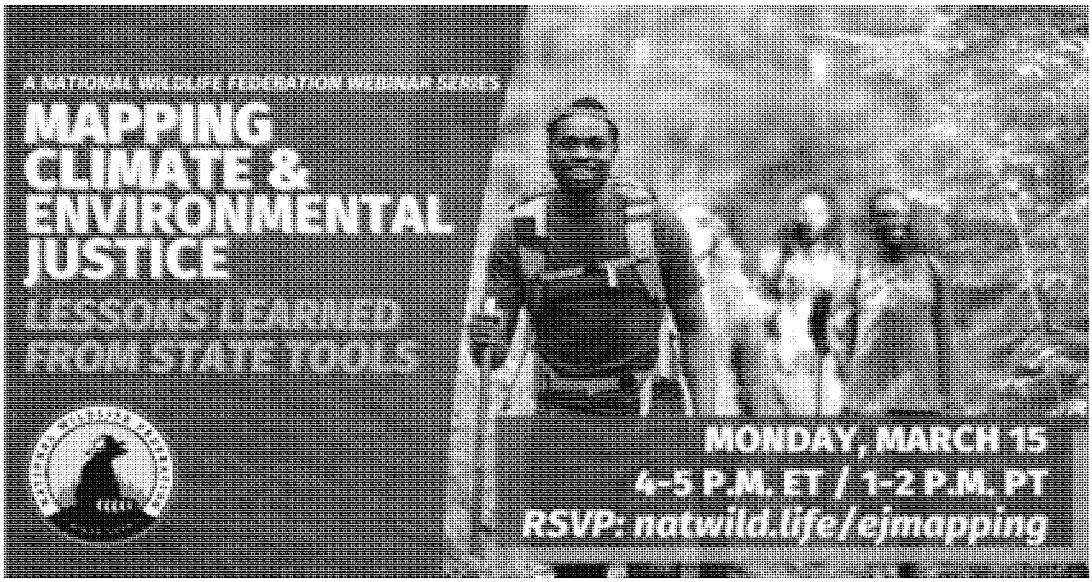
I hope you are well and settling into things there at EPA. It is wonderful to see you and so many other climate friends back at the helm.

NWF would like to share with you an invitation (below) for our upcoming webinar on state lessons from designing and using climate and environmental justice mapping tools to improve climate policy. This webinar, on **Monday March 15 from 4-5 p.m. ET**, will feature these expert speakers:

- Paul Mohai, University of Michigan
- John Faust, California Environmental Protection Agency
- Esther Min, University of Washington
- Sacoby Wilson, University of Maryland; Community Engagement, Environmental Justice & Health Lab

We hope and expect this will be a timely event, given the heightened interest in EPA's EJSCREEN and similar tools for guiding infrastructure investments. **RSVP here to attend:** https://natwild.life/ejmapping

Our second webinar in this series will take place on Monday, March 22 from 4-5 p.m. ET. Learn more and register here!



I hope you and your colleagues can attend. If you have any questions about the event or topic, please feel free to reach out to my colleague, Jessica Arriens, cc'd here. You may also be interested in our recent white paper on this issue, co-authored with Dr. Sacoby Wilson.

Thanks and be well!
Shannon

Shannon Heyck-Williams (she/her/hers)
Director, Climate & Energy Policy
National Wildlife Federation
202-797-6632 desk / 703-615-4794 cell
www.nwf.org
Uniting all Americans to ensure wildlife thrive in a rapidly changing world

Message

From: Carbonell, Tomas [Carbonell.Tomas@epa.gov]
Sent: 3/5/2021 10:48:30 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; DeLuca, Isabel [DeLuca.Isabel@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]
CC: Campbell, Ann [Campbell.Ann@epa.gov]; Millett, John [Millett.John@epa.gov]
Subject: RE: 3 press inquiries

Thanks all –

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Friday, March 5, 2021 5:29 PM
To: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Kim, Eun <Kim.Eun@epa.gov>
Cc: Campbell, Ann <Campbell.Ann@epa.gov>; Millett, John <Millett.John@epa.gov>
Subject: RE: 3 press inquiries

Ex. 5 Deliberative Process (DP)

Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency

From: DeLuca, Isabel <DeLuca.Isabel@epa.gov>
Sent: Friday, March 5, 2021 5:10 PM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Kim, Eun <Kim.Eun@epa.gov>
Cc: Campbell, Ann <Campbell.Ann@epa.gov>; Millett, John <Millett.John@epa.gov>
Subject: 3 press inquiries

Hi all,

Ex. 5 Deliberative Process (DP)

Many thanks,
Isabel

EtO Port Neches inquiry from the Intercept (and draft response) DDL COB (we will ask for an extension to Monday):
I did look at the air modeling and saw that cancer risk from the plant is elevated in many areas near the Port Neches plant, in some parts it is considerably above 100/million risk. My question: why didn't EPA alert the residents of the community at that time?
As you know, the MON "source category" applies to certain equipment and processes at some chemical plants. Many plants are subject to more than one regulation. As we work to identify what emissions reductions are needed from a

particular source category, one tool we use is a facility-wide risk assessment to help us put emissions from the source category in context. This helps us as we work to determine what new requirements may be necessary. The facility-wide data are often incomplete and not quality assured to the same extent that the data used to support the rule are. At the time of the risk assessment for the MON we were focused on emissions related to regulation of the source category – including verifying that the data were quality assured and complete – to ensure we could develop requirements to reduce risks from those processes and equipment as needed.

Please note that for this particular facility, EPA is gathering the most current information on emissions as part of the follow-up to the Office of the Inspector General's March 2020 Management Alert and will share that information with the public.

Do you have any update on when the new when the updated SOCMI is expected?

We are currently examining the schedule for all sources that emit ethylene oxide, including review of the Synthetic Organic Chemical Manufacturing Industry NESHAP.

From Inside Climate News (ddl Sunday – they are printing on Monday):

We are writing to put in context the possibility of the American Petroleum Institute backing a carbon tax, as reported in the WSJ yesterday. As with other carbon tax proposals that the oil industry has backed, it would be packaged with regulatory rollbacks--or, as API's proposed statement says—"instead of mandates or prescriptive regulatory action." Can you or anyone else at EPA weigh in on the Biden administration's view on such trade-offs, or on whether there's a need to maintain EPA's regulatory authority?

(This is a new response based on language from Regan's hearing – I'm unsure if this hits the mark and would love your input on an appropriate response.)

> As Presidential-nominee for EPA Administrator, Michael Regan, has said, climate change represents an opportunity to look forward, and consider how we harness the power and statutory authority of the Clean Air Act in concert with major investments that we should see government-wide. As EPA moves forward, we will seek input from those who will be impacted by any particular actions we take, whether they be rulemakings or voluntary measures. It is too soon to speak to EPA's specific plans, but we will provide additional information as it becomes available.

Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/12/2021 7:31:40 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Rakosnik, Delaney [rakosnik.delaney@epa.gov]; Millett, John [Millett.John@epa.gov]
Subject: RE: NGO Calls
Attachments: ACE Letter_021121.doc SIGNED.pdf

Looping in John who can handle this. John, see below.

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Friday, February 12, 2021 2:30 PM
To: Rakosnik, Delaney <rakosnik.delaney@epa.gov>
Cc: Campbell, Ann <Campbell.Ann@epa.gov>
Subject: RE: NGO Calls

Send her my memo to the RAs and invite her to listen in on the opening minutes of one of my Hill calls. Best I can do at this late hour. Thanks.

Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency

From: Rakosnik, Delaney <rakosnik.delaney@epa.gov>
Sent: Friday, February 12, 2021 2:19 PM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: RE: NGO Calls

Joe – just talked to Rosemary. Can you offer her 3 or 4 lines (talking points) about what she needs to discuss with the NGOs?

From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Friday, February 12, 2021 1:20 PM
To: Rakosnik, Delaney <rakosnik.delaney@epa.gov>
Subject: RE: NGO Calls

Thanks very much, Delaney. I am content to let Rosemary do this. Makes sense.

Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency

From: Rakosnik, Delaney <rakosnik.delaney@epa.gov>
Sent: Friday, February 12, 2021 1:18 PM

To: Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: FW: NGO Calls

Below is the list that Rosemary will reach out to. Please let me know if you'd like to talk to any of these entities by yourself.

Ex. 5 Deliberative Process (DP)

From: Rakosnik, Delaney <rakosnik.delaney@epa.gov>
Sent: Friday, February 12, 2021 1:03 PM
To: Enobakhare, Rosemary <Enobakhare.Rosemary@epa.gov>
Subject: NGO Calls

Hi Rosemary,

Can you please plan on taking NGO calls for ACE today at 2:30-3:30? We want to 'drop the pen' on this by 4pm.

Many thanks!!

Delaney Rakosnik
Staff Assistant
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5406A, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-0935
Email: rakosnik.delaney@epa.gov

Message

From: Kim, Eun [Kim.Eun@epa.gov]
Sent: 3/2/2021 10:03:38 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Campbell, Ann [Campbell.Ann@epa.gov]
Subject: READING: Materials for Wednesday, March 3, 2021
Attachments: 2015 Ozone Transport Information Overview_3 March 2021_v3.docx; Ext. Comm. - Letter - 2021 - GHG Biden Letter Final Jan 25 2020.pdf; Draft Response to OIG Draft Reports - (1) EtO RTR and (2) Congressional Report .docx; Recent and Upcoming OIG reports on Air Toxics2.26.2021.docx

8:30am – Check In

9:15 am – Air Issues Meeting

Goffman, Joseph Calendar
Goffman.Joseph@epa.gov
On Wednesday, March 3, 2021
Time zone: (UTC-05:00) Eastern Time (US & Canada)
(Adjusted for Daylight Saving Time)

March 2021

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Busy | Tentative | Free
Out of Office | Working Elsewhere | Outside of Working Hours

March 2021

Wed, Mar 3

Before 8:00 AM	**Free**
8:00 AM – 10:00 AM	**Free**
10:00 AM – 12:30 PM	HOLD || Hearing
12:30 PM – 1:00 PM	Lunch/Management time
1:00 PM – 2:00 PM	2015 Ozone Transport Strategy and Overview (materials attached, 1 doc)
2:00 PM – 2:30 PM	**Free**
2:30 PM – 3:00 PM	One-on-One with Ann Ferrio
3:00 PM – 3:30 PM	Discussion with Alliance for Automotive Innovation (materials attached, 1 pdf)
3:30 PM – 4:00 PM	Recent OIG Reports on EtO (materials attached, 2 docs)

▩	4:00 PM – 4:30 PM	Meeting with API re: Methane, Ozone & PM NAAQS, Social cost of carbon, EJ and cost benefit rule
▩	4:30 PM – 5:00 PM	Management Time
☐	**5:00 PM – 6:00 PM**	**Free**
▩	6:00 PM – 6:30 PM	Discussion with Dennis Arfmann re: Clean Energy Issues
☐	**After 6:30 PM**	**Free**

Eunjung Kim
Special Assistant
Office of Air and Radiation
(202) 815-7252

Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/2/2021 11:17:02 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]
Subject: READING: Materials for February 3, 2021
Attachments: Goffman Joseph Calendar.ics; OAR and EJ Background_Final.docx; RE: ORIA all hands (Wed. 2/3) -- Agenda, TPs & Q/A

Good evening. Attached are the materials for tomorrow's meetings. I am still following up with OP on the SCC meeting so I may have an update to this later.

Joe, please note I believe there is up front work to be completed ahead of your background investigation meeting on Thursday. You have some time on the calendar tomorrow to complete this pre-work. Directions appear to be in the invite itself.

Goffman, Joseph Calendar
Goffman.Joseph@epa.gov
On Wednesday, February 3, 2021
Time zone: (UTC-05:00) Eastern Time (US & Canada)
(Adjusted for Daylight Saving Time)

February 2021

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

Busy | Tentative | Free
Out of Office | Working Elsewhere | Outside of Working Hours

February 2021

Wed, Feb 3

Before 8:00 AM	**Free**
8:00 AM – 8:30 AM	**Free**
8:30 AM – 9:00 AM	Check-In
9:00 AM – 9:15 AM	**Free**
9:15 AM – 10:00 AM	Air Issues Meeting

■	10:00 AM – 10:30 AM	Management Roundtable
■	10:30 AM – 11:15 AM	Delegation Discussion
■	11:15 AM – 12:00 PM	Social Cost of Carbon OAR/OP
■	12:00 PM – 12:45 PM	EJ Pre Meeting (materials attached)
□	**12:45 PM – 1:00 PM**	**Free**
■	1:00 PM – 2:00 PM	ORIA All Hands Teams Live Event with Acting AA for OAR (materials attached)
■	2:00 PM – 5:00 PM	HOLD || Administrator Confirmation Hearing
■	5:00 PM – 5:30 PM	Management Time
■	5:30 PM – 6:00 PM	Prep for Background Interview (directions in email)
□	**After 6:00 PM**	**Free**

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/4/2021 12:09:27 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: EPA pick Regan garners bipartisan praise even as GOP attacks Biden

EPA pick Regan garners bipartisan praise even as GOP attacks Biden

By Annie Snider, Alex Guillén, Eric Wolff

02/03/2021 07:08 PM EST

EPA is preparing to reinstate a deluge of contentious Obama-era environmental regulations, but Michael Regan, the North Carolina environmental regulator picked by President Joe Biden to lead that work at EPA, appears to be on a glide path to bipartisan confirmation.

At his confirmation hearing before the Senate Environment and Public Works Committee on Wednesday, multiple Republicans lauded Regan for his reputation as a good listener and consensus builder during his time at the helm of North Carolina's Department of Environmental Quality, even as they slammed Biden's early moves to claw back Trump rules, block the Keystone XL pipeline and rejoin the Paris climate agreement.

"He will sometimes take on initiatives I will disagree with, most likely vote against, but I do believe that he will be somebody that we can rely on to be fair with the reality of the change in administration," said Republican Sen. Thom Tillis of North Carolina, who introduced his home state nominee.

Regan repeatedly promised to listen to lawmakers, meet with "stakeholders" and travel to communities affected by EPA moves from West Virginia to the Gulf of Mexico and Alaska.

"With this administrator, we're going to have an open-door policy," Regan said.

Several Republicans aired concerns about whether Regan will be influenced by Gina McCarthy, the Obama-era EPA chief now serving as Biden's National Climate Adviser. They questioned whether McCarthy, who is overseeing government-wide domestic climate efforts, would serve as a sort of shadow administrator.

Regan told the lawmakers there will be "healthy debates" between EPA, the White House and other agencies — but ultimately the law gives the EPA administrator the final say on certain issues.

"Where the decisions are in EPA's purview, I can assure you I will be leading and making those decisions and will be accepting accountability for those decisions," he said.

The broad support for Regan offered a sharp contrast to the confirmation vote four years ago for President Donald Trump's EPA pick Scott Pruitt, which the panel's Democrats collectively boycotted.

Indeed, Democrats at times seemed more worried about Regan than Republicans, pressing him on whether his promises to "not look backward" indicated that he wasn't prepared to address the damage to the agency they say was inflicted by the Trump administration.

"If you're the captain of a ship that's sustained some serious damage, you can't just look forward, you have to look at the ship … and know where the damage is and have a plan to repair it," said Sen. Sheldon Whitehouse (D-R.I.).

Regan assured him that he had gained "practical experience" in reviving a troubled environmental agency in North Carolina, where he said he'd boosted morale and brought transparency to decisions.

Even before Regan's arrival, EPA staff have been directed by Biden to begin re-evaluating rules that "may or may not have been done in a transparent manner of leveraged science the way we'd like," Regan said. "So we're going to correct that, and then we're going to begin to move this country forward."

On specific policy areas of contention — including power plant and vehicle carbon emissions, the Renewable Fuel Standard and water regulation — Regan largely dodged specifics while vowing to listen to the senators and their constituents.

"I do believe that we are facing a dire situation with climate change and [its] impacts. But I don't think that's to negate the fact that we all understand the anxiety and the fear as we make this transition that folks in your states have," Regan said after Sen. John Barrasso (R-Wyo.) hammered Biden's early moves on Keystone XL and the Paris agreement.

Sen. Shelley Moore Capito (R-W.Va.) — who served as chair for the hearing ahead of the official handover of the gavel to Tom Carper (D-Del.) — homed in on Regan's plans to regulate power plant greenhouse gas emissions, saying she still felt "stung" by the Obama administration's Clean Power Plan.

Regan sought to put that plan behind him, telling the lawmaker from the No. 2 coal-producing state that since neither the Obama nor the Trump EPA power plant is rule in place, "it presents a significant opportunity for the Environmental Protection Agency to take a clean slate and look at how do we best move forward."

However, he avoided declaring a position on whether EPA has the authority to regulate power plants "beyond the fenceline." A federal court ruled last month that EPA does have the authority to consider such emissions reductions measures.

Senators from both sides of the aisle pushed Regan to address the mountain of overdue work on the Renewable Fuel Standard, which sets the rules for biofuels. Barrasso, who will depart the committee as soon as the Senate passes an organizing resolution, pressed Regan on granting more exemptions from biofuels blending requirements to small refiners, while Sens. Tammy Duckworth (D-Ill.) and Joni Ernst (R-Iowa) suggested he should exercise restraint in issuing them, while also ensuring robust blending requirements for corn ethanol in the mandate once EPA rewrites the rules for 2023. But Regan didn't indicate how he come down on the contentious issue.

"The RFS is a priority for this administration," he told Ernst. "I recognize there will be a number of things on my desk. I want to sit down with my staff, sit down with legal counsel. ... we need to make sure the agency applies the latest data and the latest science and follow the letter of the law."

Regan downplayed EPA's traditional role as a regulator, arguing instead for an approach to climate change that mixed regulation, voluntary initiatives, government investment, and collaboration with affected parties.

"The best way to do that is by convening stakeholders where they live, work and serve, fostering an open dialogue rooted in a respect for science, a clear understanding of the law, and a commitment to building consensus around pragmatic solutions," Regan said in his opening remarks. "I have also learned that we can't simply regulate our way out of every problem we face."

Regan, who was tapped for the EPA post in large part because of support from environmental justice groups, said he plans to hire an environmental justice adviser to help make it a priority across the agency.

"We will have environmental justice and equity experts, people who have on-the-ground experience and expertise, placed in all of our media offices so that lens is applied at every level of our decision-making," Regan said, referring to the agency's offices that oversee air, water, land and chemicals.

"We have a lot of work to do, a lot of ground to make up," he added. "And I'm sure that I will be back before this committee asking for additional resources in this area to be sure that all Americans have access to clean air and clean water."

And Regan took Biden's campaign promises to address toxic "forever chemicals" a step further, committing to not just enact a federal drinking water limit, but also to pursue discharge limits for chemicals manufacturers and other industrial sources that use PFAS. The chemicals, which have shown up in drinking water supplies across the country, are a major concern for both Capito and Carper.

"PFAS — perfluorinated compounds — will be a top priority for this administration. We will pursue discharge limits. We will pursue water quality values. We will pursue all avenues that we can while we're developing these rulemaking processes to give the proper signals to states so that the states can take the appropriate actions like we've had to do in North Carolina," said Regan, who dealt intimately with the issue in North Carolina while dealing with a major contamination of the Cape Fear River by Chemours Co.

To view online:
https://subscriber.politicopro.com/energy/article/2021/02/epa-pick-regan-garners-bipartisan-praise-even-as-gop-attacks-biden-2032568

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Message

From: DeLuca, Isabel [DeLuca.Isabel@epa.gov]
Sent: 2/24/2021 9:00:34 PM
To: Campbell, Ann [Campbell.Ann@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; DeLuca, Isabel [DeLuca.Isabel@epa.gov]; Goffman, Joseph [Goffman.Joseph@epa.gov]; Kabanda, Thierry [Kabanda.Thierry@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]; Millett, John [Millett.John@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Rakosnik, Delaney [rakosnik.delaney@epa.gov]; Shoaff, John [Shoaff.John@epa.gov]
Subject: Intro Talkers AIM Meeting for Joe
Attachments: Talking Points_Joe Goffman_AIM Act Stakeholder Mtg Feb 25_ DRAFT.docx

Hi Joe,
Attached –thanks to the Stratospheric Protection Division -- are some draft bullets for your introduction to the AIM Act Stakeholder meeting tomorrow. Hope these are helpful.

Thanks,
Isabel

Isabel DeLuca
Office of Air and Radiation, US EPA
(202) 343-9247

Message

From: Agri-Pulse Newsletter [sara@agri-pulse.com]
Sent: 2/17/2021 1:06:18 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Your Agri-Pulse newsletter has arrived!

Greetings,

If there has ever been a time to experience what farmers and ranchers endure during extremely cold weather, the next couple of days offer an opportunity to visit someone who is trying to find a newborn calf in the middle of a snowstorm or keep the heat running so their hogs or chicks don't freeze. It's especially tough when the power goes out, as we've witnessed in several states. For our lead story this week, our team talked to producers, processors and government officials about the struggles and damages associated with the first big chill of 2021.

Over the last 35 years, we've written about a lot of ups and downs with the Conservation Reserve Program. Now, there is renewed interest in using the program as one way to pay farmers to address climate change. Philip Brasher provides you with an in-depth look at why this may or may not work. Ben Nuelle looks at how the battle to control the House of Representatives in 2022 is already heating up, with a focus on rural districts. Bill Tomson talked to farmers in the EU who are none to happy about an upcoming South American trade pact. And contributor Fran Howard looks at who is investing in and running vast indoor farming operations. Hint: Nearly half of the operators have no previous experience in agriculture.

Later this week, we'll be covering USDA's annual Agricultural Outlook Forum and I'm looking forward to moderating a Friday morning session on "Hot topics" in food and ag. We also continue to finalize details for our next big *Agri-Pulse* event. I hope you'll join us for our Ag & Food Policy Summit on March 22, 23, and 24. We've got a great lineup of speakers who will provide several different perspectives on addressing climate change. Read more here.

Best regards,

Sara Wyant

Editor/Publisher

Agri-Pulse Communications, Inc.

Cell: 630-247-7142

Sara@Agri-Pulse.com

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February 17, 2021 | Volume 17, Number 7

Click here to read the full edition as a PDF

The big chill: Sub-zero temperatures, energy outages threaten farms, agribusinesses

Farmers, ranchers and agribusinesses across the U.S. are reeling from extremely cold temperatures and power outages.

Collapse in CRP acreage poses challenge for climate policy

Democrats are preparing to pour money into federal conservation programs as a key way to pay farmers to address climate change. Converting marginal croplands to grass through the Conservation Reserve Program is one way to do it, but the question is whether USDA can get landowners interested in it again.

GOP targets ag district Democrats in 2022 but faces vulnerabilities within

House Republicans are eyeing 47 seats held by Democrats they hope to pick up in 2022 to take back the majority, including nine seats in key agricultural districts, but the GOP will have its own problems to deal with.

EU farmers contest South America trade pact

European farmers and ranchers offered their support as the EU signed pacts with Mexico, Japan, Singapore and South Korea, but they are raising alarms now over a massive deal with four South American countries that make up the Mercosur trade bloc.

Indoor farming spreading fast as entrepreneurs tap veggie demand

Surging demand for safe, locally-produced fresh vegetables is prompting investors and young entrepreneurs to plant indoor farms that are reaching consumers through some of the nation's largest retail chains.

Ag groups back Bronaugh nomination

Nearly 60 food and ag groups have thrown their support behind Jewel Bronaugh's nomination to be the next Deputy Secretary of Agriculture.

NPPC launches COVID-19 vaccination push

The National Pork Producers Council is urging employees across the various points of the pork production system to get the COVID-19 vaccine.

USDA extends eviction and foreclosure moratoriums

The Department of Agriculture is extending its moratorium on evictions and foreclosures on home loans that might be lagging in payments due to the COVID-19 pandemic.

Farm Hands on the Potomac: USDA names Rainge to civil rights post

USDA has tapped Monica Rainge to serve as the deputy assistant secretary for civil rights, and Sen. Tammy Baldwin, D-Wis., has been named the new Chair of the Senate Ag Appropriations Subcommittee.

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Message

From: Rakosnik, Delaney [rakosnik.delaney@epa.gov]
Sent: 3/3/2021 10:12:10 PM
To: OAR Briefings [OAR_Briefings@epa.gov]
Subject: FW: Material for Early Guidance Prebrief Thursday 3pm
Attachments: Light-Duty Vehicle GHG Standards NPRM Early Guidance Prebrief - to OAR 3-3-21.pptx

From: Mroz, Jessica <mroz.jessica@epa.gov>
Sent: Wednesday, March 3, 2021 4:01 PM
To: Rakosnik, Delaney <rakosnik.delaney@epa.gov>; Kim, Eun <Kim.Eun@epa.gov>
Subject: FW: Material for Early Guidance Prebrief Thursday 3pm

Hi there,

Can one of you help me distribute the materials for this meeting tomorrow to the attendees by attaching them to the invite?

If there's another protocol, please just let me know. OTAQ hasn't had many Tier 1 rule milestones take place virtually, so I'm used to printing and distributing these in person.

Thanks!!
Jessie

From: Wysor, Tad <wysor.tad@epa.gov>
Sent: Wednesday, March 3, 2021 3:59 PM
To: OAR Briefings <OAR_Briefings@epa.gov>
Cc: Dunham, Sarah <Dunham.Sarah@epa.gov>; Charmley, William <charmley.william@epa.gov>; Moran, Robin <moran.robin@epa.gov>; Olechiw, Michael <olechiw.michael@epa.gov>; Burch, Julia <Burch.Julia@epa.gov>; Mroz, Jessica <mroz.jessica@epa.gov>
Subject: Material for Early Guidance Prebrief Thursday 3pm

Please call me if I can help further. Thanks. Tad Wysor, OTAQ Ex. 6 Personal Privacy (PP)

Message

From: cfdcinc@aol.com [cfdcinc@aol.com]
Sent: 3/11/2021 2:22:24 PM
To: Regan, Michael [Regan.Michael@epa.gov]
CC: Utech, Dan [Utech.Dan@epa.gov]; Nushida.jane@epa.gov; Goffman, Joseph [Goffman.Joseph@epa.gov]; Harris, Sincere [Harris.Sincere@epa.gov]
Subject: Fwd: Octane & Repeal & Replace SAFE Rule
Attachments: Regan Letter1.pdf; Regan Letter1.doc

Sorry, meant to attach this as a pdf for security.

Thank you.

-----Original Message-----
From: cfdcinc@aol.com
To: Regan.Michael@epa.gov <Regan.Michael@epa.gov>
Cc: utech.dan@epa.gov <utech.dan@epa.gov>; Nushida.jane@epa.gov <Nushida.jane@epa.gov>; goffman.joseph@epa.gov <goffman.joseph@epa.gov>; harris.sincere@epa.gov <harris.sincere@epa.gov>
Sent: Thu, Mar 11, 2021 9:00 am
Subject: Octane & Repeal & Replace SAFE Rule

Greetings and Congratulations to all of you in the Administrator's office that give us hope!

Please see the attached and hopefully you can see to it that Mr. Regan will be able to read this himself.

Thank you.

Douglas A. Durante

CFDC CLEAN FUELS DEVELOPMENT COALITION EST 1993
Going Four Decades Strong

Douglas A. Durante
Executive Director
Clean Fuels Development Coalition
P..O. Box 341876
Bethesda MD 20827
301 537 8830

CFDC CLEAN FUELS DEVELOPMENT COALITION

March 10, 2021

The Honorable Michael Regan
U.S. Environmental Protection Agency
Washington. D.C.

Dear Administrator Regan:

On behalf of our organization, congratulations on your appointment to serve as Administrator of the Environmental Protection Agency. The Clean Fuels Development Coalition (CFDC) is a nonprofit organization supporting the production and use of clean, renewable transportation fuels. We have a broad base of support from biofuel, automotive, agriculture, and public interest stakeholders and have been engaged in these issues since 1988.

We have a long working relationship with EPA going back to when I served on the Reg-Neg Committee for the 1990 Clean Air Act Amendments. We have a particular interest in the Title II provisions that established several clean fuel programs. President Biden's laudable initiatives focusing on climate, environmental justice, and health through the Executive Orders are timely and welcome to all who value the environment and protecting public health.

The *Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis* identifies the immediate need to address the woefully inadequate fuel economy rule of the previous Administration. As you know, the EO directs the "agency" to consider the stakeholder views with regard to suspending, revising, or rescinding the Safer Affordable Fuel Efficient Vehicles Rule (SAFER) . We would like to be among the first to urge EPA to "Repeal and Replace" this rule. In addition to the overarching objective of establishing a single national program, we urge you to consider the immediate benefits that would result from an orderly transition to a national standard for cleaner burning, lower cost, and higher performance high octane gasoline.

While the development of electric vehicles will play a key role in reducing emissions, with 270 million cars on the road today and less than 2% of them EVs, internal combustion engines using gasoline will remain the primary form of propulsion for decades. Hundreds of billions of gallons of gasoline using toxic aromatics as the source of octane present a significant health threat to the public.

There are readily available alternatives to these petroleum based, toxic compounds. Despite requesting information on how it could best establish a national standard for higher octane gasoline, and specifically citing the benefits of higher blends of ethanol, EPA failed to take any action. Increasing the octane standard to a 98-100 RON would result in efficiency gains of 5-7% in short order.

4641 Montgomery Avenue, Suite 350, Bethesda, MD 20814
301-718-0077 • 301-718-0606/Fax • cfdcinc@aol.com • www.cleanfuelsdc.org

CFDC CLEAN FUELS DEVELOPMENT COALITION

In so doing it presents a pathway to comply with a number of important provisions of the CAA of 1990, notably the requirement that EPA control toxic and carbon intensive hazardous air pollutants as stipulated in Section 202 (l). This provision has been ignored by the agency for decades and aromatic levels in gasoline have reached dangerously high levels, in direct violation of Congressional intent.

As a result of the SAFE rule failing to address these issues, we along with several like-minded organizations have supported a challenge to EPA. **Our Amicus Brief** https://cleanfuelsdc.org/wp-content/uploads/2021/02/NFU-Amicus-Brief.pdf in support of the National Farmers Union and others makes a compelling scientific and legal argument as to why increasing octane while controlling aromatics should be part of any fuel economy rule. The Brief is supported a wide range of stakeholders, including many of the nation's Governors.

We respectfully urge you to direct your staff to review this information and hope there is an opportunity to brief the agency in more detail. The fuel economy rule is one of the most immediate and tangible actions the Biden Administration can take, and higher octane, low carbon fuels are component is central to that effort. We are so encouraged by your statement at your confirmation hearing last week that the agency will be driven by science and driven by the rule of law.

Thank you for your consideration of these views and we again congratulate you on your appointment and look forward to working with you in the future. Please let me know if there is a time when we might be able to follow up with you, either in person or virtually.

Sincerely,

Douglas A. Durante

Douglas A Durante
Executive Director

Cc The Honorable Pete Buttigieg, U.S. Department of Transportation
The Honorable Jennifer Granholm, U.S. Department of Energy
The Honorable Tom Vilsack, U.S. Department of Agriculture
The Honorable Gina McCarthy, the White House

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Executive Director

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The Honorable Jennifer Granholm, U.S. Department of Energy
The Honorable Tom Vilsack, U.S. Department of Agriculture

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CFDC CLEAN FUELS DEVELOPMENT COALITION

The Honorable Gina McCarthy, the White House

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Message

From: POLITICO Pro [alert@email.politicopro.com]
Sent: 2/9/2021 4:10:32 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: White House fills out staff at Council on Environmental Quality

White House fills out staff at Council on Environmental Quality

By Zack Colman

02/09/2021 11:09 AM EST

President Joe Biden on Tuesday added several policy officials and legal experts to his White House Council on Environmental Quality, an office charged with coordinating the administration-wide agenda on climate, energy and environmental issues.

Background: CEQ is taking a lead role in implementing Biden's goals for addressing disparate pollution levels in low-income communities and communities of color. The council will also be key to reversing some of the Trump administration's changes to the National Environmental Policy Act, the bedrock law that sets guideposts for the environmental review processes agencies conduct on major federal decisions and projects.

Details: The new appointments pull a number of Obama administration alumni and Capitol Hill veterans onto the Biden team.

Matt Lee-Ashley was tapped as senior lands director and interim chief of staff. Lee-Ashley served as deputy chief of staff at the Obama Interior Department, and he most recently led the Center for American Progress' natural resources policy efforts. He also was a communications director and legislative assistant for former Democratic Colorado Sen. Ken Salazar.

Jayni Hein will become senior director for NEPA and counsel. She was most recently at the NYU School of Law, where she was an adjunct professor and natural resources director for the school's Institute for Policy Integrity. Prior to that, she was executive director of the University of California-Berkeley School of Law's Center for Law, Energy and Environment and had worked as a private practice attorney.

Sara Gonzalez-Rothi was named senior director for water. She comes from the Senate Commerce, Science and Transportation Committee, where she led work on oceans, fisheries, climate and other environmental policies. She has worked extensively on ecosystem restoration, having led former Sen. Bill Nelson's Everglades work and helped draft the RESTORE Act in response to the Deepwater Horizon oil spill. She also worked on Mississippi River delta restoration at the National Wildlife Federation.

Austin Brown will be the senior director of transportation emissions. He joins the administration from the University of California-Davis Policy Institute for Energy, Environment and Economy. Another Obama alum, Brown has also worked at the Energy Department, National Renewable Energy Laboratory and the White House Office of Science and Technology Policy.

Justin Pidot will be general counsel. He was most recently a law professor and co-director of environmental law program at the University of Arizona's James E. Rogers College of Law. He was the deputy solicitor for land resources at Interior under Obama and had been an appellate litigator in the environment and natural resources division at the Justice Department.

Mark Chambers was picked for senior director for building emissions. He heads to CEQ after serving as director for New York City Mayor Bill de Blasio's sustainability office and previously held the sustainability and energy director position for the District of Columbia.

Andrew Mayock is the new federal chief sustainability officer. He was a senior adviser to the Biden transition, where he focused on coordinating climate and environmental justice efforts across government. He was involved in the Climate 21 project, a collection of Obama alumni and policy experts who delivered recommendations on how to embed climate initiatives throughout federal agencies. He worked at Obama's Office of Management and Budget for eight years and also has served in other federal roles at the White House, Treasury Department and Millennium Challenge Corporation.

Annie Snider contributed to this report.

To view online:
https://subscriber.politicopro.com/energy/article/2021/02/white-house-fills-out-staff-at-council-on-environmental-quality-2034154

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Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/18/2021 5:52:26 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: FERC closes docket on resiliency, starts new look at pipelines

FERC closes docket on resiliency, starts new look at pipelines

By Eric Wolff

02/18/2021 12:50 PM EST

FERC officially closed a power grid resiliency docket that was opened in 2018 in response to Trump administration pressure to rescue struggling coal and nuclear power plants, with commissioners opting on Thursday to take a region-by-region approach.

The details: FERC Chair Rich Glick said the closing of the docket did not mean FERC was turning its back on efforts to make the grid better able to withstand disruption. Instead, he said FERC needed to take a more granular approach to resilience. FERC voted 4-1 with Commissioner Neil Chatterjee dissenting.

"Now I understand that some may ask why is the commission taking the action given what happened this week in Texas and surrounding states," Glick said. "Today's order points out the resilience challenges facing the nation differ dramatically from region to region. For instance, the wildfires that threaten the grid in the West and the hurricanes that threaten the grid in the Gulf pose much different threats, and the only reasonable way to address these different, different dangers is to go with a region-by-region approach."

The docket was originally opened after the commission rejected a subsidy to coal and nuclear power proposed by then-Energy Secretary Rick Perry.

Chatterjee opposed the decision.

Gas certification inquiry: FERC voted unanimously to issue a notice of inquiry so it could revise its policy on certifying natural gas pipelines. FERC hasn't updated its policy since 1999. The notice asks for input on environmental risks, particularly from climate change and threats to communities where projects are constructed.

And it asked for new comments, even from groups that previously submitted comments when the docket was first opened in 2018 by then-Chair Kevin McIntyre.

"I encourage stakeholders to provide in-depth, practical, how-to recommendations for assuring that our decisions are based on a complete analysis of the need for proper post facilities on environmental justice concerns, and on approaches to greenhouse gas emissions impact," Commissioner Allison Clements said.

Footnote 134: The commission also vacated by a 3-1 vote a controversial footnote on its implementation of the Minimum Offer Price Rule in PJM Interconnection that created confusion over whether small state markets would be subject to the rule. Commissioner James Danly opposed the change, saying the decision represented a "dereliction" by FERC in setting a clear rule. Commissioner Mark Christie did not participate in this vote.

Clements to organize new public participation office: Glick announced that Clements would take the lead in creating a new office of public participation. Both Glick and Clements see the office as a key avenue for taking

input from underrepresented communities. "I commit to reaching to environmental justice communities who have traditionally had trouble being heard by FERC," Clements said in her opening remarks.

Modernizing the grid: Glick also announced a series of technical conferences focused on modernizing the grid. The first will examine capacity markets, followed by examinations of energy and ancillary services markets.

To view online:
https://subscriber.politicopro.com/energy/whiteboard/2021/02/ferc-closes-docket-on-resiliency-starts-new-look-at-pipelines-3987088

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Message

From: Miles Keogh [mkeogh@4cleanair.org]
Sent: 2/19/2021 5:41:17 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; DeLuca, Isabel [DeLuca.Isabel@epa.gov]; Lewis, Josh [Lewis.Josh@epa.gov]; Simon, Karl [Simon.Karl@epa.gov]; Haeuber, Richard [Haeuber.Richard@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]
Subject: Thanks, friends!

Joe, Tomas, Ale, and EPA friends,

Thanks for joining us at NACAA's board meeting yesterday. I know your schedules are full-to-bursting with groups and important stakeholders to connect with, so the fact that you made time for us was wonderful – and we'll gladly take you up on your offer for frequent collaboration on our shared mission of equitably advancing clean air and addressing the climate crisis. I'll be connecting with some of the folks in NACAA leadership early next week as we work out how we'll "get into the weeds" together, and we'll go from there. If you have additional areas of discussion, points of contact, or questions for NACAA, please don't hesitate use me and the NACAA staff as your switchboard operators.

Thanks again for getting things off to a great start. We're all looking forward to what's ahead.

Wishing you well, Miles

Miles E. Keogh
Executive Director
National Association of Clean Air Agencies
1530 Wilson Blvd Suite 320
Arlington VA 22209
(571) 970-6795
mkeogh@4cleanair.org
www.4cleanair.org
@WeAre4CleanAir

6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 81

[EPA-HQ-OAR-2020-0037; FRL-10018-96-OAR]

RIN 2060-AU61

Air Quality Designations for the 2010 Primary Sulfur Dioxide (SO_2) National Ambient Air Quality Standard - Round 4

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This final rule establishes the initial air quality designations for certain areas in the United States (U.S.) for the 2010 primary sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS). The Environmental Protection Agency (EPA) is designating the areas as either nonattainment, attainment/unclassifiable, or unclassifiable. The designations are based on application of the EPA's nationwide analytical approach and technical analysis, including evaluation of monitoring data and air quality modeling, to determine the appropriate designation and area boundary based on the weight of evidence for each area. The Clean Air Act (CAA or Act) directs areas designated as nonattainment to undertake certain planning and pollution control activities to attain the SO_2 NAAQS as expeditiously as practicable. This is the fourth and final set of actions to designate areas of the U.S. for the 2010 SO_2 NAAQS; there are no remaining undesignated areas in the U.S. for the 2010 SO_2 NAAQS.

DATES: The final rule is effective on April 30, 2021.

ADDRESSES: The EPA has established a public docket for these SO_2 designations at *https://www.regulations.gov* under Docket ID No. EPA-HQ-OAR-2020-0037.[1] Although listed in the docket index, some information is not publicly available, *e.g.,* Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form.

Out of an abundance of caution for members of the public and our staff, the EPA Docket Center and Reading Room are currently closed to the public, with limited exceptions, to reduce the risk of transmitting COVID-19. The Docket Center staff will continue to provide remote customer service via email, phone, and webform. For further information on EPA Docket Center services and the current status, please visit us online at *https://www.epa.gov/dockets*.

FOR FURTHER INFORMATION CONTACT: For general questions concerning this action, please contact Corey Mocka, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Policy Division, 109 T.W. Alexander Drive, Mail Code C539-04, Research Triangle Park, NC 27711; telephone: (919) 541-5142; email address: *mocka.corey@epa.gov*. The following EPA contacts can answer questions regarding areas in a particular EPA Regional office:

Region 2 – Marina Castro, telephone (212) 637-3713, email at *castro.marina@epa.gov.*

Region 3 – Megan Goold, telephone (215) 814-2027, email at *goold.megan@epa.gov.*

Region 4 – Twunjala Bradley, telephone (404) 562-9352, email at *bradley.twunjala@epa.gov.*

Region 5 – Alisa Liu, telephone (312) 353-3193, email at *liu.alisa@epa.gov.*

[1] The *https://www.regulations.gov* platform is in the process of being upgraded. Users may be automatically redirected to *https://beta.regulations.gov*. Both Web site addresses contain the same information.

Region 6 – Robert Imhoff, telephone (214) 665-7262, email at *imhoff.robert@epa.gov*.

Region 7 – William Stone, telephone (913) 551-7714, email at *stone.william@epa.gov*.

Region 8 – Rebecca Matichuk, telephone (303) 312-6867, email at *matichuk.rebecca@epa.gov*.

Region 9 – Ashley Graham, telephone (415) 972-3877, email at *graham.ashleyr@epa.gov*.

Region 10 – John Chi, telephone (206) 553-1185, email at *chi.john@epa.gov*.

Regional Offices	Affected State(s)
EPA Region 2 – Air Programs Branch, 290 Broadway, 25th Floor, New York, NY 10007	New York.
EPA Region 3 – Planning & Implementation Branch, 1650 Arch Street, Philadelphia, PA 19103	Maryland, Pennsylvania, Virginia, and West Virginia.
EPA Region 4 – Air Planning & Implementation Branch, Sam Nunn Atlanta Federal Center, 61 Forsyth Street SW, 12th Floor, Atlanta, GA 30303	Alabama, Georgia, Kentucky, and North Carolina.
EPA Region 5 – Air Programs Branch, Air & Radiation Division (AR-18J), 77 West Jackson Blvd., Chicago, IL 60604	Illinois, Indiana, and Wisconsin.
EPA Region 6 – State Planning & Implementation Branch, 1201 Elm Street, Dallas, TX 75270	Louisiana, Oklahoma, and Texas.
EPA Region 7 – Air Quality Planning Branch, 11201 Renner Blvd., Lenexa, KS 66219	Missouri and Nebraska.
EPA Region 8 – Air and Radiation Division, Air Toxics, Radiation, & Modeling Branch, 1595 Wynkoop Street, Denver, CO 80202	North Dakota and Wyoming.
EPA Region 9 – Air Planning Branch, 75 Hawthorne Street, San Francisco, CA 94105	Hawaii.
EPA Region 10 – Air Planning & State/Tribal Coordinations Branch, 1200 Sixth Avenue, Mail Code OAQ-107, Seattle, WA 98101	Washington.

Most EPA offices are closed to reduce the risk of transmitting COVID-19, but staff remain available via telephone and email. The EPA encourages the public to review information related to the Round 4 2010 SO_2 NAAQS designations online at *https://www.epa.gov/sulfur-*

dioxide-designations and also in the public docket at *https://www.regulations.gov* under Docket ID No. EPA-HQ-OAR-2020-0037.

SUPPLEMENTARY INFORMATION:

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D. Regulatory Flexibility Act (RFA)
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F. Executive Order 13132: Federalism
G. Executive Order 13175: Consultation and Coordination with Indian Tribal Government.
H. Executive Order 13045: Protection of Children from Environmental Health and Safety Risks
I. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution or Use
J. National Technology Transfer and Advancement Act (NTTAA)
K. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
L. Congressional Review Act (CRA)
M. Judicial Review

I. Preamble Glossary of Terms and Acronyms

The following are abbreviations of terms used in the preamble.

APA	Administrative Procedure Act
CAA	Clean Air Act
CFR	Code of Federal Regulations
CRA	Congressional Review Act
D.C.	District of Columbia
DRR	Data Requirements Rule
EPA	Environmental Protection Agency
FR	Federal Register
NAAQS	National Ambient Air Quality Standards
NTTAA	National Technology Transfer and Advancement Act
ppb	Parts per billion
PRA	Paperwork Reduction Act
RFA	Regulatory Flexibility Act
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TAR	Tribal Authority Rule
TSD	Technical Support Document
UMRA	Unfunded Mandate Reform Act
U.S.	United States

II. What is the purpose of this action?

The purpose of this final action is to announce and promulgate initial air quality designations for certain areas in the U.S. for the 2010 SO_2 NAAQS, in accordance with the requirements of the CAA. The EPA is designating areas as either nonattainment, attainment/unclassifiable, or unclassifiable, as defined in Section IV of this action, and based on evaluating any available information that was timely received, including (but not limited to) appropriate monitoring data and modeling analyses.

On June 2, 2010, the EPA Administrator signed a final rule that revised the primary SO_2 NAAQS (75 FR 35520; June 22, 2010) after review of the existing primary SO_2 standards promulgated on April 30, 1971 (36 FR 8187). The EPA established the revised primary SO_2

NAAQS at 75 parts per billion (ppb) which is attained when the 3-year average of the annual 99th percentile of daily maximum 1-hour average concentrations of SO_2 does not exceed 75 ppb.

The process for designating areas following promulgation of a new or revised NAAQS is contained in the CAA section 107(d) (42 U.S.C. 7407(d)). After promulgation of a new or revised NAAQS, each governor shall recommend air quality designations, including the appropriate boundaries for nonattainment areas, to the EPA.[2] The EPA considers these recommendations as part of its duty to promulgate the formal area designations and boundaries for the new or revised NAAQS. By no later than 120 days prior to promulgating designations, the EPA is required to notify states, territories, and tribes, as appropriate, of any intended modifications to an area designation or boundary recommendation that the EPA deems necessary.

After invoking a 1-year extension of the deadlines to designate areas, as provided for in section 107 of the Act, the EPA completed an initial round of SO_2 designations for certain areas of the country on July 25, 2013 (referred to as "Round 1").[3] Following the initial designations, three lawsuits were filed against the EPA in different U.S. District Courts, alleging the agency had failed to perform a nondiscretionary duty under the CAA by not designating all portions of the country by the June 2, 2013, deadline. In one of those cases, on March 2, 2015, the U.S. District Court for the Northern District of California entered an enforceable order for the EPA to

[2] Tribes are invited to submit recommendations following promulgation of a new or revised NAAQS but are not required to do so.

[3] A total of 29 areas throughout the U.S. were designated in this action published on August 5, 2013 (78 FR 47191). The EPA designated all 29 areas nonattainment based on violating monitored SO_2 concentrations from Federal Reference Method and Federal Equivalent Method monitors that are sited and operated in accordance with 40 CFR parts 50 and 58 and did not at that time designate any other areas.

complete the area designations by three specific deadlines according to the court-ordered schedule.[4]

To meet the first court-ordered deadline, the Administrator signed final actions on June 30, 2016, and November 29, 2016, (collectively referred to as "Round 2") designating additional areas.[5] To meet the second deadline of the court-ordered schedule, the Administrator signed final actions on December 21, 2017, and March 28, 2018, (collectively referred to as "Round 3") designating most of the remaining areas of the country.[6] Finally, the EPA is under a December 31, 2020, court-ordered deadline, the final of the three deadlines established by the court, to designate all remaining undesignated areas (collectively referred to as "Round 4" or the "final round"). These remaining undesignated areas are: (1) Those areas which, under the court order, did not meet the criteria that required designation in Round 2 and also were not required to be designated in Round 3 due to installation and operation of a new SO_2 monitoring network by January 2017 in the area meeting EPA's specifications referenced in EPA's SO_2 Data Requirements Rule (DRR);[7] and (2) those areas which EPA has not otherwise previously designated for the 2010 SO_2 NAAQS. With the completion of Round 4, there are no remaining undesignated areas for the 2010 SO_2 NAAQS.

On or about August 13, 2020, consistent with section 107(d)(1)(b)(ii) of the CAA, the EPA notified affected states of its intended designation of certain specific areas as either nonattainment, attainment/unclassifiable, or unclassifiable for the 2010 SO_2 NAAQS. These

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[4] *Sierra Club v. McCarthy*, No. 3-13-cv-3953 (SI) (N.D. Cal. March 2, 2015).
[5] A total of 65 areas throughout the U.S. were designated in these actions published on July 12, 2016 (81 FR 45039), and December 13, 2016 (81 FR 89870). Of these 65 areas, seven were designated nonattainment.
[6] Most remaining areas of the U.S. were designated in actions published on January 9, 2018 (83 FR 1098) and April 5, 2018 (83 FR 14597). Of these areas, six were designated nonattainment.
[7] *See* 80 FR 51052 (August 21, 2015), codified at 40 CFR part 51, subpart BB.

states then had the opportunity to demonstrate why they believed an intended modification of their original (or updated) recommendations by the EPA may be inappropriate. Although not required under the CAA, the EPA also chose to provide an opportunity for members of the public to comment on the EPA's August 2020 intended designations, as the EPA had done for the first, second, and third rounds of SO_2 designations. The EPA published a notice of availability and public comment period for the Round 4 intended designations on August 21, 2020 (85 FR 51694), and the public comment period closed on September 21, 2020.

The final Round 4 2010 SO_2 NAAQS designations and the boundaries of each area appear in the tables for each state within the regulatory text at the end of this document. State recommendations, EPA's August 2020 designation notification letters, and the subsequent state and public comments, are available in the public docket for these SO_2 designations at *https://www.regulations.gov* under Docket ID No. EPA-HQ-OAR-2020-0037. As described in Section VI of this action, the EPA may consider early certified 2018-2020 monitoring data that may be submitted to the appropriate EPA Regional office by February 15, 2021.

For the areas being designated nonattainment, the CAA directs states to develop and submit State Implementation Plans (SIPs) to the EPA within 18 months of the effective date of this final rule, that meet the requirements of sections 172(c) and 191-192 of the CAA and provide for attainment of the NAAQS as expeditiously as practicable, but not later than 5 years from the effective date of final designation.

III. What is the 2010 SO_2 NAAQS and what are the health concerns that it addresses?

The EPA revised the primary SO_2 NAAQS in a final rule published in the *Federal Register* on June 22, 2010 (75 FR 35520), which became effective on August 23, 2010.[8] Based on review of the air quality criteria for oxides of sulfur and the primary NAAQS for oxides of sulfur as measured by SO_2, the EPA revised the primary SO_2 NAAQS to provide requisite protection of public health with an adequate margin of safety. Specifically, the EPA established a new 1-hour SO_2 standard at a level of 75 ppb, which is met at an ambient air quality monitoring site when the 3-year average of the annual 99th percentile of daily maximum 1-hour average concentrations is less than or equal to 75 ppb, as determined in accordance with Appendix T of 40 CFR part 50, 40 CFR 50.17(a) and (b). The EPA also established provisions to revoke both the existing 24-hour and annual primary SO_2 standards, subject to certain conditions, 40 CFR 50.4(e).

Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (*e.g.*, while exercising or playing). Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly and asthmatics.

[8] Based on the EPA's review of the air quality criteria addressing human health effects and the primary NAAQS for SO_2, the agency took final action to retain the current standard without revision in a final action published in the *Federal Register* on March 18, 2019 (52 FR 9866).

IV. What are the CAA requirements for air quality designations and what action has the EPA taken to meet these requirements?

After the EPA promulgates a new or revised NAAQS, the EPA is required to designate all areas of the country as either nonattainment, attainment, or unclassifiable, for that NAAQS pursuant to section 107(d)(1)-(2) of the CAA. As part of these Round 4 designations, the EPA is implementing its interpretation of statutory terms under CAA section 107(d) nationwide and is basing these designations on the EPA's nationwide analytical approach and technical analysis, including evaluation of monitoring data and air quality modeling, applied to the available evidence that was timely received for each area.

Regarding statutory definitions and the EPA's interpretations of such, section 107(d)(1)(A)(i) of the CAA defines a *nonattainment* area as an area that does not meet the NAAQS or that contributes to a nearby area that does not meet the NAAQS. An *attainment* area is defined by the CAA as any area that meets the NAAQS and does not contribute to a nearby area that does not meet the NAAQS. *Unclassifiable* areas are defined by the CAA as those that cannot be classified on the basis of available information as meeting or not meeting the 2010 SO_2 NAAQS.

For the purpose of this action for the 2010 SO_2 NAAQS, the EPA has interpreted and applied the statutory definitions as follows. The EPA defines a *nonattainment* area as an area that, based on available information including (but not limited to) monitoring data and/or appropriate modeling analyses, EPA has determined either: (1) does not meet the 2010 SO_2 NAAQS, or (2) contributes to ambient air quality in a nearby area that does not meet the 2010 SO_2 NAAQS.

In this action, an *attainment/unclassifiable* area is defined by the EPA as an area that, based on available information including (but not limited to) appropriate monitoring data and/or appropriate modeling analyses, EPA has determined meets the 2010 SO_2 NAAQS and does not likely contribute to ambient air quality in a nearby area that does not meet the 2010 SO_2 NAAQS.

In this action, an *unclassifiable area* is defined by the EPA as an area for which the available information does not allow the EPA to determine whether the area meets the definition of a nonattainment area or the definition of an attainment/unclassifiable area.

This nationwide analytical approach also includes but is not limited to: 1) EPA's interpretations of other terms in the context of Round 4 of the 2010 SO_2 NAAQS; 2) the appropriate basis for characterizing the air quality of an area; 3) the five-factor analysis (described in Section V of this action) to determine the boundaries for each air quality area under the NAAQS; and 4) the methodology for appropriately characterizing SO_2 air quality through monitoring or modeling.

The EPA notes that CAA section 107(d) provides the agency with discretion to determine how best to interpret the terms in the definition of a nonattainment area (e.g., "contributes to" and "nearby") for a new or revised NAAQS, given considerations such as the nature of a specific pollutant, the types of sources that may contribute to violations, the form of the standards for the pollutant, and other relevant information. In particular, the EPA's position is that the statute does not require the agency to establish bright line tests or thresholds for what constitutes "contribution" or "nearby" for purposes of designations.[9]

[9] This view was confirmed in *Catawba County v. EPA*, 571 F.3d 20 (D.C. Cir. 2009).

Similarly, the EPA's position is that the statute permits the EPA to evaluate the appropriate application of the term "area" to include geographic areas based upon full or partial county boundaries, as may be appropriate for a particular NAAQS. For example, CAA section 107(d)(1)(B)(ii) explicitly provides that the EPA can make modifications to designation recommendations for an area "or portions thereof," and under CAA section 107(d)(1)(B)(iv) a designation remains in effect for an area "or portion thereof" until the EPA redesignates it.

By no later than 1 year after the promulgation of a new or revised NAAQS, CAA section 107(d)(1)(A) provides that each state governor shall recommend air quality designations, including the appropriate boundaries for areas, to the EPA. The EPA reviews those recommendations and is authorized to make any modifications the Administrator deems necessary. The statute does not define the term "necessary," but the EPA interprets this to authorize the Administrator to modify designations that did not meet the statutory requirements or were otherwise inconsistent with the facts or analysis deemed appropriate by the Administrator. If the EPA is considering modifications to a recommendation, we are required by CAA section 107(d)(1)(B)(ii) to notify the state of any such intended modifications not less than 120 days prior to our promulgation of the final designation. These notifications are commonly known as the "120-day letters." During this period, if the state or territory does not agree with the EPA's proposed modification, it has an opportunity to respond to the EPA and to demonstrate why it believes the modification proposed by the EPA is inappropriate. If a state or territory fails to provide any recommendation for an area, in whole or in part, the EPA still must promulgate a designation that the Administrator deems appropriate, pursuant to CAA section 107(d)(1)(B)(ii). While CAA section 107(d) specifically addresses the designations process

between the EPA and states and territories, the EPA intends to follow the same process to the extent practicable for tribes that submitted designation recommendations.

V. What guidance did the EPA issue and how did the EPA apply the statutory requirements to determine area designations and boundaries?

In the notice of proposed rulemaking for the revised SO_2 NAAQS (74 FR 64810; December 8, 2009), the EPA issued proposed guidance on our approach to implementing the standard, including our approach to initial area designations. The EPA solicited comment on that guidance and, in the notice of final rulemaking (75 FR 35520; June 22, 2010), provided further guidance concerning implementation of the standard and how to identify nonattainment areas and boundaries for the SO_2 NAAQS. Subsequently, on March 24, 2011, the EPA provided additional designations guidance to assist states with making their recommendations for area designations and boundaries.[10] The EPA also issued two additional designations guidance documents on March 20, 2015, and July 22, 2016, specific to Round 2 and Round 3 processes and schedules, respectively.[11]

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[10] *See*, "Area Designations for the 2010 Revised Primary Sulfur Dioxide National Ambient Air Quality Standards," memorandum to Regional Air Division Directors, Regions I-X, from Stephen D. Page, dated March 24, 2011, available at *https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/20110324_page_so2_designations_guidance.pdf.*

[11] *See* "Updated Guidance for Area Designations for the 2010 Primary Sulfur Dioxide National Ambient Air Quality Standard," memorandum to Regional Air Division Directors, Regions 1-10, from Stephen D. Page, dated March 20, 2015, available at *https://www.epa.gov/sites/production/files/2016-04/documents/20150320so2designations.pdf*, and "Area Designations for the 2010 Primary Sulfur Dioxide National Ambient Air Quality Standard – Round 3," memorandum to Regional Air Division Directors, Regions 1-10, dated July 22, 2016, available at *https://www.epa.gov/sites/production/files/2016-07/documents/areadesign.pdf.*

An updated designations guidance document was issued by the EPA on September 5, 2019, to better reflect the Round 4 2010 SO_2 NAAQS designations process and to supplement, where necessary, prior designations guidance documents.[12] This memorandum identifies factors that the EPA intended to evaluate in determining whether areas are in violation of the 2010 SO_2 NAAQS. The document also contains the factors that the EPA intended to evaluate in determining the boundaries for all remaining undesignated areas in the country. These factors include: 1) air quality characterization via ambient monitoring and/or dispersion modeling results; 2) emissions-related data; 3) meteorology; 4) geography and topography; and 5) jurisdictional boundaries.[13]

VI. What air quality information has the EPA used for these designations?

These designations are based on the EPA's application of the nationwide analytical approach to, and technical assessment of, the weight of evidence for each area, including but not limited to available air quality monitoring data and related air quality modeling results. With respect to air quality monitoring data, the EPA has considered data from at least the most recent three full calendar years, *i.e.*, 2017-2019. The 1-hour primary SO_2 standard is violated at an ambient air quality monitoring site when the 3-year average of the annual 99th percentile of the

[12] *See* "Area Designations for the 2010 Primary Sulfur Dioxide National Ambient Air Quality Standard – Round 4," memorandum to Regional Air Division Directors, Regions 1-10, from Peter Tsirigotis, dated September 5, 2019, available at *https://www.epa.gov/sites/production/files/2019-09/documents/round_4_so2_designations_memo_09-05-2019_final.pdf* .

[13] The EPA supplemented this guidance with documents first made available to states and other interested parties in 2013 and updated in 2016. *See* SO_2 NAAQS Designations Source-Oriented Monitoring Technical Assistance Document (February 2016), available at *https://www.epa.gov/sites/production/files/2016-06/documents/so2monitoringtad.pdf*, and SO_2 NAAQS Designations Modeling Technical Assistance Document (August 2016), available at *https://www.epa.gov/sites/production/files/2016-06/documents/so2modelingtad.pdf*.

daily maximum 1-hour average concentrations of SO_2 exceeds 75 ppb, as determined in accordance with Appendix T of 40 CFR part 50.

In the EPA's September 2019 memorandum, we noted that Round 4 area designations are based primarily on ambient monitoring data, including data from existing and new EPA-approved monitors that have collected data at least from January 2017 forward, pursuant to the DRR. In addition, the EPA may evaluate related air dispersion modeling submitted by state air agencies for two specific circumstances. First, states may submit air dispersion modeling of actual or allowable emissions to support the geographic extent of a nonattainment boundary. Second, states may submit air dispersion modeling of allowable emissions to demonstrate that new permanent and federally-enforceable SO_2 emissions limits that subject sources are meeting provide for attainment of the NAAQS and represent a more accurate characterization of current air quality at the time of designation than does monitoring data reflecting past air quality that does not account for compliance with new limits and associated enforceable emissions reductions.

The deadline for Round 4 designations and the practical difficulties of obtaining complete, quality-assured, certified SO_2 monitoring data for the entirety of calendar year 2020 in December 2020, make the EPA's use of final 2020 monitoring data for this action generally impracticable. Under normal circumstances, under the applicable regulations, the deadline for states to certify monitoring data for calendar year 2020 is May 1, 2021. However, because these designations are being promulgated at the end of calendar year 2020, and because states can make complete, quality-assured, certified 2020 data available for some areas quickly in 2021, to address the impracticability problem, the EPA is providing a process by which state-certified

2020 monitoring data that become available early in 2021 could be used in the Round 4 designations process.

Provided that this document is published in the *Federal Register* no later than March 31, 2021, the final Round 4 SO_2 designations announced in this action will be effective on April 30, 2021. If any state submits complete, quality-assured, certified 2020 data (*i.e.*, monitoring data from EPA's Air Quality System) to the appropriate EPA Regional office by February 15, 2021, supporting a change of the designation status for any Round 4 area within that state, and the EPA agrees that a change of designation status is appropriate, we will withdraw the designation announced in this action for such area and issue another designation that reflects the inclusion and analysis of such information. Any designation modification will occur in a separate *Federal Register* action prior to the April 30, 2021, effective date. We emphasize that EPA will conduct this process only for those states that submit the necessary information by the deadline of February 15, 2021, and in those instances where we can complete our analysis of the information and effect the change of designation status before the original effective date established by this final action.

VII. How do the Round 4 designations affect areas of Indian country?

There are no violating monitors for areas of Indian country, so no areas of Indian country are being designated as nonattainment or unclassifiable in Round 4. Any other parts of Indian country being designated as attainment/unclassifiable are being designated along with the surrounding state area.

VIII. Where can I find information forming the basis for this rule and exchanges between the EPA, states, and tribes related to this rule?

Information and data providing the basis for this action are provided in a final designations technical support document (TSD)[14] included in the docket. The final designations TSD, intended designations TSD, modeling files, technical assistance documents, applicable EPA memoranda, public comments, and copies of correspondence regarding this process between the EPA and the states, territories, tribes, and other parties, are available for review at the public docket for these SO_2 designations at *https://www.regulations.gov* under Docket ID No. EPA-HQ-OAR-2020-0037.

The EPA has also established a Web site for the initial SO_2 designations rulemakings at: *https://www.epa.gov/sulfur-dioxide-designations*. The Web site includes the EPA's final SO_2 designations, as well as state recommendation letters, the EPA's 120-day intended designations notification letters, technical support documents, responses to comments, and other related technical information. Air dispersion modeling input and output files are too large to post in the docket or on the Web site and must be requested from the EPA Docket Office or the Regional office contacts listed in the **FOR FURTHER INFORMATION CONTACT** section of this action.

[14] The single final TSD for this action consists of a few sections with information that applies to all affected areas or to certain groups of areas with some common features, and many sections that are specific to individual state areas. For convenience, the term "TSD" is also used generically to refer to these state-specific sections. For informational purposes, these individual state-specific sections/TSDs are available for separate downloading from the indicated EPA Web site.

IX. Environmental Justice Concerns

When the EPA establishes a new or revised NAAQS, the CAA requires the EPA to designate all areas of the U.S. as either nonattainment, attainment, or unclassifiable. This action addresses designation determinations for certain areas for the 2010 SO_2 NAAQS. Area designations address environmental justice concerns by ensuring that the public is properly informed about the air quality in an area. In locations where air quality does not meet the NAAQS, the CAA requires relevant state authorities to initiate appropriate air quality management actions to ensure that all those residing, working, attending school, or otherwise present in those areas are protected, regardless of minority and economic status.

X. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is exempt from review by the Office of Management and Budget because it responds to the CAA requirement to promulgate air quality designations after promulgation of a new or revised NAAQS.

B. Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs

This action is not an Executive Order 13771 regulatory action because air quality designations after promulgating a new revised NAAQS are exempt under Executive Order 12866.

C. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA. This action fulfills the non-discretionary duty for the EPA to promulgate air quality designations after

promulgation of a new or revised NAAQS and does not contain any information collection activities.

D. Regulatory Flexibility Act (RFA)

This designation action under CAA section 107(d) is not subject to the RFA. The RFA applies only to rules subject to notice-and-comment rulemaking requirements under the Administrative Procedures Act (APA), 5 U.S.C. 553, or any other statute. Section 107(d)(2)(B) of the CAA explicitly provides that designations are exempt from the notice-and-comment provisions of the APA. In addition, designations under CAA section 107(d) are not among the list of actions that are subject to the notice-and-comment rulemaking requirements of CAA section 307(d).

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538 and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local, or tribal governments or the private sector.

F. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government. The division of responsibility between the federal government and the states for purposes of implementing the NAAQS is established under the CAA.

G. Executive Order 13175: Consultation and Coordination with Indian Tribal Government

This action does not have tribal implications, as specified in Executive Order 13175. This action concerns the designation of certain areas in the U.S. for the 2010 SO_2 NAAQS. The CAA

provides for states, territories, and eligible tribes to develop plans to regulate emissions of air pollutants within their areas, as necessary, based on the designations. The Tribal Authority Rule (TAR) provides tribes the opportunity to apply for eligibility to develop and implement CAA programs, such as programs to attain and maintain the SO_2 NAAQS, but it leaves to the discretion of the tribe the decision of whether to apply to develop these programs and which programs, or appropriate elements of a program, the tribe will seek to adopt. This rule does not have a substantial direct effect on one or more Indian tribes. It would not create any additional requirements beyond those of the SO_2 NAAQS. This rule establishes the designations for certain areas of the country for the 2010 SO_2 NAAQS, but no areas of Indian country are being designated as nonattainment by this action. Furthermore, this rule does not affect the relationship or distribution of power and responsibilities between the federal government and Indian tribes. The CAA and the TAR establish the relationship of the federal government and tribes in developing plans to attain the NAAQS, and this rule does nothing to modify that relationship. Thus, Executive Order 13175 does not apply.

Although Executive Order 13175 does not apply to this rule, after the EPA promulgated the 2010 primary SO_2 NAAQS, the EPA communicated with tribal leaders and environmental staff regarding the designations process. In 2011, the EPA also sent individualized letters to all federally recognized tribes to explain the designation process for the 2010 SO_2 NAAQS, to provide the EPA designations guidance, and to offer consultation with the EPA. The EPA provided further information to tribes through presentations at the National Tribal Forum and through participation in National Tribal Air Association conference calls. The EPA also sent individualized letters to all federally recognized tribes that submitted recommendations to the EPA about the EPA's intended Round 1 designations for the SO_2 standard and offered tribal

leaders the opportunity for consultation.[15] These communications provided opportunities for tribes to voice concerns to the EPA about the general designations process for the 2010 SO_2 NAAQS, as well as concerns specific to a tribe, and informed the EPA about key tribal concerns regarding designations as the designations process was under development and through its implementation up to that point. For the second, third, and fourth rounds of SO_2 designations, the EPA sent additional letters to tribes that could potentially be affected and offered additional opportunities for participation in the designations process.

H. Executive Order 13045: Protection of Children from Environmental Health and Safety Risks

The EPA interprets Executive Order 13045 as applying to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not establish an environmental standard intended to mitigate health or safety risks.

I. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution or Use

This action is not subject to Executive Order 13211 because it is not a significant regulatory action under Executive Order 12866.

J. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

[15] These communication letters to the tribes are provided in the dockets for Round 1 (Docket ID NO. EPA-HQ-OAR-2012-0233), Round 2 (Docket ID NO. EPA-HQ-OAR-2014-0464), and Round 3 (Docket ID NO. EPA-HQ-OAR-2017-0003).

K. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

This action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). The documentation for this determination is contained in Section IX of this action, "Environmental Justice Concerns."

L. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the U.S. This action is not a "major rule" as defined by 5 U.S.C. 804(2).

M. Judicial Review

Section 307(b)(1) of the CAA indicates which Federal Courts of Appeal have venue for petitions of review of final actions by the EPA. This section provides, in part, that petitions for review must be filed in the Court of Appeals for the District of Columbia Circuit: (i) when the agency action consists of "nationally applicable regulations promulgated, or final actions taken, by the Administrator," or (ii) when such action is locally or regionally applicable, if "such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination."

This final action is nationally applicable. To the extent a court finds this final action to be locally or regionally applicable, the EPA finds that this action is based on a determination of "nationwide scope or effect" within the meaning of CAA section 307(b)(1). This final action establishes designations for the 2010 SO_2 NAAQS for certain areas across the U.S., located in 21

states, nine EPA Regions, and 10 federal judicial circuits. This final action is also based on a common core of determinations applied to areas across the country, including the EPA's nationwide analytical approach to and technical analysis of evaluating monitoring data and air quality modeling within the EPA's interpretation of statutory terms in the CAA such as the definitions of nonattainment, attainment, and unclassifiable under section 107(d)(1) of the CAA. For these reasons, this final action is nationally applicable or, alternatively, to the extent a court finds this action to be locally or regionally applicable, the Administrator has determined that this final action is based on a determination of nationwide scope or effect for purposes of CAA section 307(b)(1) and is hereby publishing that finding in the *Federal Register*.

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States Court of Appeals for the District of Columbia Circuit within 60 days from the date this final action is published in the *Federal Register*. Filing a petition for reconsideration by the Administrator of this final action does not affect the finality of the action for the purposes of judicial review, nor does it extend the time within which a petition for judicial review must be filed, and shall not postpone the effectiveness of such rule or action.

List of Subjects in 40 CFR Part 81

Environmental protection, Air pollution control, National parks, Wilderness areas.

Signing Statement

This document of the Environmental Protection Agency was signed on December 21, 2020, by Andrew Wheeler, Administrator, pursuant to court order of December 31, 2020. That document with the original signature and date is maintained by EPA. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned EPA Official re-signs the document for publication, as an official document of the Environmental Protection Agency. This administrative process in no way alters the legal effect of this document upon publication in the **Federal Register**.

Signed in Washington, DC, on December 21, 2020, by Andrew Wheeler, Administrator.

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Dated:

_____

Jane Nishida,
Acting Administrator.

For the reasons set forth in the preamble, 40 CFR part 81 is amended as follows:

PART 81--DESIGNATIONS OF AREAS FOR AIR QUALITY PLANNING PURPOSES

1. The authority citation for part 81 continues to read as follows:

Authority: 42 U.S.C. 7401, et. seq.

Subpart C-Section 107 Attainment Status Designations

2. In §81.301, the table entitled "Alabama–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and the entry "Shelby County (part)" and adding the entry "Shelby County (remainder)" in alphabetical order to read as follows:

§81.301 Alabama.

* * * * *

Alabama–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
Shelby County (remainder)	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

3. In §81.311, the table entitled "Georgia–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table, the "Designated area" column heading, and the entry "Rest of State" and adding the entry "Floyd County" in alphabetical order to read as follows:

§81.311 Georgia.

* * * * *

Georgia–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
Floyd County	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

4. In §81.312, the table entitled "Hawaii–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and the "Designated area" column heading and adding a the entry "Honolulu County" in alphabetical order to read as follows:

§81.312 Hawaii.

* * * * *

Hawaii–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
Honolulu County	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

5. Section 81.314 is amended by revising the table entitled "Illinois–2010 Sulfur Dioxide NAAQS [Primary]" to read as follows:

§81.314 Illinois.

* * * * *

Illinois–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
Alton Township, IL	9/12/2016	Nonattainment.
Madison County (part)		
Within Alton Township: Area east of Corporal Belchik Memorial Expressway, south of East Broadway, south of Route 3, and north of Route 143		

Lemont, IL	5/26/2020	Attainment.
Cook County (part)		
Lemont Township		
Will County (part)		
DuPage Township and Lockport Township		
Pekin, IL	5/26/2020	Attainment.
Tazewell County (part)		
Cincinnati Township and Pekin Township		
Peoria County (part)		
Hollis Township		
Rest of State:		
Adams County		Attainment/Unclassifiable.
Alexander County		Attainment/Unclassifiable.
Bond County		Attainment/Unclassifiable.
Boone County		Attainment/Unclassifiable.
Brown County		Attainment/Unclassifiable.
Bureau County	9/12/2016	Attainment/Unclassifiable.
Calhoun County		Attainment/Unclassifiable.
Carroll County		Attainment/Unclassifiable.
Cass County		Attainment/Unclassifiable.
Champaign County		Attainment/Unclassifiable.
Christian County		Attainment/Unclassifiable.
Clark County		Attainment/Unclassifiable.
Clay County		Attainment/Unclassifiable.
Clinton County		Attainment/Unclassifiable.
Coles County		Attainment/Unclassifiable.
Cook County (part) (remainder)		Attainment/Unclassifiable.
Crawford County		Attainment/Unclassifiable.
Cumberland County		Attainment/Unclassifiable.
De Kalb County		Attainment/Unclassifiable.
De Witt County		Attainment/Unclassifiable.
Douglas County		Attainment/Unclassifiable.
Du Page County		Attainment/Unclassifiable.
Edgar County		Attainment/Unclassifiable.
Edwards County		Attainment/Unclassifiable.
Effingham County		Attainment/Unclassifiable.
Fayette County		Attainment/Unclassifiable.
Ford County		Attainment/Unclassifiable.
Franklin County		Attainment/Unclassifiable.
Fulton County		Attainment/Unclassifiable.
Gallatin County		Attainment/Unclassifiable.
Greene County		Attainment/Unclassifiable.

Grundy County		Attainment/Unclassifiable.
Hamilton County		Attainment/Unclassifiable.
Hancock County		Attainment/Unclassifiable.
Hardin County		Attainment/Unclassifiable.
Henderson County		Attainment/Unclassifiable.
Henry County		Attainment/Unclassifiable.
Iroquois County		Attainment/Unclassifiable.
Jackson County		Attainment/Unclassifiable.
Jasper County	9/12/2016	Attainment/Unclassifiable.
Jefferson County		Attainment/Unclassifiable.
Jersey County		Attainment/Unclassifiable.
Jo Daviess County		Attainment/Unclassifiable.
Johnson County		Attainment/Unclassifiable.
Kane County		Attainment/Unclassifiable.
Kankakee County		Attainment/Unclassifiable.
Kendall County		Attainment/Unclassifiable.
Knox County		Attainment/Unclassifiable.
Lake County		Attainment/Unclassifiable.
La Salle County		Attainment/Unclassifiable.
Lawrence County		Attainment/Unclassifiable.
Lee County		Attainment/Unclassifiable.
Livingston County		Attainment/Unclassifiable.
Logan County		Attainment/Unclassifiable.
McDonough County		Attainment/Unclassifiable.
McHenry County		Attainment/Unclassifiable.
McLean County		Attainment/Unclassifiable.
Macon County	4/30/2021	Attainment/Unclassifiable.
Macoupin County		Attainment/Unclassifiable.
Madison County (part) (remainder)[4]		Attainment/Unclassifiable.
Marion County		Attainment/Unclassifiable.
Marshall County		Attainment/Unclassifiable.
Mason County		Attainment/Unclassifiable.
Massac County	9/12/2016	Attainment/Unclassifiable.
Menard County		Attainment/Unclassifiable.
Mercer County		Attainment/Unclassifiable.
Monroe County		Attainment/Unclassifiable.
Montgomery County		Attainment/Unclassifiable.
Morgan County		Attainment/Unclassifiable.
Moultrie County		Attainment/Unclassifiable.
Ogle County		Attainment/Unclassifiable.
Peoria County (part) (remainder)		Attainment/Unclassifiable.
Perry County		Attainment/Unclassifiable.
Piatt County		Attainment/Unclassifiable.
Pike County		Attainment/Unclassifiable.

Pope County		Attainment/Unclassifiable.
Pulaski County		Attainment/Unclassifiable.
Putnam County	9/12/2016	Attainment/Unclassifiable.
Randolph County		Attainment/Unclassifiable.
Richland County		Attainment/Unclassifiable.
Rock Island County		Attainment/Unclassifiable.
St. Clair County		Attainment/Unclassifiable.
Saline County		Attainment/Unclassifiable.
Sangamon County		Attainment/Unclassifiable.
Schuyler County		Attainment/Unclassifiable.
Scott County		Attainment/Unclassifiable.
Shelby County		Attainment/Unclassifiable.
Stark County		Attainment/Unclassifiable.
Stephenson County		Attainment/Unclassifiable.
Tazewell County (part) (remainder)		Attainment/Unclassifiable.
Union County		Attainment/Unclassifiable.
Vermilion County		Attainment/Unclassifiable.
Wabash County		Attainment/Unclassifiable.
Warren County		Attainment/Unclassifiable.
Washington County		Attainment/Unclassifiable.
Wayne County		Attainment/Unclassifiable.
White County		Attainment/Unclassifiable.
Whiteside County		Attainment/Unclassifiable.
Will County (part) (remainder)		Attainment/Unclassifiable.
Williamson County	[3]10/15/2019	Attainment/Unclassifiable.
Winnebago County		Attainment/Unclassifiable.
Woodford County		Attainment/Unclassifiable.

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

[3]Williamson County was initially designated on September 12, 2016. The initial designation was reconsidered and modified on October 15, 2019.

[4]A portion of Madison County, specifically all of Wood River Township, and the area in Chouteau Township north of Cahokia Diversion Channel, was designated attainment/unclassifiable on 9/12/16.

* * * * *

6. In §81.315, the table entitled "Indiana–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and the "Designated area" column heading and adding the entry "Porter County" in alphabetical order to read as follows:

§81.315 Indiana.

* * * * *

Indiana–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
Porter County	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

7. In §81.318, table entitled "Kentucky–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 4 from the table and the entry "Henderson County (part)" and adding the

entries "Henderson-Webster Counties, KY" before the entry "Campbell-Clermont Counties, KY-OH:"; "Henderson County (remainder)" before the entry "Henry County"; and "Webster County (remainder)" in alphabetical order to read as follows:

§81.318 Kentucky.

* * * * *

Kentucky–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area	Designation	
	Date[1]	Type
Henderson-Webster Counties, KY	4/30/2021	Nonattainment.
Henderson County (part)		
Webster County (part)		
That portion of Henderson and Webster Counties encompassed by the polygon with the 48 vertices using Universal Traverse Mercator (UTM) coordinates of North American Datum 1983 (NAD83) as follows: (1) KY 520, Upper Delaware Rd to the Green River boundary at 463979.00 Easting (E), 4171000.03 Northing (N); (2) The Green River boundary to JZ Shelton Rd 459058.03 E, 4160832.96 N; (3) JZ Shelton Rd to KY 370 457811.00 E, 4159192.96, N; (4) KY 370 to Pennyrile Parkway I-69 457089.96 E, 4159452.95 N; (5) Pennyrile Parkway I-69 to Sassafras Grove Rd 457675.35 E, 4156244.55 N;		

(6) Sassafras Grove Rd to US 41 456236.68 E, 4156125.75 N; (7) US 41 to Slaughters Elmwood Rd 457442.82 E, 4153425.68 N; (8) Slaughters Elmwood Rd to Railroad Track (NW) 456589.41 E, 4153424.43 N; (9) Railroad Track (NW) to Breton Rd 453677.09 E, 4155992.29 N; (10) Breton Rd to KY 1835 453079.74 E, 4154924.00 N; (11) KY 1835 to KY 138 450702.89 E, 4153141.51 N; (12) KY 138 to Crowder Rd 452587.06 E, 4152032.38 N; (13) Crowder Rd to KY 120 453030.14 E, 4149175.08 N; (14) KY 120 to Gooch Jones Rd 447528.25 E, 4147663.88 N; (15) Gooch Jones Rd to John Roach Rd 446551.75 E, 4150042.51 N; (16) John Roach Rd to Old Dixon Slaughters Rd 447462.17 E, 4151329.04 N; (17) Old Dixon Slaughters Rd to Old Dixon Rd 446532.28 E, 4152143.23 N; (18) Old Dixon Rd to KY 138 446849.49 E, 4152437.09 N;		

(19) KY 138 to Carnel Brooks Rd 450196.38 E, 4153305.18 N; (20) Carnel Brooks Rd to Rakestraw Bottoms Rd 450079.34 E, 4154326.39 N; (21) Rakestraw Bottoms Rd to KY 132 447141.40 E, 4157145.04 N; (22) KY 132 to KY 283 444025.55 E, 4156172.90 N; (23) KY 283 to Beckley Osbourne Rd 444300.82 E, 4158111.35 N; (24) Beckley Osbourne Rd to Dixon Wanamaker Rd 442067.07 E, 4158641.90 N; (25) Dixon Wanamaker Rd to KY 191 441887.88 E, 4161614.33 N; (26) KY 191 to D Melton Rd 442743.25 E, 4161250.11 N; (27) D Melton Rd to Knoblick Creek Rd 443688.82 E, 4162093.08 N; (28) Knoblick Creek Rd to US 41A 442319.35 E, 4163220.45 N; (29) US 41A to Dixon 1 Rd 443500.62 E, 4170518.52 N; (30) Dixon 1 Rd to GF Sights Rd 443094.58 E, 4170166.59 N;		

(31) GF Sights Rd to Cairo Dixie Rd 441341.46 E, 4170978.60 N; (32) Cairo Dixie Rd to Liles Cairo Rd 442919.00 E, 4173140.24 N; (33) Liles Cairo Rd to US 41A 443124.23 E, 4173204.51 N; (34) US 41A to Cairo Hickory Grove Rd 442860.28 E, 4174017.18 N; (35) Cairo Hickory Grove Rd to Pruitt Agnew Rd 446056.06 E, 4175740.98 N; (36) Pruitt Agnew Rd to KY 1299 447662.11 E, 4180049.93 N; (37) KY 1299 to Anthoston Frog Island Rd 448905.37 E, 4176327.31 N; (38) Anthoston Frog Island Rd to KY 136 452613.63 E, 4179047.02 N; (39) KY 136 to Upper Delaware Rd 454451.59 E, 4177687.26 N; (40) Upper Delaware Rd to Barren Church Rd S 456153.23 E, 4177723.20 N; (41) Barren Church Rd S to Barren Church Rd N 457912.85 E, 4180247.83 N; (42) Barren Church Rd N to KY 1078 458542.52 E, 4181615.55 N;		

(43) KY 1078 to Jones Brothers Rd 461322.00 E, 4179952.85 N; (44) Jones Brothers Rd to KY 416 461209.84 E, 4177755.55 N; (45) KY 416 to KY 1078 463492.08 E, 4178026.50 N; (46) KY 1078 to Onionville Rd 464177.31 E, 4177054.13 N; (47) Onionville Rd to Work Road 465476.34 E, 4176076.78 N; (48) Work Road to Upper Delaware Rd 462529.15 E, 4173036.52 N		
* * *	* *	* *
Henderson County (remainder)	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *
Webster County (remainder)	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *

[1]This date is April 9, 2018, unless otherwise noted.

[2]Excludes Indian country located in each area, if any, unless otherwise specified

[3]Includes any Indian country in each county or area, if any, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

* * * * *

8. In §81.319, the table entitled "Louisiana–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and the "Designated area" column heading and adding the entries "East Baton Rouge Parish"; "St. Charles Parish"; "St. James Parish"; and "West Baton Rouge Parish" in alphabetical order to read as follows:

§81.319 Louisiana.

* * * * *

Louisiana–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
East Baton Rouge Parish	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *
St. Charles Parish	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *
St. James Parish	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *
West Baton Rouge Parish	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

9. In §81.321, the table entitled "Maryland–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and the "Designated area" column heading and adding the

entry "Allegany County" before the entry "Anne Arundel County (part) Remainder of County" to read as follows:

§81.321. Maryland.

* * * * *

Maryland–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
Allegany County	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

10. In §81.326, the table entitled "Missouri–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and the "Designated area" column heading and adding the entries "New Madrid County, MO" before the entry "Franklin-St. Charles Counties, MO"; "Iron County" in alphabetical order; and "New Madrid County (remainder)" before the entry "Newton County" to read as follows:

§81.326 Missouri.

* * * * *

Missouri–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
New Madrid County, MO	4/30/2021	Nonattainment.
New Madrid County (part)		
Area bounded by: East: Missouri/Kentucky and Missouri/Tennessee State lines. North: County Highway 406 East to Levee Road, following Levee Road North to County Highway 406, then extending directly East to the Missouri/Kentucky State line. West: County Highway 403 South: County Highway 408 East to the intersection with County Highway 431, then extending directly East to the Missouri/Tennessee State line		
* * *	* *	* *
Iron County	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *
New Madrid County (remainder)	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

11. In §81.328, the table entitled "Nebraska–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and the "Designated area" column heading and adding the entry "Douglas County" in alphabetical order to read as follows:

§81.328 Nebraska.

* * * * *

Nebraska–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
Douglas County	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

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12. In §81.333, the table entitled "New York–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and the "Designated area" column heading and adding the entries "St. Lawrence County (part)" before the entry "Monroe County"; "Cayuga County" before the entry "Chautauqua County"; "Seneca County" before the entry "Steuben County"; "St. Lawrence County (remainder)" before the entry "Steuben County"; and "Tompkins County" in alphabetical order to read as follows:

§81.333 New York.

* * * * *

New York–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
St. Lawrence County (part)	4/30/2021	Nonattainment.
That portion of St. Lawrence County encompassed by the polygon with the vertices using Universal Traverse Mercator (UTM) coordinates in UTM zone 18 with datum NAD83 as follows: (1) Vertices-UTM Easting (m) 512656.8, UTM Northing 4977651.3; (2) vertices-UTM Easting (m) 510356.8, UTM Northing 4976189.5; (3) Vertices-UTM Easting (m) 511064.5, UTM Northing 4974489.7; (4) Vertices-UTM Easting (m) 508898.2, UTM Northing 4973487.1; (5) Vertices-UTM Easting (m) 509251.4, UTM Northing 4972866.3; (6) Vertices-UTM Easting (m) 509307.3, UTM Northing 4971758.9; (7) Vertices-UTM Easting (m) 507840.9, UTM Northing 4973890.8; (8) Vertices-UTM Easting (m) 504128.1, UTM Northing 4974535.5; (9) Vertices-UTM Easting (m) 502311.8, UTM Northing 4977342.3; (10) Vertices-UTM Easting (m) 503989.7, UTM Northing 4979232.2; (11) Vertices-UTM Easting (m) 504692.2, UTM Northing 4981230.3; (12) Vertices-UTM Easting (m) 509220.5, UTM Northing 4983035.6		
* * *	* *	* *
Cayuga County	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *
Seneca County	4/30/2021	Attainment/ Unclassifiable.

St. Lawrence County (remainder)	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *
Tompkins County	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

13. In §81.334, the table entitled "North Carolina–2010 Sulfur Dioxide NAAQS [Primary]" is amended by:

a. Removing footnote 4 from the table;

b. Removing footnote 4 from the entries: "Buncombe County (part)", "Haywood County (part)", and "Person County (part)".

c. Revising the entry "Buncombe County (part)" to "Buncombe County";

d. Adding the entry "Limestone Township" under the entry "Buncombe County";

e. Revising the entry "Haywood County (part)" to "Haywood County";

f. Adding the entry for "Beaverdam Township" under the entry "Haywood County";

g. Revising the entry "Person County (part)" to "Person County"; and

h. Adding the entry "Cunningham Township" under the entry "Person County".

The additions and revisions read as follows:

§81.334 North Carolina.

* * * * *

North Carolina–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area	Designation	
	Date[1]	Type
* * *	* *	* *
Buncombe County		Attainment/Unclassifiable.
All Townships except Limestone Township		
Limestone Township	4/30/2021	
* * *	* *	* *
Haywood County		Attainment/Unclassifiable.
All Townships except Beaverdam Township		
Beaverdam Township	4/30/2021	
* * *	* *	* *
Person County		Attainment/Unclassifiable.
All Townships except Cunningham Township		
Cunningham Township	4/30/2021	
* * *	* *	* *

[1]This date is April 9, 2018, unless otherwise noted.

[2]Excludes Indian country located in each area, if any, unless otherwise specified

[3]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

* * * * *

14. In §81.335, the table entitled "North Dakota–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and from the entry "Rest of State:" and adding the entry "Williams County" in alphabetical order to read as follows:

§81.335 North Dakota.

* * * * *

North Dakota–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
Rest of State:		Attainment/ Unclassifiable.
* * *	* *	* *
Williams County	4/30/2021	

[1] Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2] This date is April 9, 2018, unless otherwise noted.

* * * * *

15. In §81.337, the table entitled "Oklahoma–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and the "Designated area" column heading and adding the entries "Garfield County"; "Mayes County"; and "Muskogee County" in alphabetical order to read as follows:

§81.337 Oklahoma.

* * * * *

Oklahoma–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
Garfield County	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *
Mayes County	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *
Muskogee County	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

16. In §81.339, the table entitled "Pennsylvania–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and the "Designated area" column heading and adding the entry "York County" in alphabetical order to read as follows:

§81.339 Pennsylvania.

* * * * *

Pennsylvania–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
York County	4/30/2021	Attainment/ Unclassifiable.

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

17. In §81.344, the table entitled "Texas–2010 Sulfur Dioxide NAAQS [Primary]" is amended by:

a. Removing footnote 3 from the table and from the "Designated area" column heading;

b. Adding the entry "Howard County (part)" before the entry "Rusk and Panola Counties, TX";

c. Adding the entry "Hutchinson County (part)" before the entry "Rusk and Panola Counties, TX";

d. Adding the entry "Navarro County (part)" before the entry "Rusk and Panola Counties, TX";

e. Adding the entry "Harrison County" before the entry "Milam County";

f. Adding the entry for "Orange County" before the entry "Potter County";

g. Adding the entry "Bexar County" before the entry "Blanco County";

h. Adding the entry "Howard County (remainder)" before the entry "Hudspeth County";

i. Adding the entry "Hutchinson (remainder)" before the entry "Irion County";

j. Adding the entry "Jefferson County" before the entry "Jim Hogg County";

k. Adding the entry "Navarro County (remainder)" before the entry "Newton County"; and

l. Revising the entry "Robertson County" to "Robertson County (partial)" and adding footnote 3.

m. Adding the entry "Robertson County (remainder)" before the entry "Rockwall County" and adding footnote 3.

n. Revising the entry "Titus County (part)" to "Titus County (remainder)" and correct the date of designation to "4/30/2021".

The additions and revisions read as follows:

§81.344 Texas.

* * * * *

Texas–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
Howard County, TX (part)	4/30/2021	Nonattainment.
Those portions of Howard County encompassed by the rectangle with the vertices using Universal Traverse Mercator (UTM) coordinates in UTM zone 14 with datum NAD83 as follows: (1) Vertices—UTM Easting (m) 271177.6, UTM Northing (m) 3571453.5; (2) vertices—UTM Easting (m) 274913.8, UTM Northing (m) 3571453.5; (3) vertices—UTM Easting (m) 274913.8, UTM Northing (m) 3576035.9;		

(4) vertices—UTM Easting (m) 271177.6, UTM Northing (m) 3576035.9.		
* * *	* *	* *
Hutchinson County, TX (part)	4/30/2021	Nonattainment.
Those portions of Hutchinson County encompassed by the rectangle with the vertices using Universal Traverse Mercator (UTM) coordinates in UTM zone 14 with datum NAD83 as follows: (1) Vertices—UTM Easting (m) 273540.5, UTM Northing (m) 3945147.6; (2) vertices—UTM Easting (m) 296187.4, UTM Northing (m) 3944698.5; (3) vertices—UTM Easting (m) 296187.4, UTM Northing (m) 3959485.8; (4) vertices—UTM Easting (m) 273540.5, UTM Northing (m) 3959499.4.		
* * *	* *	* *
Navarro County (part)	4/30/2021	Nonattainment.
Those portions of Navarro County encompassed by the polygon with the vertices using Universal Traverse Mercator (UTM) coordinates in UTM zone 14 with datum NAD83 as follows: (1) Vertices—UTM Easting (m) 734940.8, UTM Northing (m) 3520745.2; (2) vertices—UTM Easting (m) 737000.0, UTM Northing (m) 3520585.9; (3) vertices—UTM Easting (m) 756678.9, UTM Northing (m) 3532601.9; (4) vertices—UTM Easting (m) 756678.9, UTM Northing (m) 3542866.0; (5) vertices—UTM Easting (m) 734940.8, UTM Northing (m) 3542866.0.		

* * *	* *	* *
Harrison County	4/30/2021	Unclassifiable.
* * *	* *	* *
Orange County	4/30/2021	Unclassifiable.
* * *	* *	* *
Bexar County	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *
Howard County (remainder)	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *
Hutchinson County (remainder)	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *
Jefferson County	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *
Navarro County (remainder)	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *
Robertson County (part)[3]	9/12/2016	Attainment/ Unclassifiable.
* * *	* *	* *
Robertson County (remainder)[3]	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *
Titus County (remainder)	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

[3] A portion of Robertson County, specifically the area around the Optim Energy Twin Oaks Power Station, was designated Attainment/Unclassifiable on 9/12/16. The remaining portion of Robertson County was designated on 4/30/2021.

* * * * *

18. In §81.347, the table entitled "Virginia–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and the "Designated area" column heading and adding the entries "Giles County (part)" before the entry "Buchanan County"; "Alleghany County"; "Botetourt County"; and "Giles County (remainder)" in alphabetical order to read as follows:

§81.347 Virginia.

* * * * *

Virginia–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
Giles County (part)	4/30/2021	Nonattainment.
Using Geographic Coordinate System: GCS_North_American_1983 and Datum D_North_American_1983, the area bounded by the lines connecting the following coordinate points (Latitude, Longitude): 37.385249, -80.718248 37.431656, -80.619986 37.391368, -80.597698 37.369986, -80.649488 37.354441, -80.642085 37.338479, -80.676322 37.339474, -80.676771 37.340652, -80.677123 37.341580, -80.677298 37.343330, -80.678318 37.344937, -80.679026 37.345866, -80.679692 37.347105, -80.680670 37.347976, -80.681783 37.348229, -80.682898 37.348480, -80.683657 37.348185, -80.684689 37.347824, -80.685948 37.347241, -80.687983 37.346509, -80.689766		

37.346075, -80.691489 37.345317, -80.693571 37.345091, -80.694767 37.344900, -80.696603 37.344679, -80.697755 37.344700, -80.698520 37.344989, -80.699570 37.345395, -80.700635 37.345740, -80.701485 37.347021, -80.701929 37.348308, -80.701922 37.349556, -80.701498 37.350789, -80.701099 37.352718, -80.700642 37.354894, -80.700352 37.356601, -80.700486 37.358442, -80.700844 37.359567, -80.701852 37.361185, -80.702914 37.361950, -80.703726 37.362516, -80.705580 37.362901, -80.707040 37.363285, -80.708539		
* * *	* *	* *
Alleghany County	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *
Botetourt County	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *
Giles County (remainder)	4/30/2021	Attainment/ Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

19. In §81.348, the table entitled "Washington–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and from the entry "Rest of State:" and adding the entries "Whatcom County (part)" before the entry "Lewis County"; "Chelan"; "Douglas"; and "Whatcom (remainder)" in alphabetical order to read as follows:

§81.348 Washington.

* * * * *

Washington–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
Whatcom County (part)	4/30/2021	Nonattainment.
That portion of Whatcom County encompassed by the rectangle with the vertices using Universal Traverse Mercator (UTM) coordinates in UTM zone 10 with datum NAD83 as follows: (1) Vertices- UTM Easting (m) 519671, UTM Northing (m) 5412272; (2) Vertices-UTM Easting (m) 524091, UTM Northing (m) 5412261; (3) Vertices-UTM Easting (m) 519671, UTM Northing (m) 5409010; (1) Vertices-UTM Easting (m) 524111, UTM Northing (m) 5409044.		
* * *	* *	* *
Rest of State:		
* * *	* *	* *
Chelan	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *
Douglas	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *
Whatcom (remainder)	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

20. In §81.349, the table entitled "West Virginia–2010 Sulfur Dioxide NAAQS [Primary]" is amended by removing footnote 3 from the table and the "Designated area" column heading and adding the entry "Mineral County" in alphabetical order to read as follows:

§81.349 West Virginia.

* * * * *

West Virginia–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
* * *	* *	* *
Mineral County	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

* * * * *

21. In §81.350, the table entitled "Wisconsin–2010 Sulfur Dioxide NAAQS [Primary]" is amended by:

a. Removing footnote 4 from the table and from the "Designated area" column heading;

b. Revising the entry "Oneida County", which is below the entry "Oconto County", to "Oneida County (remainder)";

c. Adding the entry "Outagamie County (part)" before the entry "Rhinelander, WI"; and

d. Adding the entry "Outagamie County (remainder)" before the entry "Ozaukee County".

The additions and revisions read as follows:

§81.350 Wisconsin.

* * * * *

Wisconsin–2010 Sulfur Dioxide NAAQS

[Primary]

Designated Area[1]	Designation	
	Date[2]	Type
Outagamie County (part)	4/30/2021	Nonattainment.
Outagamie County except Oneida Township (which includes Oneida Reservation), Oneida Off-Reservation Trust Land, and Noncontiguous Portions of Seymour Township Adjoining Oneida Nation Tribal Lands		
* * *	* *	* *
Oneida County (remainder)		Attainment/Unclassifiable.
* * *	* *	* *
Outagamie County (remainder)	4/30/2021	Attainment/Unclassifiable.
* * *	* *	* *

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the

designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

[3]Includes Indian country of the tribe listed in this table located in Forest County, Wisconsin. Information pertaining to areas of Indian country in this table is intended for Clean Air Act planning purposes only and is not an EPA determination of Indian country status or any Indian country boundary. EPA lacks the authority to establish Indian country land status, and is making no determination of Indian country boundaries, in this table.

* * * * *

22. Section 81.351 is amended by revising the table entitled "Wyoming–2010 Sulfur Dioxide NAAQS [Primary]" to read as follows:

§81.351 Wyoming.

* * * * *

Wyoming–2010 Sulfur Dioxide NAAQS

[Primary]

Designated area[1]	Designation	
	Date[2]	Type
Albany County		Attainment/Unclassifiable.
Big Horn County		Attainment/Unclassifiable.
Campbell County		Attainment/Unclassifiable.
Carbon County	4/30/2021	Attainment/Unclassifiable.
Converse County	4/30/2021	Attainment/Unclassifiable.
Crook County		Attainment/Unclassifiable.
Fremont County (part)		Attainment/Unclassifiable.
All areas west of the western border of Township 40North-Range 93West, T39N-R93W, and T38N-R93W, and south of US Route 20.		
Freemont County (remainder)	4/30/2021	Attainment/Unclassifiable.
Goshen County		Attainment/Unclassifiable.
Hot Springs County		Attainment/Unclassifiable.

Johnson County		Attainment/Unclassifiable.
Lincoln County		Attainment/Unclassifiable.
Natrona County		Attainment/Unclassifiable.
Niobrara County		Attainment/Unclassifiable.
Park County		Attainment/Unclassifiable.
Platte County		Attainment/Unclassifiable.
Sheridan County		Attainment/Unclassifiable.
Sublette County		Attainment/Unclassifiable.
Sweetwater County (part)		Attainment/Unclassifiable.
All areas of the county east of US Route 191.		
Sweetwater County (remainder)	4/30/2021	Attainment/Unclassifiable.
Teton County		Attainment/Unclassifiable.
Uinta County		Attainment/Unclassifiable.
Washakie County		Attainment/Unclassifiable.
Weston County		Attainment/Unclassifiable.

[1]Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2]This date is April 9, 2018, unless otherwise noted.

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6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 82

[EPA-HQ-OAR-2013-0597; FRL-10014-63-OAR]

[RIN 2060-A075]

Protection of the Stratospheric Ozone: Motor Vehicle Air Conditioning System Servicing

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule

SUMMARY: The Environmental Protection Agency (EPA) is adopting three technical standards developed by SAE International (SAE) for equipment that recovers, recycles, and/or recharges the refrigerant 2,3,3,3-Tetrafluoroprop-1-ene (HFO-1234yf or R-1234yf) in motor vehicle air conditioners (MVACs). The three standards are SAE J2843, SAE J2851, and SAE J3030. This rule adopts the most current versions of these standards by incorporating them by reference into the regulations under Title VI of the Clean Air Act (CAA). This will provide additional flexibility for industry stakeholders that wish to select recovery and recycling equipment certified to these standards.

DATES: This final rule is effective on **[INSERT DATE 30 DAYS FROM DATE OF PUBLICATION IN THE FEDERAL REGISTER], 30** days after publication in the **Federal Register**. The incorporation by reference of certain publications listed in the rule is approved by the Director of the **Federal Register** as of **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA-HQ-

OAR-2013-0597. All documents in the docket are listed on the http://www.regulations.gov web site. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through http://www.regulations.gov.

FOR FURTHER INFORMATION CONTACT: Chenise Farquharson, Stratospheric Protection Division, Office of Atmospheric Programs (Mail Code 6205T), Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460; telephone number: 202-564-7768; email address: farquharson.chenise@epa.gov.

SUPPLEMENTARY INFORMATION:

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I. General Information

A. Does this action apply to me?

Regulated entities, identified by the North American Industrial Classification System (NAICS) Code, may include, but are not limited to, the following which all fall under the category of "Industry":

- New and used car dealers (NAICS code 441110)
- Gas service stations (NAICS codes 447110 and 447190)
- General automotive repair shops (NAICS code 811111)
- Automotive repair shops not elsewhere classified, including air conditioning and radiator specialty shops (NAICS code 811198)
- Other motor vehicle parts manufacturing (NAICS code 336390)

This list is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. Other types of entities not listed above could also be regulated. To determine whether your entity is regulated by this action, you should carefully examine the applicability criteria found in CAA section 609, and relevant implementing regulations at 40 CFR part 82, subpart B. If you have questions regarding the applicability of this

action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

B. What acronyms and abbreviations are used in the preamble?

AHRI	Air-Conditioning, Heating, and Refrigeration Institute, formerly Air-Conditioning and Refrigeration Institute (ARI)
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
CAA	Clean Air Act
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
ETL	ETL Testing Laboratories
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
HFO	Hydrofluoroolefin
ICCSC	Interior Climate Control Standards Committee
MVACs	Motor Vehicle Air Conditioners
MY	Model Year
NAICS	North American Industrial Classification System
NTTAA	National Technology Transfer and Advancement Act
OMB	Office of Management and Budget
PRA	Paperwork Reduction Act
RFA	Regulatory Flexibility Act
SAE	SAE International, formerly the Society of Automotive Engineers
SNAP	Significant New Alternatives Policy
UMRA	Unfunded Mandates Reform Act
UL	Underwriters Laboratories

II. Background

A. CAA section 609

CAA section 609 directs the EPA to issue regulations establishing standards and requirements for the servicing of MVACs. For purposes of the regulations implementing CAA section 609, MVACs[1] are defined as equipment that use mechanical vapor compression

[1] A related definition for MVAC-like is found at 40 CFR 82.152: MVAC-like appliance means a mechanical vapor compression, open-drive compressor appliance with a full charge of 20 pounds or less of refrigerant used to cool the driver's or passenger's compartment of off-road vehicles or equipment. This includes, but is not limited to, the air-conditioning equipment found on agricultural or construction vehicles. This definition is not intended to cover appliances using R-22 refrigerant.

refrigeration to cool the driver's or passenger's compartment of any motor vehicle. This definition is not intended to encompass the hermetically sealed refrigeration systems used on motor vehicles for refrigerated cargo and the air conditioning systems on passenger buses using hydrochlorofluorocarbons (HCFC)-22 or R-22 refrigerant. For purposes of the section 609 regulations, motor vehicle is defined as any vehicle which is self-propelled and designed for transporting persons or property on a street or highway, including but not limited to passenger cars, light-duty vehicles, and heavy-duty vehicles. This definition does not include a vehicle where final assembly of the vehicle has not been completed by the original equipment manufacturer.

Under CAA section 609 and regulations that implement it, no person repairing or servicing motor vehicles for consideration (e.g., payment or bartering) may perform any service on an MVAC that involves the refrigerant[2] without properly using approved refrigerant recovery or recovery and recycling equipment, and no such person may perform such service for consideration unless such person has been properly trained and certified. Section 609 also restricts the sale of class I and class II substances for use as a refrigerant in MVACs in containers of 20 pounds or less, except to certified technicians. Class I substances (chlorofluorocarbons (CFCs), halons, carbon tetrachloride, methyl chloroform, methyl bromide, hydrobromofluorocarbons, and chlorobromomethane) and class II substances (HCFCs) are ozone-depleting compounds and are listed in 40 CFR part 82, subpart A, Appendix A and Appendix B, respectively.

Regulations issued under CAA section 609, codified at 40 CFR part 82, subpart B,

[2] Section 609(b)(1) defines the term "refrigerant," "[a]s used in this section", to mean "any class I or class II substance used in a motor vehicle air conditioner. Effective 5 years after November 15, 1990, the term 'refrigerant' shall also include any substitute substance."

include, among other things, prohibited and required practices for persons repairing and servicing MVACs for consideration (40 CFR 82.34); requirements for refrigerant handling equipment (40 CFR 82.36); approval processes for independent standards testing organizations (40 CFR 82.38); requirements for certifications that any person servicing or repairing MVACs for consideration must submit to the EPA, and related recordkeeping requirements (40 CFR 82.42). Appendices A-F at 40 CFR part 82, subpart B, provide minimum operating requirements for equipment used for the recovery, recycling and/or recharging of refrigerant used in MVACs.

B. Major rules under CAA section 609

In 1992, the EPA published a rule (57 FR 31242; July 14, 1992) under CAA section 609 establishing standards and requirements for servicing of MVACs and restricting the sale of small containers of ozone-depleting substances. The regulations, which appear in 40 CFR part 82, subpart B, require persons who repair or service MVACs for consideration to be certified in refrigerant recovery and recycling and to properly use approved equipment when performing service involving the refrigerant. Consistent with the definition in CAA section 609(b)(1), "refrigerant" is defined in subpart B as any class I or class II substance used in MVACs, and to include any substitute substance effective November 15, 1995. The 1992 rule also defined approved refrigerant recycling equipment as equipment certified by the Administrator or an approved organization as meeting either one of the standards in 40 CFR 82.36. Such equipment extracts and recycles refrigerant or extracts but does not recycle refrigerant, allowing that refrigerant to be subsequently recycled on-site or to be sent off-site for reclamation.[3] The EPA based the regulatory equipment standards in subpart B on those developed by SAE. They cover

[3] Equipment that extracts and recycles refrigerant is referred to as recover/recycle equipment. Equipment that extracts but does not recycle refrigerant is referred to as equipment that recovers but does not recycle refrigerant, or as recover-only equipment.

service procedures for dichlorodifluoromethane (CFC-12 or R-12) recover/recycle equipment (SAE J1989, issued in October 1989), test procedures to evaluate R-12 recover/recycle equipment (SAE J1990, issued in October 1989 and revised in 1991) and a purity standard for recycled R-12 refrigerant (SAE J1991, issued in October 1989). Only equipment certified to meet the standards set forth in Appendix A at 40 CFR part 82, subpart B, or that meet the criteria for substantially identical equipment, was approved under CAA section 609 for use in the servicing of MVACs at that time.

The 1992 rule also implemented the statutory prohibition on the sale or distribution of any class I or class II substance suitable for use in MVACs that is in a container of less than 20 pounds, to anyone other than a properly trained and certified section 609 technician. The rule also contained standards by which: (1) an independent standards testing organization may apply to the agency for approval to test and certify refrigerant recycling equipment; and (2) a training and certification program may apply to the agency for approval to train and certify technicians in the proper use of refrigerant recycling equipment for MVACs. Underwriters Laboratories (UL) and Intertek (formerly ETL Testing Laboratories (ETL)) are the approved independent standards testing organizations that currently certify equipment using the standards that appear in Appendix A of 40 CFR part 82, subpart B.

Finally, the 1992 rule established recordkeeping and reporting requirements that include: certifying that only properly trained and certified individuals are repairing or servicing MVACs for consideration; certifying the use of approved recycling equipment and that each individual authorized to use the equipment has obtained the proper training and certification; and requiring that owners of approved refrigerant recycling equipment retain records demonstrating that all persons authorized to operate the equipment obtained the required certification.

In 1995, the EPA issued a rule (60 FR 21682; May 2, 1995) establishing regulatory standards, based on standards developed by SAE, which applied to certification of R-12 recover-only equipment, in Appendix B at 40 CFR part 82, subpart B. Specifically, for recover-only equipment, the agency adopted the recommended service procedure for the containment of R-12 (SAE J1989, issued in October 1989 and set forth in subpart B, Appendix B) and test procedures to evaluate recover-only equipment (SAE J2209, issued in June 1992). The definition of "approved refrigerant recycling equipment" was revised in the 1995 rule to include this recover-only equipment. UL and ETL were also approved to certify recover-only equipment. Finally, service technicians previously certified to handle recover/recycle equipment were grandfathered so that they would not have to be recertified to handle recover-only equipment.

The EPA issued a third rule under CAA section 609 in 1997 (62 FR 68026; December 30, 1997) in response to the increasing use of alternative refrigerants, particularly 1,1,1,2-tetrafluoroethane (HFC-134a or R-134a). The 1997 rule established standards and requirements for the servicing of MVACs that use any refrigerant other than R-12. The rule also stated refrigerant (whether R-12 or a substitute) recovered from motor vehicles at motor vehicle disposal facilities may be re-used in the MVAC service sector only if it has been properly recovered and recycled by persons who are either employees, owners, or operators of the facilities, or technicians certified under CAA section 609, using approved equipment. The 1997 rule also established conditions under which owners and operators of motor vehicle disposal facilities may sell refrigerant recovered from such vehicles to technicians certified under CAA section 609.

Additionally, the 1997 rule established standards for recover/recycle and recovery/recycling/recharging equipment for R-134a; recover-only equipment for R-12, R-134a,

and hydrofluoroolefin (HFO)-1234yf or R-1234yf; recycling equipment intended for use with both R-12 and R-134a; and recover-only equipment for a single refrigerant other than R-12 or R-134a. The 1997 rule established Appendices C through F at 40 CFR part 82, subpart B. Specifically, Appendix C contains standards based on SAE J2788 for recovery/recycling and recovery/recycling/recharging equipment for R-134a refrigerant. Appendix D is based upon SAE J1732 and establishes standards for recover-only equipment for R-134a. Appendix E contains standards for recover-only equipment for both R-12 and R-134a, while Appendix F establishes standards for recover-only equipment for any single refrigerant other than R-12 and R-134a.

Since the publication of the 1997 rule, the EPA has published two rules, one in 2007 (72 FR 63490; November 9, 2007) and one in 2008 (73 FR 34644; June 18, 2008), to reflect updated SAE standards. Test results from the SAE Improved Mobile Air Conditioning Cooperative Research Project,[4] an MVAC industry sponsored research project, showed that equipment certified to meet SAE J2210 and SAE J1732[5] left as much as 30% of the refrigerant in MVACs. As a result of these findings, SAE developed SAE J2788 and SAE J2810, which require that equipment be capable of recovering 95% of refrigerant from MVACs. The two rules adopted SAE J2788 and SAE J2810, which replaced SAE J2210 and SAE J1732, respectively, allowing for an increased percent of refrigerant to be recovered during servicing.

III. What is the EPA Finalizing in This Action?

The EPA is amending 40 CFR part 82, subpart B, sections 82.32, 82.36, 82.38, and 82.40 to adopt three equipment standards for the servicing of MVACs that use the refrigerant R-1234yf

[4] SAE, Improved Mobile Air Conditioning Cooperative Research Program. https://www.regulations.gov/document?D=EPA-HQ-OAR-2006-0428-0003 and https://www.regulations.gov/document?D=EPA-HQ-OAR-2008-0231-0002.

[5] SAE J2210 (HFC-134a (R-134a) Recovery/Recycling Equipment for Mobile Air-Conditioning Systems (Cancelled Nov 2010)). SAE J1732 (HFC-134a (R-134a) Refrigerant Recovery Equipment for Mobile Automotive Air-Conditioning Systems (Stabilized Nov 2011)).

by incorporating them by reference into the CAA section 609 regulations. The standards provide technical specifications for equipment used for servicing MVACs containing R-1234yf consistent with CAA section 609 regulations, codified at 40 CFR part 82, subpart B. The refrigerant R-1234yf was listed by the EPA's Significant New Alternatives Policy (SNAP) program as acceptable, subject to use conditions, in MVACs in new cars and new light-duty trucks (76 FR 17488; March 29, 2011), and in certain new heavy-duty vehicles—new medium-duty passenger vehicles, new heavy-duty pickup trucks, and new complete heavy-duty vans (81 FR 86778; December 1, 2016).

The existing regulations at 40 CFR 82.34 state that no person repairing or servicing MVACs for consideration may perform any service involving refrigerant for such MVACs without properly using equipment approved pursuant to 40 CFR 82.36. This final rule adds equipment certified to meet SAE J2843, J2851, and J3030 to the equipment approved under CAA section 609 implementing regulations to recover, recycle, and/or recharge the refrigerant R-1234yf for MVACs.

A. What are the standards the EPA is adopting?

The EPA is adopting the following three equipment standards for the servicing of MVACs that use R-1234yf:

- SAE J2843 (revised July 2019), "R-1234yf [HFO-1234yf] Recovery/Recycling/Recharging Equipment for Flammable Refrigerants for Mobile Air-Conditioning Systems;"
- SAE J2851 (revised February 2015), "Recovery Equipment for Contaminated R-134a or R-1234yf Refrigerant from Mobile Air Conditioning Systems;" and
- SAE J3030 (revised July 2015), "Automotive Refrigerant

Recovery/Recycling/Recharging Equipment Intended for use with Both R-1234yf and R-134a."

SAE J2843, J2851, and J3030 were developed by SAE, which is a global association of more than 138,000 engineers and related technical experts in the aerospace, automotive, and commercial-vehicle industries. The SAE Interior Climate Control Standards Committee (ICCSC) consists of five sub-committees: Steering, Service, Fluids, MAC Supplier, and Vehicle OEM. The SAE ICCSC includes representatives from across the MVAC industry, including system component manufacturers, automobile manufacturers, servicing equipment manufacturers, and refrigerant manufacturers. The members of each committee have expertise in that area and are responsible for the development of SAE standards or recommended practice documents. The committee has published more than 50 documents and has an HS-2900 handbook that includes standards on safety, refrigerants, components, testing, service procedures, service equipment, and training. Each of the SAE Ground Vehicle Standards (e.g., SAE J2843, J2851, and J3030) for technical specifications related to MVAC servicing undergoes a rigorous peer review process. The EPA has previously cited some of these standards in regulations.

The three SAE standards that are being adopted and incorporated by reference relate to recycling, recovery, and/or recharging of R-1234yf. R-1234yf has gained significant market share in motor vehicles since its introduction in the 2013 model year (MY). According to the 2019 EPA Automotive Trends Report, in the 2018 MY, use of R-1234yf has grown to 13 manufacturers (accounting for more than 60% of the US new vehicle fleet) and some manufacturers have implemented R-1234yf across their entire vehicle brands.[6] This increased use of R-1234yf will lead to more MVACs needing to be serviced and/or repaired compared to

[6] EPA, 2019. Automotive Trends Report. Available at: https://www.epa.gov/automotive-trends/download-automotive-trends-report.

when R-1234yf was first introduced. Adopting SAE J2843, J2851, and J3030 will assist technicians choosing to repair or service MVACs containing R-1234yf to properly use approved refrigerant handling equipment when performing any service involving the refrigerant. As R-1234yf is classified by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) as mildly flammable, the equipment meeting these standards must have electrical components deemed acceptable for exposure to refrigerants at that level of flammability, ensuring the safety of technicians. This rule also increases industry flexibility in selecting proper recovery, recycling, and recharging equipment by expanding the available options. Adoption of the standards also helps to mitigate the risk to human health and the environment by directing technicians towards equipment that should limit unintentional releases of automotive refrigerant during the service or repair of MVACs. Moreover, use of equipment that meets SAE J2843, J2851, and J3030 should reduce mixing of refrigerants. Preventing the mixing of refrigerants facilitates refrigerant recycling and reduces releases into the atmosphere. Equipment meeting the three standards are capable of near-complete recovery of refrigerant from such MVACs. Below is further description of each standard.

i. SAE J2843

SAE J2843 (revised July 2019) establishes standards for equipment that recovers, recycles, and/or recharges R-1234yf in MVACs. This standard applies to equipment intended for use with R-1234yf refrigerant only. Equipment meeting this standard must be capable of recovering refrigerant within 30 minutes, which is consistent with other SAE standards, resulting in convenience for the car owner as well as the technician. The recycling capabilities of equipment meeting SAE J2843 can return the refrigerant to the same level of purity as newly manufactured (virgin) refrigerant, ensuring that the refrigerant recharged into the system will

provide the same level of performance and durability as virgin refrigerant. This recycling allows for the continued use of recovered refrigerant. Prior to recharging an MVAC, service technicians using equipment meeting this standard can check for leaks that could be repaired to avoid refrigerant releases. Maintaining a properly charged MVAC should result in efficient operation.

ii. SAE J2851

SAE J2851 (revised February 2015) establishes minimum performance and operating standards for equipment that recovers contaminated R-134a and/or R-1234yf refrigerant from MVACs. Refrigerant recovered with this equipment cannot be recycled on-site and instead should be returned to an EPA-approved reclamation facility that will process it appropriately as per Air-Conditioning, Heating, and Refrigeration Institute (AHRI) 700 standard entitled *Specifications for Refrigerants*. Refrigerant recovery equipment should ensure adequate refrigerant recovery and reduce emissions during the removal of refrigerant from MVACs.

iii. SAE J3030

SAE J3030 (revised July 2015) establishes the minimum requirements for recovery/recycling/recharging equipment intended for use to service MVACs that contain either R-1234yf or R-134a. New equipment capable of performing any service on MVACs that involves recovery of, recycling of, or recharging with either R-134a or R-1234yf would be required to meet SAE J3030 requirements for both refrigerants. The dual-refrigerant equipment covered by this standard may be useful given that R-134a and R-1234yf are both widely used in motor vehicles in the United States. Equipment certified to J3030 are designed to prevent contamination when switching between refrigerants.

B. What is the effect of adopting these standards?

Adopting these standards will assist approved independent standards testing

organizations (currently UL and Intertek) in certifying equipment for commercial refrigerant recovery/recycling/recharging that meet the EPA's minimum performance requirements. In addition, service and repair shops would be required to use equipment certified to meet SAE J2843, J2851, and J3030 when servicing MVACs using R-1234yf.

The EPA's amendments to 40 CFR 82.36 revise paragraph (a)(7), add paragraphs (a)(8), (a)(9), (a)(10), and inserts a note following (a)(10) to add additional options to the list of approved refrigerant handling equipment. These revisions establish that servicing equipment manufactured to meet SAE J2843, J2851, or J3030 that is certified by the EPA (or by an independent standards testing organization approved by the EPA under 40 CFR 82.38) may be used for repairing or servicing MVACs consistent with 40 CFR 82.34(a)(1). The EPA is also amending 40 CFR 82.32(e)(1), 82.38, and 82.40 to include references to 40 CFR 82.36(a)(8)-(10). The revisions to 40 CFR 82.32(e)(1) update the definition of the term "properly using" to add the standards incorporated by reference at 40 CFR 82.36(a)(8)-(10) to the list of recommended service procedures and practices for the containment of refrigerant. The revisions to 40 CFR 82.38 allow independent standards testing organizations to apply for approval to certify equipment as meeting the standards incorporated by reference at 40 CFR 82.36(a)(8)-(10), as well as the currently existing standards in appendices A, B, C, D, E, and F. The revisions to 40 CFR 82.40 add the standards incorporated by reference at 40 CFR 82.36(a)(8)-(10) to the list of standards that any technician training program seeking approval must demonstrate are covered by their certification tests. It would be appropriate for approved technician training and certification programs to update their materials to reflect the standards incorporated by reference at 40 CFR 82.36(a)(8)-(10) and to submit a summary of the conforming changes to the Administrator as part of the summary required by 40 CFR 40.82(c). Current regulations at 40

CFR 82.36 contain the requirements for approved refrigerant handling equipment, including the requirement for certification of such equipment by the EPA or an independent, standards testing organization approved by the EPA. The Agency maintains a list of approved equipment by manufacturer and model at: *https://www.epa.gov/mvac/section-609-certified-equipment*.

Lastly, the EPA is amending Appendix F to subpart B of part 82. This appendix contains specifications for recovery equipment that extracts a single, specific refrigerant other than those named in the other appendices to subpart B. Since the EPA is adding standards for recovery equipment for MVACs containing R-1234yf, the EPA is noting that as appropriate, in this appendix.

Existing EPA regulations that are not modified by this action require stakeholders who chose to service or repair vehicles that use R-1234yf to use certified equipment. Equipment certified to meet SAE J2843, J2851, and J3030 will provide additional flexibility for industry stakeholders and protect human health and the environment. Use of equipment that meets the three standards also supports compliance with the prohibition in section 608(c) of the CAA on knowingly venting or otherwise knowingly releasing or disposing of refrigerant in a manner that allows the refrigerant to enter the environment in the course of servicing, maintaining, repairing, or disposing of an appliance. In addition, proper handling of R-1234yf is important given it is listed by ASHRAE as an A2L refrigerant meaning it is mildly flammable.[7]

IV. Incorporation by Reference

The EPA is adopting the following three standards by incorporating them by reference—

[7] American National Standards Institute (ANSI)/ASHRAE Standard 34—2016 assigns a safety group classification for each refrigerant which consists of two alphanumeric characters (e.g., A2 or B1). The capital letter indicates the toxicity (i.e., A=no evidence of toxicity, B=signifies toxicity) and the numeral denotes the flammability. Refrigerants with flammability classification ''3'' are highly flammable while those with flammability classification ''2'' are less flammable and those with flammability classification ''2L'' are mildly flammable.

SAE J2843 (revised July 2019), "R-1234yf (HFO-1234yf) Recovery/Recycling/Recharging Equipment for Flammable Refrigerants for Mobile Air-Conditioning Systems;" SAE J2851 (revised February 2015) "Recovery Equipment for Contaminated R-134a or R-1234yf Refrigerant from Mobile Automotive Air-Conditioning Systems;" and SAE J3030 (revised July 2015) "Automotive Refrigerant Recovery/Recycling/Recharging Equipment Intended for use with Both R-1234yf and R-134a." Section III.A. of this preamble discusses these standards in greater detail. This action approves and provides technical specifications for MVAC recovery/recycling/recharging equipment so that it may be used for R-1234yf under CAA section 609 and 40 CFR part 82, subpart B.

Incorporation by reference allows Federal agencies to comply with the requirement to publish rules in the **Federal Register** and the Code of Federal Regulations by referring to material already published elsewhere. The legal effect of incorporation by reference is that the material is treated as if it were published in the **Federal Register** and Code of Federal Regulations.

SAE J2843, J2851, and J3030 are available for purchase by mail at: SAE Customer Service, 400 Commonwealth Drive, Warrendale, PA 15096-0001; Telephone: 1-877-606-7323 in the U.S. or Canada (other countries dial 1-724-776-4970); Internet address for SAE J2843: *https://www.sae.org/standards/content/j2843_201907*; Internet address for SAE J2851: *https://www.sae.org/standards/content/j2851_201502* ; Internet address for SAE J3030: *https://www.sae.org/standards/content/j3030_201507*. The cost of SAE J2843, SAE J2851, and SAE J3030 is $83 each for an electronic or hard copy. The cost of obtaining these standards is not a significant financial burden for manufacturers of MVACs or recovery equipment manufacturers and purchase is not required for those selling, installing, or using the refrigerant

handling equipment covered by these standards. Therefore, the EPA concludes that SAE J2843, SAE J2851, and SAE J3030 are reasonably available.

V. Response to Comments

The EPA received eight comments on the proposed rule from individuals and organizations with various interests in the MVAC industry. Most commenters supported the proposal to adopt SAE J2843, J2851, and J3030 by incorporating them by reference into the regulations implementing CAA section 609. A few commenters also suggested changes the EPA should consider incorporating into the CAA section 609 regulations or requested additional information concerning the three standards. Some of the commenters raised issues that are outside the scope of this rulemaking and the EPA is not providing a specific response to those comments. We have grouped comments together and responded to the issues raised by the commenters in the sections that follow.

A. Support for adoption of the standards

Comment: Seven commenters supported the proposal to adopt the three SAE standards. One commenter stated that adopting the standards would reduce the amount of refrigerant currently being used and needed to meet future demand. One commenter stated that adopting the standards would establish clear guidance for the automotive repair sector to ensure the equipment and procedures being used effectively support the overall goal of reducing the global warming impact of air conditioning. Another commenter stated that having proper equipment, usage/handling of the materials/vapors, and being certified to use the equipment is paramount to environmental protection.

Response: EPA acknowledges the comments and is adopting the three standards as proposed.

B. Concerns regarding SAE J3030

Comment: One commenter expressed support for the adoption of SAE J2843 and J2851, but objected to the adoption of SAE J3030, which covers R-134a and R-1234yf dual refrigerant equipment. The commenter stated that by allowing machines to service both R-134a and R-1234yf MVACs there is potential for misuse and refrigerant cross-contamination, which would be problematic for service providers, consumers, original equipment manufacturers (OEMs), and reclaimers due to flammability concerns. The commenter also stated that any environmental benefit from the use of a lower global warming potential (GWP) refrigerant and carbon dioxide (CO_2)-equivalent credits[8] generated by OEMs for mileage allowance from the transition to R-1234yf will be lost if R-134a is used to service R-1234yf MVACs. Additionally, the commenter also stated that the value of the refrigerant for recovery, recycling, and recharging would be lost as it would be impossible to separate the refrigerants from one another.

Response: The EPA acknowledges the commenter's support for the adoption of SAE J2843 and J2851. With regard to the commenter's concerns regarding SAE J3030, the EPA does not agree that the use of equipment certified to meet SAE J3030 would result in cross-contamination of MVACs. SAE J3030 was developed to prevent the misuse and tampering of servicing equipment, the mixing of R-134a and R-1234yf, and the contamination of MVACs by technicians while a significant number of vehicles with R-134a are in use and R-1234yf is being used in an increasing number of new motor vehicles. A similar standard was developed to certify equipment intended for use with both R-12 to R-134a MVACs in 1995: *SAE J1770, Automotive Refrigerant Recovery/Recycling Equipment Intended for use With Both R12 and R134a*

[8] CO_2 equivalence (CO_2e) expresses the global warming potential of a greenhouse gas (for A/C, hydrofluorocarbons) by normalizing that potency to CO_2's. Thus, the maximum A/C credit for direct emissions is the equivalent of 18.8 grams/mile of CO_2 for cars.

(Cancelled November 2010). SAE J1770 established specific minimum equipment requirements for recovery/recycling equipment intended for use with both R-12 and R-134a in a common refrigerant circuit that had been directly removed from and intended for reuse in MVACs. We have no information suggesting that proper use of equipment certified to SAE J1770 led to any increase in emissions of R-12 or R-134a. Based on our experience with SAE J1770, we are confident that proper use of equipment certified to SAE J3030 also will not lead to any increase in emissions of R-134a.

The EPA acknowledges the potential safety hazards, flammability risks, and potential for cross-contamination when multiple refrigerants are used to service MVACs. The agency also acknowledges the potential loss of environmental benefits if a refrigerant other than the one for which the vehicle is designed is used to service the system. However, incorporating SAE J3030 by reference does not alter the regulatory requirements governing which refrigerants can be used for servicing. Instead, as explained below, SAE J3030 was specifically designed to minimize cross contamination and thus preserve environmental benefits. The commenter's concern about a potential loss of CO_2e credits is also misplaced. Under EPA's light-duty Greenhouse Gas (GHG) standards for MY 2017-2025, vehicle manufacturers may generate credits toward compliance with the CO_2e GHG emission standards, both for improving the efficiency of MVACs and for reducing MVAC HFC emissions by reducing leakage or using alternative, lower-GWP refrigerants. (see 40 CFR 86.1865-12 and 1867-12). Any credits a manufacturer may generate at the time of vehicle production based on the use of a specific MVAC refrigerant are not affected by actions taken later at facilities servicing those vehicles. However, the expected GHG emission reductions from the GHG program can only be achieved if the proper refrigerant is used throughout the useful life of the vehicles, so avoiding cross contamination of the servicing

equipment maintains the intended benefits of the GHG program when vehicle MVAC systems are recharged.

SAE J3030 was developed to mitigate potential risks and concerns by establishing equipment specifications and testing procedures for certifying laboratories to ensure that equipment does not cross contaminate refrigerant above specified limits when used under normal operating conditions. For example, as discussed in section 3.3 of the standard, equipment certified to SAE J3030 "must meet all feature content and functional requirements of both SAE J2788 for R-134a and SAE J2843 for R-1234yf and pass all test requirements of these standards. In addition, it must pass a changeover test to determine that any refrigerant cross-contamination is within the limits of this standard." Additionally, section 4.1.1 of the standard describes the requirement for SAE J3030-certified equipment to have "an electronically-controlled electro-mechanical lockout to permit the recovery, recycle, recharge sequence of either R-1234yf or R-134a. If [the equipment determines that the MVAC system] does not contain R-1234yf or R-134a in the required purity, it shall not permit refrigerant recovery." For these reasons, we conclude that proper use of equipment certified to SAE J3030 is not related to GHG credits generated by auto manufacturers and will not lead to a loss in either the expected environmental benefits of the GHG program or CO_2e credits.

C. Other suggestions and concerns

Comment: One commenter noted a technical error in the title of SAE J2843 in the proposed regulatory text at 40 CFR 82.36(a)(8).

Response: The EPA appreciates this comment and has corrected the title of SAE J2843 in the final rule.

Comment: One commenter would like to see more enforcement of the CAA 609

regulations as they pertain to technicians and service shop owners. The commenter requested that the EPA require that all certified AC shops have their technicians certified under the ASE Refrigerant Recovery and Recycling Program and provide proof when applying for their business license. The commenter also requested that the EPA require that proper storage procedures are in place for refrigerants. Additionally, the commenter voiced concern about the cost to service centers that would need to purchase new equipment.

Response: The EPA acknowledges the commenter's suggestions. Comments concerning enforcement, technician certification, and refrigerant storage procedures are beyond the scope of this rulemaking and thus no response to comments on those topics is required. In this action, the EPA is solely adopting by incorporating by reference the three existing SAE standards that include guidelines and requirements for equipment designed to service R-1234yf MVACs. The EPA did not propose and is not requiring in this final rule that service shops service R-1234yf MVACs. Prior to the issuance of this final rule, there was and continues to be certified equipment that can be used by service shops that choose to service MVACs with R-1234yf and do not wish to use equipment that meets the standards EPA is adopting. This rule provides additional flexibility to service shops by expanding the universe of equipment that may be certified for use by technicians. As such, it does not impose costs on service shops. With regards to the commenter's proposal that the EPA require technicians to be certified under the ASE Refrigerant Recovery and Recycling Program, as noted above, the EPA did not propose and is not making any changes to the technician certification requirements in this final rule; EPA's existing regulations currently require that all technicians who repair or service MVACs for consideration be trained and certified by one of the EPA-approved technician training and certification programs, which are listed at https://www.epa.gov/mvac/section-609-technician-

training-and-certification-programs.

Comment: One commenter inquired about studies regarding efficiency of the standards, impacts of the standards for vehicle manufacturers and service centers, and the environmental benefits of recycling versus discarding R-1234yf.

Response: With regard to the question regarding efficiency of the standards, we assume the commenter is asking about the efficiency rate achieved by the standards. As discussed above in section II.B of this rule, SAE J2843 includes requirements established in SAE J2788 that should result in an efficient 95% refrigerant recovery rate during MVAC servicing. Research showed that equipment certified to meet SAE J2210 and SAE J1732[9] left as much as 30% of the refrigerant in MVACs. As a result of these findings, SAE developed SAE J2788 and SAE J2810, which require that equipment be capable of recovering 95% of refrigerant from MVACs. Regarding impacts on vehicle manufacturers and service centers, this action is intended to provide additional flexibility for industry stakeholders that wish to select recovery and recycling equipment certified to the three SAE standards. This action should not affect vehicle manufacturers and does not require the purchase of R-1234yf MVAC servicing equipment. Instead it adopts existing SAE standards that include guidelines and requirements for equipment designed to service R-1234yf MVACs safely and efficiently. Regarding the question about the benefits of recycling versus discarding R-1234yf, the EPA did not propose and is neither requiring nor prohibiting either destruction or recycling of R-1234yf in this final rule, and thus this issue is not relevant to this rulemaking. Destruction of the refrigerant remains a viable option for service shops (e.g., service shops could recover and send for destruction the

[9] SAE J2210 (HFC-134a (R-134a) Recovery/Recycling Equipment for Mobile Air-Conditioning Systems (Cancelled Nov 2010)). SAE J1732 (HFC-134a (R-134a) Refrigerant Recovery Equipment for Mobile Automotive Air-Conditioning Systems (Stabilized Nov 2011)).

refrigerant if so desired). Under CAA section 609, all refrigerant, including R-1234yf, must be properly recycled or reclaimed before it can be reused, even if it is being returned to the vehicle from which it was removed. We understand that most service shops today choose to recover and either recycle or send for reclamation MVAC refrigerants. Additionally, CAA section 608 and its implementing regulations prohibit knowingly venting or otherwise knowingly releasing or disposing of refrigerants such as R-1234yf when maintaining, servicing, repairing, or disposing of air conditioning or refrigeration equipment, including MVACs. When an MVAC system enters the waste stream, the final person in the disposal chain must recover the refrigerant, or verify using a signed statement or contract that the refrigerant has been recovered, prior to disposal. Additional information and requirements regarding safe disposal is available at https://www.epa.gov/section608/stationary-refrigeration-safe-disposal-requirements.

Comment: One commenter requested that the EPA rely more on the International Laboratory Accreditation Cooperation accreditation framework for assessments, monitoring, and granting accreditations. The commenter further requested that the EPA collaborate with DOC/NIST/Standards Coordination Office in order to provide consistent guidance.

Response: The EPA also acknowledges the commenter's additional suggestions; however, they are outside the scope of this rulemaking, so no response is required.

Comment: One commenter expressed support for adoption of the three standards and stated that they are appropriate in that they help ensure the efficacy of MVAC refrigerant recycling equipment. The commenter, however, stated that the EPA does not have authority under CAA section 609 to mandate the purchase and use of R-1234yf servicing equipment and strongly objected to any mandate that requires the purchase and use of R-1234yf MVAC servicing equipment by dealerships because "R-1234yf is not an [ozone-depleting substance

(ODS)]." The commenter also objected to the proposed changes to the definition of "properly using" that they asserted would require the use of R-1234yf MVAC servicing equipment in conformity with the regulations at 40 CFR part 82, subpart B. The commenter asserted that the rule "lacks both a sufficient legal basis and any plausible cost/benefit justification" and that market-based decisions alone should be considered.

Response: The EPA acknowledges the commenter's support for the adoption of the three standards. In this action, the EPA is adopting and incorporating by reference the three existing SAE standards to provide additional flexibility for stakeholders who wish to select recovery and recycling equipment certified to the three standards. The EPA did not propose and is not mandating in this final rule that any person or dealership that services vehicles use R-1234yf or purchase or use R-1234yf MVAC servicing equipment. The commenter's assertion that the EPA does not have authority to mandate the purchase and use of R-1234yf MVAC servicing equipment is thus not relevant to this action and requires no further response. CAA section 609 gives the EPA authority to promulgate regulations establishing standards and requirements regarding the servicing and repair of MVAC and this action is taken pursuant to that authority.[10]

For service shops that choose to service MVACs, including R-1234yf MVACs, the regulations requiring technicians to use certified equipment prior to service or repair have been in place since 1992 (57 FR 31242; July 14, 1992). As mentioned above in section II.B, the regulations issued in 1992 under CAA section 609, codified at 40 CFR part 82, subpart B, include, among other things, a definition of "refrigerant" that includes any class I or class II substance used in an MVAC, as well as any substitute substance effective November 15, 1995

[10] The commenter also referenced a final rule published under CAA section 608 (85 FR 14150, March 11, 2020). EPA notes that the March 2020 final rule issued by the agency's National Recycling and Emission Reduction Program is focused on refrigerant management requirements and the scope of EPA's authority under CAA section 608, which is a distinct statutory provision from CAA section 609.

(40 CFR 82.32(f)); prohibited and required practices for persons repairing and servicing MVACs for consideration (40 CFR 82.34); requirements for refrigerant handling equipment (40 CFR 82.36); approval processes for independent standards testing organizations (40 CFR 82.38); requirements for certifications that any person servicing or repairing MVACs for consideration must submit to the EPA, and related recordkeeping requirements (40 CFR 82.42). The EPA has neither reopened nor requested comment on these requirements, approval processes, and definition . This action does not alter the requirement to comply with the provisions in 40 CFR part 82, subpart B. Instead, it expands the types of equipment that can be certified to service vehicles that use R-1234yf. As such, this action provides a benefit to stakeholders by expanding the options available to and providing additional flexibility for stakeholders that choose to service vehicles that use R-1234yf. Because this action does not impose additional requirements but instead provides additional options to stakeholders, there are no compliance costs associated with this action and the commenter's implicit suggestion that the benefits don't justify the costs is thus misplaced. Additionally, the EPA interprets the comment regarding market-based decisions to mean that the market alone should dictate whether service shops purchase and use R-1234yf MVAC servicing equipment, rather than a legal mandate. As mentioned earlier, the EPA did not propose and is not mandating in this final rule that any person or dealership that services vehicles use R-1234yf or purchase or use R-1234yf MVAC servicing equipment. Rather, existing EPA regulations that are not modified by this action already require stakeholders who chose to service or repair vehicles that use R-1234yf to use certified equipment.

Regarding the definition of "properly using" at 40 CFR 82.32(e), this final rule updates the definition of properly using to add the three standards being incorporated by reference at 40

CFR 82.36(a)(8)-(10) to the list of recommended service procedures and practices for the containment of refrigerant. As mentioned above, the agency is not mandating in this final rule that service shops purchase or use R-1234yf MVAC servicing equipment.

VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders*.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.

B. Executive Order 13771: Reducing Regulation and Controlling Regulatory Costs

This action is not an Executive Order 13771 regulatory action because this action is not significant under Executive Order 12866.

C. *Paperwork Reduction Act (PRA)*

This action does not impose any new information collection burden under the PRA. OMB has previously approved the information collection activities contained in the existing regulations and has assigned OMB control number 2060-0247. This rule contains no new requirements for reporting or recordkeeping.

D. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule

relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. This action adopts and incorporates by reference three existing technical standards developed by SAE for equipment that recovers, recycles, and/or recharges R-1234yf in MVACs. We have therefore concluded that this action will have no net regulatory burden for all directly regulated small entities.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain any Federal mandates or unfunded mandates as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local or tribal governments or the private sector.

F. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

G. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this action.

H. Executive Order 13045: Protection of Children from Environmental Health and Safety Risks

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the

environmental health or safety risks addressed by this action present a disproportionate risk to children. The EPA has not conducted a separate analysis of risks to infants and children associated with this final rule.

I. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

J. National Technology Transfer and Advancement Act (NTTAA)

This action involves technical standards for the servicing of MVACs that use R-1234yf. The EPA is incorporating by reference three industry consensus standards: SAE J2843 "R-1234yf (HFO-1234yf) Recovery/Recycling/Recharging Equipment for Flammable Refrigerants for Mobile Air-Conditioning Systems"; SAE J2851 "Recovery Equipment for Contaminated R-134a or R-1234yf Refrigerant from Mobile Automotive Air-Conditioning Systems"; and SAE J3030 "Automotive Refrigerant Recovery/Recycling/Recharging Equipment Intended for use with Both R-1234yf and R-134a." Specifically, these standards are:

1. *SAE J2843: R-1234yf (HFO-1234yf) Recovery/Recycling/Recharging Equipment for Flammable Refrigerants for Mobile Air-Conditioning Systems (revised July 2019).* This standard applies to refrigerant handling equipment intended for use with R-1234yf refrigerant from MVACs only. It establishes requirements for equipment used to recover, recycle, and/or recharge R-1234yf. This standard is available at *https://www.sae.org/standards/content/j2843_201907*.

2. *SAE J2851: Recovery Equipment for Contaminated R-134a or R-1234yf Refrigerant from Mobile Automotive Air-Conditioning Systems (revised February 2015).* This standard applies to recovery equipment that removes contaminated R-134a and/or R-1234yf from

MVACs. This standard is available at *https://www.sae.org/standards/content/j2851_201502*.

3. *SAE J3030: Automotive Refrigerant Recovery/Recycling/Recharging Equipment Intended for use with Both R-1234yf and R-134a (revised July 2015).* This standard establishes the minimum equipment requirements for recovery/recycling/recharging equipment intended for use with both R-1234yf and R-134a in a common refrigerant circuit that has been directly removed from, and is intended for reuse, in MVACs. This standard is available at *https://www.sae.org/standards/content/j3030_201507*.

These standards may be purchased by mail at: SAE Customer Service, 400 Commonwealth Drive, Warrendale, PA 15096-0001; by telephone: 1-877-606-7323 in the United States or 1-724-776-4970 outside the United States or in Canada. The cost of SAE J2843, SAE J2851, and SAE J3030 is $81 each for an electronic or hard copy. The cost of obtaining these standards is not a significant financial burden for manufacturers of MVACs and purchase is not required for those selling, installing, or servicing MVACs. Therefore, the EPA concludes that SAE J2843, SAE J2851, and SAE J3030 are reasonably available.

K. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

This action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). This action adopts and incorporate by reference three technical standards for equipment that recovers, recycles, and/or recharges R-1234yf in MVACs. The proper use of servicing equipment prevents the intentional release of refrigerant to the environment and decreases the amount of such emissions to which all affected populations are exposed.

L. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a "major rule" as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 82

Environmental protection, Administrative practice and procedure, Air pollution control, Incorporation by reference, Recycling, Reporting and recordkeeping requirements, Stratospheric ozone layer.

Jane Nishida,
Acting Administrator.

For the reasons set out in the preamble, 40 CFR part 82 is amended as follows:

PART 82 - PROTECTION OF STRATOSPHERIC OZONE

1. The authority citation for part 82 continues to read as follows:

Authority: 42 U.S.C. 7414, 7601, 7671 - 7671q.

Subpart B - Servicing of Motor Vehicle Air Conditioners

2. Add § 82.31 to read as follows:

§ 82.31 Incorporation by reference.

(a) Certain material is incorporated by reference into this subpart part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. You can obtain the material from the sources listed below. You may inspect a copy of the approved material at U.S. EPA's Air and Radiation Docket; EPA West Building, Room 3334, 1301 Constitution Ave. NW., Washington, DC, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fedreg.legal@nara.gov or go to www.archives.gov/federal-register/cfr/ibr-locations.html.

(b) SAE International. SAE Customer Service, 400 Commonwealth Drive, Warrendale, PA 15096-0001 USA; E-mail: CustomerService@sae.org; Telephone: 1-877-606-7323 (U.S. and Canada only) or 1-724-776-4970 (outside the U.S. and Canada); Internet address: *http://store.sae.org/dlabout.htm*.

(1) SAE J2843™. R-1234yf (HFO-1234yf) Recovery/Recycling/Recharging Equipment for Flammable Refrigerants for Mobile Air-Conditioning Systems. Revised July 2019; IBR approved for § 82.36(a).

(2) SAE J2851. Recovery Equipment for Contaminated R-134a or R-1234yf Refrigerant from Mobile Automotive Air Conditioning Systems. Revised February 2015; IBR approved for §

82.36(a).

(3) SAE J3030. Automotive Refrigerant Recovery/Recycling/Recharging Equipment Intended for use with Both R-1234yf and R-134a. Issued July 2015 (note: SAE J3030 heading says "revised"); IBR approved for § 82.36(a).

3. Amend §82.32 by revising paragraph (e)(1) to read as follows:

§ 82.32 Definitions.

*****

(e) *Properly using*. (1) Properly using means using equipment in conformity with the regulations set forth in this subpart, including but not limited to the prohibitions and required practices set forth in § 82.34, and the recommended service procedures and practices for the containment of refrigerant set forth in § 82.36(a) and appendices A, B, C, D, E and F to this subpart, as applicable. In addition, this term includes operating the equipment in accordance with the manufacturer's guide to operation and maintenance and using the equipment only for the controlled substance for which the machine is designed. For equipment that extracts and recycles refrigerant, properly using also means to recycle refrigerant before it is returned to a motor vehicle air conditioner or MVAC-like appliance, including to the motor vehicle air conditioner or MVAC-like appliance from which the refrigerant was extracted. For equipment that only recovers refrigerant, properly using includes the requirement to recycle the refrigerant on-site or send the refrigerant off-site for reclamation.

*****

4. Amend § 82.36 by revising paragraph (a)(7) and by adding paragraphs (a)(8) through (10) to read as follows:

§ 82.36 Approved refrigerant handling equipment.

(a) ***

(7) Equipment that recovers but does not recycle refrigerants other than CFC-12, HFC-134a, and HFO-1234yf must meet the standards set forth in Appendix F of this subpart (Recover-Only Equipment that Extracts a Single, Specific Refrigerant Other Than CFC-12, HFC-134a, or HFO-1234yf).

(8) Equipment that recovers and recycles HFO-1234yf refrigerant from MVACs and recharges MVAC systems with HFO-1234yf refrigerant must meet the standards set forth in SAE J2843 (incorporated by reference, see § 82.31).

(9) Equipment that recovers but does not recycle contaminated HFC-134a and/or HFO-1234yf refrigerant from MVACs must meet the standards set forth in SAE J2851 (incorporated by reference, see § 82.31).

(10) Equipment that recovers, recycles, and recharges both HFO-1234yf and R-134a from MVACs must meet the standards set forth in SAE J3030 (incorporated by reference, see § 82.31).

*****

5. Amend § 82.38 by revising paragraph (a) to read as follows:

§ 82.38 Approved independent standards testing organizations.

(a) Any independent standards testing organization may apply for approval by the Administrator to certify equipment as meeting the standards in § 82.36(a) and appendices A, B, C, D, E and F to this subpart, as applicable. The application shall be sent to: MVACs Recycling Program Manager, Stratospheric Protection Division (6205T), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460.

*****

6. Amend § 82.40 by revising paragraph (a)(2)(i) to read as follows:

§ 82.40 Technician training and certification.

(a) ***

(2) ***

(i) The standards established for the service and repair of MVACs and MVAC-like appliances as set forth in § 82.36(a) and appendices A, B, C, D, E and F to this subpart. These standards relate to the recommended service procedures for the containment of refrigerant, extraction equipment, extraction and recycle equipment, and the standard of purity for refrigerant in motor vehicle air conditioners.

*****

7. Amend Appendix F to subpart B of part 82 by revising the appendix heading, the "Foreword" section, sections 1 and 3.1, and the "Application" section to read as follows:

APPENDIX F TO SUBPART B OF PART 82 – STANDARD FOR RECOVER-ONLY EQUIPMENT THAT EXTRACTS A SINGLE, SPECIFIC REFRIGERANT OTHER THAN CFC-12, HFC-134a, OR R-1234yf.

Foreword

These specifications are for equipment that recovers, but does not recycle, any single, specific automotive refrigerant other than CFC-12, HFC-134a, or HFO-1234yf, including a blend refrigerant.

1. Scope

The purpose of this standard is to provide equipment specifications for the recovery of any single, specific refrigerant other than CFC-12, HFC-134a, or HFO-1234yf, including a blend refrigerant, which is either (1) to be returned to a refrigerant reclamation facility that will process the refrigerant to ARI Standard 700-93 or equivalent new product specifications at a minimum, or (2) to be recycled in approved refrigerant recycling equipment, or (3) to be destroyed. This

standard applies to equipment used to service automobiles, light trucks, and other vehicles with similar air conditioning systems.

* * * * *

3.1 The equipment must be able to extract from a mobile air conditioning system the refrigerant other than CFC-12, HFC-134a, or HFO-1234yf to which the equipment is dedicated.

* * * * *

Application

The purpose of this standard is to provide equipment specifications for the recovery of any refrigerant other than CFC-12, HFC-134a, or HFO-1234yf for return to a refrigerant reclamation facility that will process it to AHRI Standard 700 (or for recycling in other EPA approved recycling equipment, in the event that EPA in the future designates a standard for equipment capable of recycling refrigerants other than CFC-12, HFC-134a, or HFO-1234yf).

*****

Message

From: POLITICO Pro [alert@email.politicopro.com]
Sent: 3/1/2021 7:35:22 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Citi pledges to stop financing greenhouse gas emissions

Citi pledges to stop financing greenhouse gas emissions

By Lorraine Woellert

03/01/2021 02:32 PM EST

Citigroup CEO Jane Fraser, on her first day leading the bank, said the company will aim to end the financing of greenhouse-gas-emitting projects and companies by 2050.

The announcement follows talks with shareholders who had filed a resolution asking the company to disclose whether and how it would reduce emissions from financing. The investor groups — As You Sow, Mercy Investment Services, Boston Common Asset Management, Arjuna Capital, Presbyterian Church USA and the School Sisters of Notre Dame Cooperative Fund — withdrew the resolution last week.

Joining the crowd: With the announcement, Citigroup joins Morgan Stanley, Bank of America and JPMorgan Chase in setting targets to reduce financed emissions in line with the Paris Agreement on climate.

"It's high time banks are accountable for the emissions of their lending portfolios—including the financing of fossil fuel projects," said Natasha Lamb, managing partner of Arjuna Capital, in a written statement.

In a blog post, Fraser said the bank, which financed and facilitated $164 billion in low-carbon projects between 2014 and 2019, has committed to another $250 billion in environmental transactions by 2025. The bank has also reached its goal of purchasing 100 percent renewable electricity.

Who's next: As You Sow President Danielle Fugere called out Wells Fargo and Goldman Sachs for lagging their peers.

The group is in discussions with Goldman Sachs over a net-zero resolution. Wells Fargo has asked the Securities and Exchange Commission to keep a similar proposal off its proxy ballot, Fugere said.

The SEC has said that companies including Citigroup, Exxon Mobil and Pfizer have no legal basis to exclude shareholder proposals related to racial equity, lobbying and even federal subsidies for coronavirus vaccine development.

To view online:
https://subscriber.politicopro.com/financial-services/whiteboard/2021/03/citi-pledges-to-stop-financing-greenhouse-gas-emissions-3987303

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Message

From: Carbonell, Tomas [Carbonell.Tomas@epa.gov]
Sent: 3/2/2021 2:36:16 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: FW: FYI - Round 4 SO2 NAAQS Designations Rule
Attachments: Rd 4 SO2 Designations OAR Briefing_Final.docx

Hi Joe, here's the briefing memo and a short synopsis below – thanks

Tomás

From: Carbonell, Tomas
Sent: Monday, March 1, 2021 1:24 PM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: FW: FYI - Round 4 SO2 NAAQS Designations Rule

Hi Joe, here is the info on the Round 4 SO2 NAAQS area designations rule we just discussed. Thanks,

Tomás

From: Carbonell, Tomas
Sent: Monday, February 22, 2021 10:15 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: FYI - Round 4 SO2 NAAQS Designations Rule

Hi Joe, hope you managed to salvage at least some of the weekend!

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Tomás

Message

From: DeLuca, Isabel [DeLuca.Isabel@epa.gov]
Sent: 3/18/2021 2:23:29 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]; Millett, John [Millett.John@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]
CC: Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Stevens, Katherine [stevens.katherine@epa.gov]
Subject: RE: Comms weekly
Attachments: OAR Comms Outlook 3.17.21.docx

Attaching the draft comms outlook for review during this meeting.

-----Original Appointment-----
From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Friday, January 29, 2021 3:53 PM
To: Goffman, Joseph; Campbell, Ann; Millett, John; DeLuca, Isabel; Nunez, Alejandra; Kim, Eun
Cc: Carbonell, Tomas; Stevens, Katherine
Subject: Comms weekly
When: Thursday, March 18, 2021 10:30 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

Microsoft Teams meeting

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Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/3/2021 11:59:41 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]
Subject: READING: Briefing Materials for February 4, 2021
Attachments: Goffman Joseph Calendar.ics; Climate web page comms plan; 2.4.20 ALA Goffmanv3.docx; 2021.2.4 OAR Fuels Team biweekly agenda.docx; RFS 2021 Roadmap for OAR.docx; Status of the O&G Sector Briefing.docx; Outreach ideas for 2021 O&G rules.docx

Joe, please find attached your materials for tomorrow's meeting.

Goffman, Joseph Calendar
Goffman.Joseph@epa.gov
On Thursday, February 4, 2021
Time zone: (UTC-05:00) Eastern Time (US & Canada)
(Adjusted for Daylight Saving Time)

February 2021

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

Busy | Tentative | Free
Out of Office | Working Elsewhere | Outside of Working Hours

February 2021

Thu, Feb 4

Before 8:00 AM	**Free**
8:00 AM – 8:30 AM	**Free**
8:30 AM – 9:00 AM	Check-In
9:00 AM – 9:15 AM	**Free**
9:15 AM – 10:00 AM	Air Issues Meeting
10:00 AM – 10:30 AM	Management Roundtable
10:30 AM – 11:00 AM	Comms weekly (materials attached)
11:00 AM – 12:00 PM	Fuels Bi-weekly (materials attached)
11:30 AM – 12:30 PM	ALI & GINA: Power Sector Meeting (materials forthcoming)

12:00 PM – 1:00 PM	Lunch/Management time
12:30 PM – 1:00 PM	EPA/NHTSA GHG Modeling Meeting (checking with Sarah for any background)
1:00 PM – 2:00 PM	Background interview (instructions & background in meeting invite)
2:00 PM – 2:45 PM	Oil and Natural Gas (O&G) Sector (materials attached)
2:45 PM – 3:30 PM	HOLD || American Lung Assoc./American U. Event (materials attached)
3:30 PM – 4:00 PM	One-on-One with Chris Grundler
4:00 PM – 4:30 PM	One on One with Casey Katims
4:30 PM – 5:00 PM	One-on-One with Jon Edwards
5:00 PM – 5:30 PM	**Free**
5:30 PM – 6:00 PM	Management Time
After 6:00 PM	**Free**

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

Message

From: Millett, John [Millett.John@epa.gov]
Sent: 2/3/2021 8:48:22 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]
CC: DeLuca, Isabel [DeLuca.Isabel@epa.gov]; Stevens, Katherine [stevens.katherine@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]; Shoaff, John [Shoaff.John@epa.gov]; Stevens, Katherine [stevens.katherine@epa.gov]
Subject: Climate web page comms plan
Attachments: comms plan -- climate web relaunch OARdraftv2.docx

Hi All – tomorrow afternoon, we'll be talking with Lindsay and the OPA team about the relaunch of the climate page. Attached is our draft of the comms plan for your review and input, and below is the current mock-up of the page that some of you have already seen. Our comms weekly meeting is tomorrow morning at 10:30, and we can talk about this and other upcoming items then. There are no decisions yet on timing or manner of the web page rollout, and we'll update you all on where we stand after tomorrow's discussion w/ OPA.

Thanks –

John

~~~~~~~~~~~~~~~~~~

John Millett
Director, OAR Communications
Desk: 202-564-2903
Cell: 202-510-1822

You can view the draft/staged site at: https://wcms.epa.gov/node/37925/revisions/539421/view . It will prompt you for your LAN user name and password.
~~~~~~~~~~~~~~~~~~

Climate Change

Executive Actions:

Climate Crisis Fact Sheet - 1/27/21

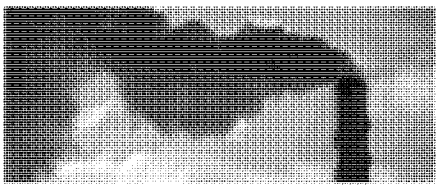
Executive Order: Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis - 1/20/21

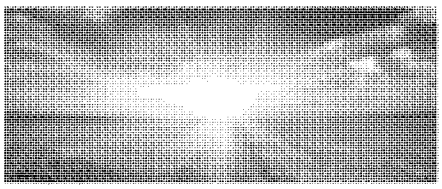
List of Agency Actions for Review - 1/20/21

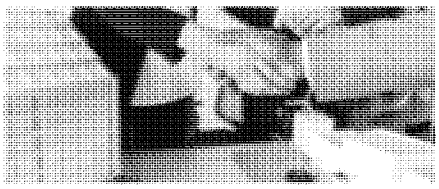
EPA is currently developing the Climate Change website. Please check back in the coming weeks for new content.

Through regulations and partnerships with businesses, consumers, and state, local, and tribal governments, EPA tracks and reports greenhouse gas emissions, leverages sound science and reduces emissions to combat climate change.

The Biden Administration will ensure we meet the demands of science, while empowering American workers and businesses to lead a clean energy revolution. — The White House







Climate Data, Reports, and Resources

- Greenhouse Gas (GHG) Emissions
- Energy and the Environment
- Energy Resources for State, Local, and Tribal Governments
- Climate Change Indicators
- Climate Change Research

Reducing Emissions and Addressing Impacts

- ENERGY STAR
- Clean Energy Programs
- Climate Change and Transportation
- Climate Change and Water
- Climate Change Adaptation Resource Center

Additional Climate Resources

- The White House
- NASA
- NASA Climate Kids
- NOAA Climate.gov
- CDC
- U.S. Global Change Research Program
- National Academy of Sciences
- Intergovernmental Panel on Climate Change

Contact Us to ask a question, provide feedback, or report a problem.

Message

From: Dunham, Sarah [Dunham.Sarah@epa.gov]
Sent: 3/9/2021 3:53:15 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]
CC: Charmley, William [charmley.william@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Moran, Robin [moran.robin@epa.gov]
Subject: Draft Cars Briefing
Attachments: Light-duty Vehicle GHG Standards _WH Briefing for March 10 2021_3_9_10amdraft.pptx

Joe, Ale-
Attached is the draft of the Cars Briefing for tomorrow's WH meeting that Robin put together. I made a couple very small edits to the document that Robin sent me this morning (shown in red for Robin and Bill's benefit).
Thanks

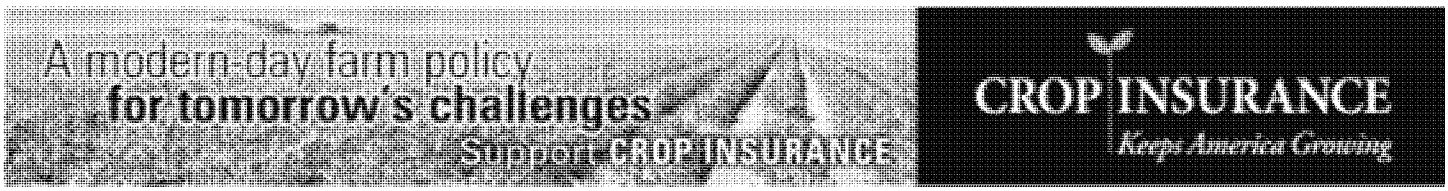
Message

From: Agri-Pulse Daily Harvest [sara@agri-pulse.com]
Sent: 2/23/2021 11:07:25 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Agri-Pulse Daily Harvest 2/23/2021

Agri-Pulse Daily Harvest 2/23/2021

Agri-Pulse Daily Harvest -- 2/23/2021

Here's your daily summary of top news from www.Agri-Pulse.com and regional headlines from across the country. Do you know someone who should also be on our list? Please ask them to click here.



FARM & RURAL POLICY

Agri-Pulse: Daybreak for February 23, 2021

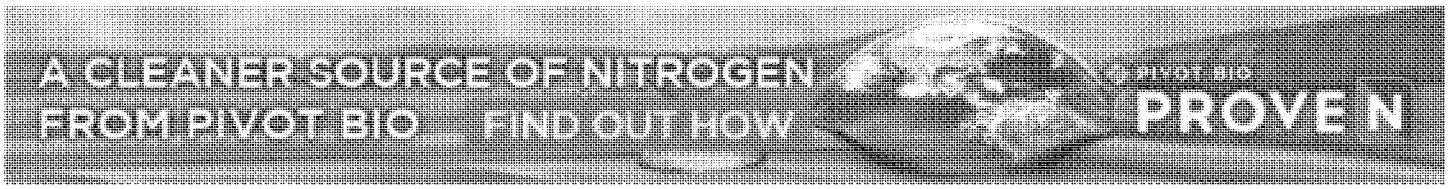
Link - (Audio) Vilsack faces long to-do list; Ag climate coalition expands * Biden EPA signals its biofuels approach.

Agri-Pulse: DriveTime: February 22, 2021

Link - (Audio) DriveTime features an update on how the Biden administration will handle renewable fuels policy, a look at a major ag input trade case, and news on where things stand for dairy economics this year.

Agri-Pulse: Meet the Lawmaker: Rep. Randy Feenstra, R-Iowa

Link - (Video) Rep. Randy Feenstra, R-Iowa, is a freshman and serves the state's 4th Congressional District. In this edition of Meet the Lawmaker, Feenstra talks about helping on the family farm growing up and now serving on the House Agriculture Committee. He says strengthening the Renewable Fuel Standard and expanding broadband access are among his top priorities.



ENERGY

Agri-Pulse: EPA says it now 'agrees' with 10th Circuit waiver ruling

Link - The Environmental Protection Agency has flipped its official position in a critical court case for the future of waivers from the nation's biofuel mandate, offering a signal of the Biden administration's view on a major aspect of renewable fuels policy.

Des Moines Register: Iowa Biofuels Standard is a chance for the state to lead nation away from petroleum

Link - They say that the proposed Iowa Biofuels Standard, which would blend more biodiesel and ethanol into our state's fuel supply, would limit consumer choice.

Today: What could the disaster in Texas mean for the future of energy in the US?

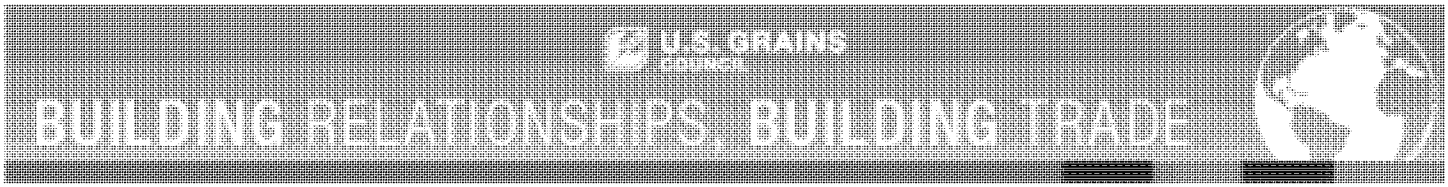
Link - This week, millions in Texas endured freezing temperatures without power, and many were ordered to boil their water to make it safe to consume. What could this mean for the future of how America makes and uses energy?

CNN: Texas' dangerous week in the dark is a wake-up call for the country's infrastructure

Link - When winter storms bring extreme cold, snow and ice as far south as Texas and Louisiana, power outages from downed lines are expected.

Fox Business: US can't compete with cheap Chinese solar panels

Link - American-made solar panels "cannot compete" with Chinese prices as the demand for green energy increases under the Biden administration, according to one U.S. manufacturer.



FOOD & NUTRITION

The Lane Report: Food summit highlights Kentucky's agriculture resiliency

Link - The Kentucky Department of Agriculture's (KDA) Kentucky Proud brand is co-hosting the third annual Kentucky Local Food Systems Summit on March 3. For the first time, this event will be virtual this year.

Baltimore Magazine: From Farm to Your Door

Link - From Farm to Your Door. Support sustainability and the fight to end hunger with fresh produce delivered right to your door.

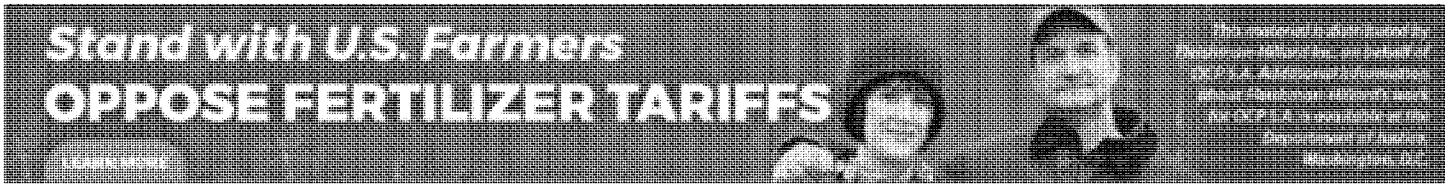
CNN: Atlanta creates the nation's largest free food forest with hopes of addressing food insecurity

Link - Thanks to a US Forest Service grant and a partnership between the city of Atlanta, the Conservation Fund, and Trees Atlanta, you'll find 7.1 acres of land ripe with 2,500 pesticide-free edible and medicinal plants only 10 minutes from Atlanta's airport, the world's busiest airport before the pandemic struck.

The Philadelphia Inquirer: Eat delicious food, support restaurants, and fight waste. Too Good To Go is a game-changing app.

Link - Restaurants and other food businesses list their daily leftovers on the Too Good To Go app. Customers can snap up a meal deal for $5.

Tampa Bay Times: Florida's Latino population hit hard by food insecurity during the pandemic
Link - By mid-October, nearly 20 percent of Latino households in Florida reported that they didn't have enough food to eat in the past week.

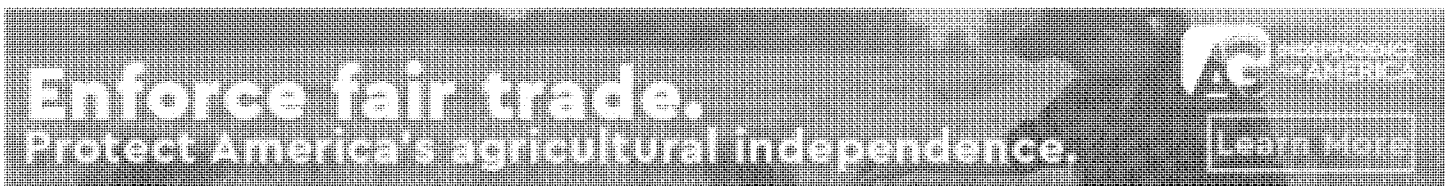


TRADE & INTERNATIONAL

Agri-Pulse: Mexico's top court to decide on US potato trade
Link - Mexico's Supreme Court is scheduled to rule Wednesday on whether the country's government has the authority to fully open Mexican borders to fresh U.S. potatoes, potentially settling a major U.S. trade irritation going back about two decades.

S&P Global: Huge potential to expand US agriculture exports beyond top markets: USDA official
Link - Agricultural exports from the US have huge possibilities in markets beyond the top importing countries, according to a senior US Department of Agriculture trade official.

WTVY: 'Who else is gonna grow the food': Students talk agriculture for National FFA Week
Link - Fighting food deserts and the expansion of agriculture is on the minds of some Tift County, Georgia students.



LABOR & IMMIGRATION

Agri-Pulse: Wage rates for H-A farmworkers up 4.5% in 2021

Link - The Adverse Effect Wage Rate that farmers are required to pay H-2A workers is rising by an average of 4.5% nationally to $14.62 per hour this year, with some western and Plains states seeing significantly higher increases.

WVTF: Virginia Senate Rejects Farm Worker Minimum Wage Bill

Link - Senate Democrats are rejecting an effort to guarantee a minimum wage to farm workers.

Washington Post: Bill to make farmworkers eligible for minimum wage killed

Link - The Committee on Commerce and Labor voted against eliminating current exemptions in the law for farmworkers, ending the bill's chances of passing this year.

KEPR 19: Burbank farm fined for sexual assault, harassment of farm workers by manager

Link - A blueberry farm in Walla Walla County must pay $350,000 after one of its managers sexually assaulted a staff member and routinely harassed other employees.

Santa Ynez Valley News: Governor Newsom pledges more vaccines for Central Valley farmworkers

Link - More vaccines are headed to California's vast Central Valley, an agricultural region whose workers and residents have been hard hit by coronavirus, Gov. Gavin Newsom said Monday.

CONSERVATION & WILDLIFE

St. Louis Public Radio: Missouri Department Of Agriculture Looks To Update Pesticide Training

Link - The Missouri Department of Agriculture is updating the way it teaches farmers to safely use

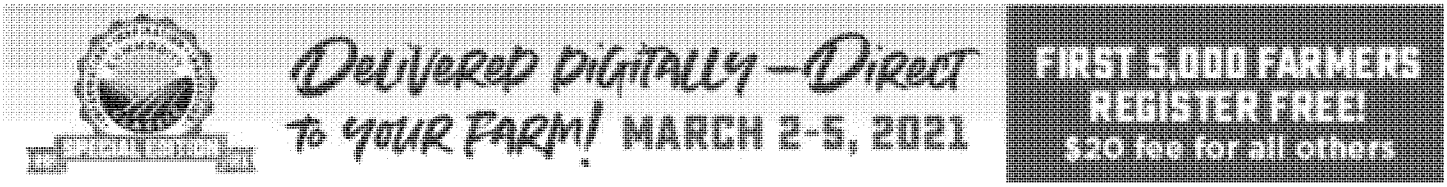
pesticides, with the goals of making it easier for them and keeping the process under state control.

Associated Press: US to urge barriers, elevation to fight NJ back bay flooding
Link - The federal government will recommend flood control measures including storm surge barriers, floodwalls, and elevating homes and other buildings in a report later this year on combating back bay flooding, a major problem in New Jersey that gets comparatively less attention than oceanfront storm surge.

The Hill: Judge rejects Biden request for delay in Trump environmental rollback case
Link - A federal court has rejected the Biden administration's request for a pause before a case on a Trump administration rollback of a key environmental law wraps up.

National Geographic: Same force behind Texas deep freeze could drive prolonged heat waves
Link - Long-lasting heat waves can be deadly. A new study suggests a warming Arctic could drive more of them in the future.

The Guardian: Texas freeze led to release of tons of air pollutants as refineries shut
Link - The largest oil refineries released tons of air pollutants into the skies over Texas this week, according to figures provided to the state, as one environmental crisis triggered another.



MISCELLANEOUS

Honolulu Civil Beat: Hawaii Farmers Need Better Data To Make Decisions
Link - Several market analysis programs have been discontinued in the past decade, including monthly reports on Hawaii produce like bananas and papayas.

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Message

From: Shoaff, John [Shoaff.John@epa.gov]
Sent: 2/5/2021 3:54:49 PM
To: Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]
CC: Goffman, Joseph [Goffman.Joseph@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]; Hockstad, Leif [Hockstad.Leif@epa.gov]; Ferland, Henry [Ferland.Henry@epa.gov]
Subject: RE: US Comments on Canada IPC Matrix
Attachments: CanadaIPCMatrix_EPAComments_2.4.2021 IO jps.docx

Ale, Tomas, Joe,

Please see some minor suggestions on top of yours herein and let me know if you're OK with this version going (minus the comments in the margins) forward to OITA by this afternoon (they need to fwd to NSC by 4)?

Also note that OAQPS shared that they agreed with the messages including:

Ex. 5 Deliberative Process (DP)

Thanks.

John

JOHN SHOAFF | DIRECTOR
OFFICE OF AIR POLICY & PROGRAM SUPPORT (OAPPS)
OFFICE OF AIR & RADIATION | U.S. EPA | WJC NORTH 5442-C
1200 PENNSYLVANIA AVE. NW | MC 6103A | WASHINGTON, D.C. | 20460 | USA
Shoaff.john@epa.gov | 1-202-564-0531 DIRECT | 1-202-257-1755 MOBILE

From: Nunez, Alejandra <Nunez.Alejandra@epa.gov>
Sent: Thursday, February 4, 2021 11:03 PM
To: Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>
Cc: Goffman, Joseph <Goffman.Joseph@epa.gov>; Campbell, Ann <Campbell.Ann@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>; Ferland, Henry <Ferland.Henry@epa.gov>
Subject: RE: US Comments on Canada IPC Matrix

Thank you, Tomás, and thank you, John.

Ex. 5 Deliberative Process (DP)

See a few more comments in the attached.
Thanks!

From: Carbonell, Tomas <Carbonell.Tomas@epa.gov>
Sent: Thursday, February 4, 2021 8:36 PM
To: Shoaff, John <Shoaff.John@epa.gov>
Cc: Goffman, Joseph <Goffman.Joseph@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Campbell, Ann

<Campbell.Ann@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>; Ferland, Henry <Ferland.Henry@epa.gov>
Subject: RE: US Comments on Canada IPC Matrix

Hi John, thank you for this and for running the latest by the programs again. I went into the document and made a few suggestions based on the exchanges we have all had on these issues over the last couple of days – please see attached (note these edits are also reflected in the SharePoint document too). Ex. 5 Deliberative Process (DP) Ale and Joe, I'd be grateful for your review of this (mercifully short) document as well. Best,

Tomás

From: Shoaff, John <Shoaff.John@epa.gov>
Sent: Thursday, February 4, 2021 6:14 PM
To: Carbonell, Tomas <Carbonell.Tomas@epa.gov>
Cc: Goffman, Joseph <Goffman.Joseph@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Campbell, Ann <Campbell.Ann@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>; Ferland, Henry <Ferland.Henry@epa.gov>
Subject: FW: US Comments on Canada IPC Matrix

Tomas,

Ex. 5 Deliberative Process (DP)

John

JOHN SHOAFF | DIRECTOR
OFFICE OF AIR POLICY & PROGRAM SUPPORT (OAPPS)
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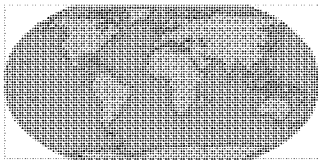
Shoaff.john@epa.gov | 1-202-564-0531 DIRECT | 1-202-257-1755 MOBILE

From: Shoaff, John
Sent: Thursday, February 4, 2021 2:18 PM
To: Carbonell, Tomas <Carbonell.Tomas@epa.gov>
Cc: Goffman, Joseph <Goffman.Joseph@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Campbell, Ann <Campbell.Ann@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>; Ferland, Henry <Ferland.Henry@epa.gov>
Subject: FW: US Comments on Canada IPC Matrix

Tomas et al,

See attached and email chain below re: follow up on the Canada IPC mtg and request from NSC for feedback on the attached **tomorrow AM**. Given that the next mtg is at least two weeks out (not even scheduled yet), I think we might want to push back on this timeline (middle to end of next week?) and if you agree, will also relay the same to OITA.

All that being said, OITA has done a nice job synthesizing our input from the original doc., see first attachment, and in 3 buckets that are easier to review and comment on than the NSC table/matrix, see 2nd attachment. While we shared this initially with program contacts, we'll want to clarify timing for input with OITA's feedback on our proposal and then compile for your benefit to re-review en route to OITA, NSC.



Separately, am organizing an international briefing for next week to provide some more footing on current engagement across OAR and major mtgs on the horizon.

Thanks!

John

JOHN SHOAFF | DIRECTOR
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1200 PENNSYLVANIA AVE. NW | MC 6103A | WASHINGTON, D.C. | 20460 | USA
Shoaff.john@epa.gov | **1-202-564-0531 DIRECT** | **1-202-257-1755 MOBILE**

From: Ferland, Henry <Ferland.Henry@epa.gov>
Sent: Thursday, February 4, 2021 10:14 AM
To: Kocchi, Suzanne <Kocchi.Suzanne@epa.gov>; Sasser, Erika <Sasser.Erika@epa.gov>; Blubaugh, Jim <Blubaugh.Jim@epa.gov>
Cc: Hockstad, Leif <Hockstad.Leif@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>; Gunning, Paul <Gunning.Paul@epa.gov>; Besch, Brianna <besch.brianna@epa.gov>
Subject: FW: US Comments on Canada IPC Matrix

Hey all:

When it rains it pours. Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Brianna at OITA has helpfully pulled our initial comments on the initial matrix into a word format for this exercise – but again this is on an incredibly tight timeframe – they need to get this back to NSC crew tomorrow so are asking for our comments/additions by onset of business tomorrow.

Can you please look over the attached CanadaIPCmatrix and have folks edit/comment as needed?

Suzie – perhaps a compiled version from you/Deirdre to ensure OAP review… Erika/Jim – hoping you guys can consolidate for OAQPS/OTAQ?

John – hoping you can run by IO for their thoughts to share back to this group too.

Thx all – am CC'ing Brianna at OITA also as am out tomorrow.

Best,

H

HENRY FERLAND | *INTERNATIONAL COORDINATOR*
U.S. EPA OFFICE OF AIR & RADIATION

Ferland.Henry@epa.gov | 1-202-343-9330

From: Besch, Brianna <besch.brianna@epa.gov>
Sent: Thursday, February 04, 2021 9:46 AM
To: Ferland, Henry <Ferland.Henry@epa.gov>
Cc: Finman, Hodayah <Finman.Hodayah@epa.gov>; Correa, Sylvia <Correa.Sylvia@epa.gov>; Almodovar, Lisa <Almodovar.Lisa@epa.gov>
Subject: US Comments on Canada IPC Matrix

Hi Henry,

Hodayah asked me to create bulleted comments on the Canada IPC Matrix based on OAR's comments. Please see the attached, which we will need to get back to NSC by mid-day tomorrow. Could you please have the appropriate folks in OAR review for accuracy and to ensure its complete, by OOB tomorrow morning? For your convenience, I'm also attaching the matrix with OAR's original comments.

Brianna Besch (she/her)
Office of International Affairs
U.S. Environmental Protection Agency
+1-202-564-4146
besch.brianna@epa.gov

Message

From: Dunham, Sarah [Dunham.Sarah@epa.gov]
Sent: 2/2/2021 1:30:13 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: RE: Tuesday Cars Meeting
Attachments: Feb 2 2021 Light-duty Vehicle Options Paper.docx

Hi Joe-

Ex. 5 Deliberative Process (DP)

Sarah

From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Monday, February 1, 2021 7:38 PM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>
Subject: RE: Tuesday Cars Meeting

Ex. 5 Deliberative Process (DP)

Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency

From: Dunham, Sarah <Dunham.Sarah@epa.gov>
Sent: Monday, February 1, 2021 8:58 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: RE: Tuesday Cars Meeting

Ex. 5 Deliberative Process (DP)

From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Monday, February 1, 2021 8:38 AM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>
Subject: Tuesday Cars Meeting

Ex. 5 Deliberative Process (DP)

Let me know if we need to talk about this at any point.

Also, our Deputy AA for Transportation, Alejandra Nunez, is set to begin today. I'm inclined to include her in Tuesday's meeting. How important is it for Bill Charmley to participate? Asking because I am OK going to +3 and asking forgiveness, but wanted to get your sense before doing that.

Thanks.

Meanwhile, here is the Zoom link:

https://pitc.zoomgov.com **Ex. 6 Personal Privacy (PP)**

Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency

Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 3/3/2021 10:11:35 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Haaland confirmation likely after picking up support from Collins

Haaland confirmation likely after picking up support from Collins

By Anthony Adragna, Ben Lefebvre

03/03/2021 05:10 PM EST

Rep. Deb Haaland (D-N.M.) won the support of a key Republican senator Wednesday, giving her a likely path to winning confirmation as the first Native American Cabinet secretary, despite heavy criticism from other GOP lawmakers.

Sen. Susan Collins (R-Maine) said she would vote to approve Haaland's nomination to lead the Interior Department, giving her a crucial but narrow buffer in a Senate that's split 50-50 between the parties. Two other moderate senators — Arizona Democrat Kyrsten Sinema and Alaska Republican Lisa Murkowski — have not said publicly how they plan to vote on Haaland's nomination, which comes up for a key committee vote Thursday. Neither Collins nor Sinema is a member of that panel.

"After examining Representative Deb Haaland's qualifications, reviewing her hearing before the Senate Energy and Natural Resources Committee, and meeting with her personally, I will vote to confirm her to be the Secretary of the Department of the Interior," Collins said in a statement.

Haaland, a progressive Democrat elected to Congress in 2018, has been among President Joe Biden's more contested picks because of her support for the Green New Deal and opposition to fossil fuel projects like the Dakota Access Pipeline.

Collin's statement comes after Sen. Joe Manchin, the moderate West Virginia Democrat who chairs the Energy Committee, said he would vote to confirm Haaland. Manchin also released answers to questions for the record showing lawmakers seeking Haaland's input on a range of parochial issues, as well as lodging inquiries about statements she made on Twitter criticizing the Trump administration's energy policy and promoting clean energy.

Murkowski peppered Haaland with several dozen questions on topics ranging from Alaskan Native issues to drilling in the Arctic National Wildlife Refuge and critical minerals. Haaland leaned on her personal rapport with the Alaskan Republican with key roles on three panels — Energy, Indian Affairs and Appropriations — with direct lines to Interior.

"While we will not always agree on the administration's policy, I want to be clear and open with you," Haaland wrote. "I respect your reputation as someone who is thoughtful and civil and has a tremendous amount of experience working productively with administrations of both parties, and I will seek to do the same as I have done during my time in Congress."

But Murkowski in her questions criticized comments Haaland made about Tara Sweeney, a Trump administration Interior official who faced ethics accusations over how she handled tribal funds related to Covid-

19. Murkowski said she was "truly shocked" by Haaland's positions on the matter, prompting the nominee to state she does "not carry any hostility to Ms. Sweeney and I respect her public service."

Republican senators asked Haaland to explain her intent in carrying out the Biden administration's "30 By 30" policy, a plan Haaland had signed onto during her time in Congress that would place 30 percent of U.S. land under protection by 2030.

Haaland replied that the plan would include "state and local efforts, tribal lands, voluntary private conservation, and working lands cared for by generations of farmers and ranchers." She added that "[p]articipation in the effort by all non-federal governments, Tribal Nations, and other groups will be on a voluntary basis ... We will actively reach out and encourage state, local, Tribal and voluntary private conservation efforts."

Sen. John Barrasso (R-Wyo.), ranking member of the panel, took particular aim at Haaland in his written questions, pointing to an old tweet in which she said low energy prices made it "easy to miss the big picture" around climate change, and he asked if she thought prices for fossil fuels were "too low" to help the Biden administration's goal of developing renewable fuel production.

Haaland replied, in part, "I support affordable energy prices for all Americans and understand that prices fluctuate and can hurt consumers."

The answers did not sway Barrasso, who along with fellow GOP senators Steve Daines (Mont.) — who submitted 86 questions on topics ranging from Montana tribal issues her views on shutting down coal-fired power plants — and Cynthia Lummis (Wyo.), have called Haaland a "radical" who would crush the fossil fuel industry.

"Like he was after the actual hearing, Ranking Member Barrasso is deeply dissatisfied with the lack of substance in Rep. Haaland's responses to questions for the record," spokesperson Mike Danylak said. "Several questions from Committee Members included multiple parts and her responses failed to address them."

Other GOP senators set to vote on her nomination were less confrontational. Sen. Jim Risch of Idaho asked Haaland about her support for expanding electric transmission grids, a policy issue that Haaland backed during her time in the House. He also asked her whether she supported encouraging mining on public lands, which experts say will be needed to supply the fast growing markets for battery and electrification technology.

"If confirmed, I will listen to all stakeholders, to ensure that we are harnessing the minerals we need while safeguarding public health and important natural and cultural resources," Haaland replied in writing. "I will look to take a balanced approach to oversee mining on our public lands and waters."

An aide for Risch declined to say how he would vote on Haaland's nomination.

To view online:
https://subscriber.politicopro.com/energy/article/2021/03/haaland-confirmation-likely-after-picking-up-support-from-collins-2038138

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Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/10/2021 6:19:12 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Court rejects suit over Obama-era California waiver on NOx, PM

Court rejects suit over Obama-era California waiver on NOx, PM

By Alex Guillén

02/10/2021 01:17 PM EST

A federal court on Wednesday rejected a lawsuit challenging an Obama-era Clean Air Act waiver granted to California to enforce more stringent pollution limits for "non-road" diesel engines.

Background: EPA in 2013 granted California a waiver related to nitrogen oxides and particulate matter from non-road diesel engines — construction or agricultural equipment such as bulldozers — allowing the state to limit their use to reduce emissions, which pose their own health risks and can form ground-level ozone.

The Obama administration's grant of a greenhouse gas waiver for passenger vehicles to California was novel, and was subsequently revoked by the Trump administration. But the 2013 non-road waiver was similar to dozens targeting conventional pollutants issued over the decades by administrations of both parties. The law gives special authorities to California because of its ongoing pollution problems.

TPPF, representing a trucking company, construction groups and others, challenged the waiver by arguing that EPA had relied on poor air quality in certain regions to justify approving statewide regulations, even in areas with better air quality.

The ruling: The three-judge panel from the U.S. Court of Appeals for the 9th Circuit, which heard the case on Jan. 22, issued a five-page ruling rejecting the lawsuit.

EPA's reasoning in granting the waiver "was not arbitrary and capricious," the court wrote.

"Contrary to [the plaintiff's] argument, the EPA did not limit its review to two of California's fourteen air quality regions," the court wrote. "The EPA examined the relevant data provided by [the California Air Resources Board], and it articulated a 'satisfactory explanation for its action including a rational connection between the facts found and the choice made.'"

Context: The ruling ultimately sidestepped any connection to the Trump administration's revocation of the separate Obama-era waiver on greenhouse gases (Reg. 2060-AU09). Legal questions about the "needs test" EPA must conduct before granting waivers will be left to litigation over the Trump rule, the 9th Circuit noted. However, the Biden administration's plans to withdraw the waiver revocation likely will delay court action on that question.

To view online:
https://subscriber.politicopro.com/energy/whiteboard/2021/02/court-rejects-suit-over-obama-era-california-waiver-on-nox-pm-3986927

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Message

From: Gray, David [gray.david@epa.gov]
Sent: 2/18/2021 7:46:42 PM
To: Nishida, Jane21 [ActAdmJ21Nishida@epa.gov]; Utech, Dan [Utech.Dan@epa.gov]; Cassady, Alison [Cassady.Alison@epa.gov]; Kasman, Mark [Kasman.Mark@epa.gov]; Chase, Joann [Chase.Joann@epa.gov]; Goffman, Joseph [Goffman.Joseph@epa.gov]; Hoffer, Melissa [Hoffer.Melissa@epa.gov]; Koerber, Mike [Koerber.Mike@epa.gov]; Garbow, Avi [Garbow.Avi@epa.gov]
CC: Byrne, Andrew [Byrne.Andrew@epa.gov]; McGuire, James [McGuire.James@epa.gov]; Gee, Randy [Gee.Randy@epa.gov]; Garcia, David [Garcia.David@epa.gov]; Smith, Suzanne [Smith.Suzanne@epa.gov]; Berrios, Lisa [Berrios.Lisa@epa.gov]
Subject: RE: Briefing: Oklahoma SIP and SAFETEA Litigation

FYI. Latest online news article on SAFETEA.

https://tyt.com/stories/4vZLCHuQrYE4uKagy0oyMA/3EB5FWJlayxUcin0KL9Jlg

Biden Won't Say Whether He'll Undo Trump's Tribal Land Grab

Trump's EPA Undid a Supreme Court Ruling Recognizing Tribal Sovereignty of Native American Land in Oklahoma

- By: Ti-Hua Chang
- Feb 12, 2021

The Biden administration is refusing to say whether it will overturn a controversial decision last year by the Trump Environmental Protection Agency (EPA) stripping tribal sovereignty from Native Americans in Oklahoma.

As TYT revealed last year, the Oct. 1, 2020, ruling by then-EPA Administrator Andrew Wheeler effectively reversed a landmark Supreme Court ruling in favor of the tribes, turning over environmental regulatory control of tribal land to the state's pro-fossil fuel, pro-big agriculture government. Wheeler's decision would even allow dumping hazardous waste on tribal land without consultation.

Biden has won broad praise from environmental activists for his early moves, but Oklahoma tribes say they are not surprised by the Biden administration's refusal to take a stand for them.

TYT asked the White House whether it supports tribal sovereignty over the pro-oil state government in Oklahoma. White House Press Secretary Jen Psaki and Assistant Press Secretary Vedant Patel responded to TYT's inquiries, but neither would comment on the record.

The EPA also declined to take a position, stating only that it will now support science and law there in principle.

In an email to TYT, an EPA spokesperson said that the EPA "will follow the science and law in accordance with the Biden-Harris Administration's executive orders and other directives in reviewing all of the agency's actions issued under the previous Administration to ensure that they protect public health and the environment."

When asked what that meant concretely in regards to Oklahoma, the spokesperson responded, "We don't have anything more to share at this time as we review the agency's actions issued under the previous Administration."

OKLAHOMA TRIBES AND ACTIVISTS REACT

For the Ponca Tribe of Oklahoma, this will not suffice. "The EPA saying that it will follow science and the law isn't enough," said Casey Camp-Horinek, Environmental Ambassador, Elder & Hereditary Drumkeeper of the Ponca Tribe. "Show us. Restore our government-to-government relations [with Oklahoma] now. Only then will we begin to believe that this administration is any different than the last 45."

Camp-Horinek also told TYT that the Biden administration must restore environmental regulatory control to tribal governments. "This has yet to even be discussed, much less rectified. We cannot allow this to be put on the back burner to fester and grow as we watch [Gov. Kevin Stitt (R-OK)] push what he calls the state of Oklahoma's sovereignty and to further erode the Treaty obligations to the 39 federally recognized tribes that are guaranteed by the Constitution of the U.S."

On Thursday, in a telephone conversation with TYT, Camp-Horinek emphasized that Oklahoma tribes are still under state regulations, including for polluting fossil fuels (Oklahoma has the fourth biggest oil industry in the country). She noted that tribal sovereignty has not been honored, despite the Supreme Court's *McGirt v. Oklahoma* ruling in July 2020 that much of the eastern portion of the state is still tribal territory.

The Indigenous Earth Network, a Native American environmental activist organization, told TYT it was not surprised by the Biden administration's "non-response." Oklahoma IEN representative Ashley Nicole Engle said, "It is my hope the Biden Administration will make good on its promises made to tribal nations and Indigenous peoples by moving beyond mere consultation — or even 'meaningful consultation' and codifying Free, Prior, and Informed Consent (FPIC)."

Engle, who is Absentee Shawnee Tribe of Oklahoma/Oglala Lakota Nation, added that the indigenous tribes were key to preventing the industries presently and in the future from polluting all of Oklahoma. "Right now, Oklahoma tribes serve as one of the only actual checks or barriers between the people and the land and completely unfettered and unregulated resource extraction," Engle said.

One environmental activist organization declined to comment for this story. Another did not respond to a request for a comment. Many environmental organizations have complimented President Biden for his executive actions, some of which reverse or will attempt to counter the Trump administration's estimated 100 rollbacks of environmental regulations, and for appointing Rep. Deb Haaland (D-NM) as the first Native American secretary of the Interior Department. Environmental activists also praised Biden for elevating climate change to be part of every level of the federal government, working to reenter the Paris Climate Agreement, and bringing the largest team of climate change advocates and experts to the White House.

-----Original Appointment-----
From: Nishida, Jane21 <ActAdmJ21Nishida@epa.gov>
Sent: Friday, February 12, 2021 10:18 AM
To: Nishida, Jane21; Utech, Dan; Cassady, Alison; Gray, David; Kasman, Mark; Chase, JoAnn; Goffman, Joseph; Hoffer, Melissa; Koerber, Mike; Garbow, Avi
Cc: Byrne, Andrew; McGuire, James; Gee, Randy; Garcia, David; Smith, Suzanne; Berrios, Lisa
Subject: Briefing: Oklahoma SIP and SAFETEA Litigation
When: Thursday, February 18, 2021 4:30 PM-5:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

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Message

From: Young, Carl [young.carl@epa.gov]
Sent: 2/19/2021 5:38:39 PM
To: Farrar, Wanda [farrar.wanda@epa.gov]
CC: Goffman, Joseph [Goffman.Joseph@epa.gov]; Hooper, Daniel [hooper.daniel@epa.gov]; Walker, Sherri [Walker.Sherri@epa.gov]; Garcia, David [Garcia.David@epa.gov]; Ngo, Kim [Ngo.Kim@epa.gov]; Donaldson, Guy [Donaldson.Guy@epa.gov]; Tanimura, Erin [Tanimura.Erin@epa.gov]; Davis, Suea [davis.suea@epa.gov]
Subject: Region 6 Memo: Final Agency Review on the Revised Cross-State Air Pollution Rule Update for the 2008 Ozone National Ambient Air Quality Standard – Final Rule
Attachments: R6 FAR memo Revised CSAPR Update Final Rule-Signed 2.18.21.pdf

Importance: High

Attached please find the Region 6 memo for the Final Agency Review on the Revised Cross-State Air Pollution Rule Update for the 2008 Ozone National Ambient Air Quality Standard – Final Rule (Tier 1; SAN 7811; RIN: 2060-AU84).

We look forward to Monday's Final Agency Review meeting.

Carl

Carl Young
EPA Region 6 Air Quality Program
(214) 665-6645

Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/24/2021 12:16:09 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: FW: FOR YOUR SIGNATURE: RFC Response for Acting AA Sig. & Email
Attachments: Tinker RFC 21001 Response Feb 22 2021.docx; RFC_21001_Greenhouse Effect.pdf

Resending.

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

From: Campbell, Ann
Sent: Monday, February 22, 2021 4:53 PM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>
Cc: Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>
Subject: FOR YOUR SIGNATURE: RFC Response for Acting AA Sig. & Email

Joe, the attached response to a Request for Correction (RFC) is ready for your review and signature. The RFC was sent in October (attached). This response was developed by OAP and signed off by Chris Grundler. The response was then sent to OMB for review. The comments from OMB have been addressed in this final version. OMS and OGC have been involved in the process throughout.

Please let me know if you have any questions. Thank you,

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

From: Shoaff, John <Shoaff.John@epa.gov>
Sent: Monday, February 22, 2021 2:59 PM
To: Campbell, Ann <Campbell.Ann@epa.gov>
Cc: Carroll, Maria <carroll.maria@epa.gov>; Faulkner, Martha <Faulkner.Martha@epa.gov>; Hamilton, Sabrina <Hamilton.Sabrina@epa.gov>; Hockstad, Leif <Hockstad.Leif@epa.gov>; Crimmins, Allison <Crimmins.Allison@epa.gov>
Subject: RFC Response for Acting AA Sig. & Email

Ann,

Please find attached (Word file) the final response to RFC 21001 (pdf) prepared courtesy of OAP. Comments from OMB have been addressed in this version. This letter is now ready for Joe Goffman to sign. Note that since this RFC is past the 120-day mark, OMS/EQMD would like the response to come as an email from the acting AA directly to the requestor. The response should be sent to: ftinker[Ex. 6 Personal Privacy (PP)] and OMS/EQMD (Bob Tallent and Katharine Chalfont) should be cc'd. We could also send or have them (OMS/EQMD) send a hard copy via USPS as well. Thanks!

John

JOHN SHOAFF | DIRECTOR
OFFICE OF AIR POLICY & PROGRAM SUPPORT (OAPPS)
OFFICE OF AIR & RADIATION | U.S. EPA | WJC NORTH 5442-C
1200 PENNSYLVANIA AVE. NW | MC 6103A | WASHINGTON, D.C. | 20460 | USA
Shoaff.john@epa.gov | **1-202-564-0531 DIRECT | 1-202-257-1755 MOBILE**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

February 22, 2021

OFFICE OF
AIR AND RADIATION

Mr. Frank Tinker, Ph.D.

Ex. 6 Personal Privacy (PP)

Dear Dr Tinker:

This letter is in response to your Request for Correction (RFC), received by the U.S. Environmental Protection Agency on October 20, 2020, which was assigned RFC# 21001 for tracking purposes. In the RFC letter, you contend that the Information Quality Act's (IQA) general definition of "objectivity" has not been met, specifically "the accuracy of the information itself, in reference to the terms "Greenhouse Effect", "Greenhouse Gas", and related concepts." You request that "correction be made to all documents, electronic or paper based, published by the Agency, that includes the terms "Greenhouse Effect", "Greenhouse Gas", or any related concept. Such correction should address the fact that the Effect has been disproven or the document in question should be removed from public view and replaced with an accurate analysis of Earth's surface temperature." The RFC includes a list of various agency documents containing those terms.

You base your RFC on an assertion that the superposition principle has been misapplied. The EPA has reviewed your stated position and evidence and concludes that the EPA's use of the term(s) in question are fully consistent with EPA's Information Quality Guidelines.

The EPA denies your request for correction for three primary reasons: 1) your submission is inconsistent with the consensus of the scientific community as represented by the major scientific assessments; 2) your hypothesis has not been peer reviewed or otherwise evaluated by independent scientists; and 3) similar to previous claims that the greenhouse effect is somehow inconsistent with thermodynamic laws, there are flaws in your approach, in particular with your misapplication of the "superposition principle" within the Stefan-Boltzmann equation.

On the first issue, EPA gives careful consideration to all the scientific and technical information available. On the topic of climate change, EPA relies primarily on the major assessments of the US Global Change Research Program (USGCRP), the Intergovernmental Panel on Climate Change (IPCC), and the National Academy of Sciences (NAS). The rationale behind this reliance is described in the 2009 Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Section 202(a) of the Clean Air Act (Docket ID No. EPA-HQ-OAR-2009-0171), Section III.A, "The Science on Which the Decisions Are Based." These assessments represent the current state of the science on climate change, comprehensively evaluating the findings of thousands of individual studies in order to convey the consensus conclusions as

demonstrated by the body of scientific literature. These assessments have gone through a rigorous and exacting standard of peer review by the expert community, as well as rigorous levels of U.S. Government review and acceptance. It is EPA's view that the scientific assessments of the IPCC, USGRCP, and the NAS represent the best reference materials for determining the general state of knowledge on the scientific and technical issues before the agency. The IPCC, USGCRP, and NAS assessments have all presented clear, convincing analysis of the Greenhouse Effect, contrary to the claims in your RFC.

On the second issue, it is important to note that the claims in your RFC have not been peer-reviewed in a scientific journal or otherwise evaluated by any independent scientists. Independent peer review is an important first step in presenting new scientific conclusions. Pursuant to the EPA's Information Quality Guidelines, EPA recognizes that if data and analytic results are subjected to formal, independent, external peer review, the information may generally be presumed to be of acceptable objectivity. The Office of Management and Budget's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies,* 67 Fed. Reg. 8452 (Feb. 22, 2002) states that the review process used by scientific journals is an example of the type of independent review contemplated.

Finally, there are specific flaws in your claims. Most importantly, the superposition principle is designed to be used only for linear problems. A physics textbook, Principles of Biophotonics (Popescu, 2018, [HYPERLINK "https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fiopscience.iop.org%2Fbook%2F978-0-7503-1641-5%2Fchapter%2Fbk978-0-7503-1641-5ch1&data=04%7C01%7CSarofim.Marcus%40epa.gov%7Ca5a8c26110a84e244dce08d8875bbb04%7C88b378b367484867acf976aacbeca6a7%7C0%7C0%7C637408175329940853%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=bZHDG8Jvd5WO56yPe87HL3NaVcGTWplEhHrRJBNIH5c%3D&reserved=0"]) defines this: "This principle states that, for linear systems, the output of a sum of inputs equals the sum of the respective outputs." The Stefan-Boltzmann equation is not linear: it states that the energy radiated by a blackbody scales with temperature to the fourth power ($F = \sigma T^4$). Therefore, contrary to your claim, the superposition principle does not apply for the Stefan-Boltzmann equation.

The use of the Stefan-Boltzmann equation can be demonstrated by analyzing the example provided in the RFC. As the RFC notes, the Earth receives about 240 W/m^2 of solar radiation averaged over the entire surface (after accounting for albedo). Using the Stefan-Boltzmann equation, 240 W/m^2 of radiation applied to a blackbody in a vacuum does yield a temperature of 255K, as the RFC notes. Similarly, we do not disagree that a radiative forcing of 0.065 W/m^2 applied to a blackbody in a vacuum would yield a temperature of 33K. However, when considering a system warmed by both a forcing of 0.065 W/m^2 and a forcing of 240 W/m^2, the forcings need to be added together before calculating the temperature. The first law of thermodynamics is conservation of energy: that means that the energy that goes into the system has to equal the energy that goes out of the system. Using the method presented in the RFC (namely, adding together the calculated temperatures), the two forcings together would warm the blackbody to 288K. However, the same Stefan-Boltzmann equation can also be used to calculate the radiation emitted by a

blackbody given its temperature, and a blackbody at 288K would radiate a total of 390 W/m^2. 390 W/m^2 is greater than the total of 240.065 W/m^2 that was absorbed by the blackbody: this result contradicts the first law of thermodynamics, which requires that the energy into a system equal the energy emitted by that system. The approach in the RFC is that every additional energy input

would further raise Earth's temperature by substantial quantities. For example, the heat produced by fossil fuel combustion is about 0.028 W/m^2 globally (Flanner et al., 2009[1]): by the method in the RFC, this would further raise Earth's temperature by another 27K.

It is also worthwhile to note that the blackbody argument presented in your RFC is an educational analogy: climate models explicitly calculate energy flows throughout the atmosphere and do not assume the entire planet is a single blackbody. Some of these climate models do explicitly include the contribution of geothermal warming: while the geothermal warming does not make a large direct contribution to surface temperatures, it can matter for aspects of deep ocean circulation (see, e.g., Downes et al. 2016: [HYPERLINK "https://journals.ametsoc.org/jcli/article/29/16/5689/107089/The-Transient-Response-of-Southern-Ocean"]).

The EPA has previously responded to similar arguments that the Greenhouse Gas effect does not exist in the Response to Comments Volume 3 for the 2009 Greenhouse Gas Endangerment Finding, 3-42 through 3-51 ([HYPERLINK "https://www.epa.gov/sites/production/files/2017-07/documents/rtc_vol_3.pdf"]). Several of these arguments similarly tried to make thermodynamic arguments that the greenhouse gas effect did not exist, and some similarly made reference to idealized blackbody temperature calculations. These arguments were addressed previously.

In conclusion, the EPA's use of the terms "Greenhouse Effect", "Greenhouse Gas" and related topics and products are consistent with EPA's Information Quality Guidelines.

Your Right to Appeal

If you are dissatisfied with this response, you may submit a Request for Reconsideration (RFR). EPA requests that any such RFR be submitted within 90 days of the date of EPA's response. If you choose to submit a RFR, please send a written request to the EPA Information Quality Guidelines Processing Staff via mail (Enterprise Quality Management Division, Mail Code 2821T, USEPA, 1200 Pennsylvania Avenue, NW, Washington, DC 20460); or electronic mail ([HYPERLINK "mailto:quality@epa.gov"]). If you submit an RFR, please reference the IQG identifier assigned to this original Request for Correction (RFC # 21001). Additional information about how to submit an RFR is listed on the EPA Information Quality Guidelines website at [HYPERLINK "http://epa.gov/quality/informationguidelines/index.html"].

---

[1] https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2008gl036465

Sincerely,

Joseph Goffman
Acting Assistant Administrator

Frank A Tinker, Ph.D.

Ex. 6 Personal Privacy (PP)

19-October-2020

Information Quality Guidelines Staff
USEPA Headquarters
1200 Pennsylvania Ave., NW
Mail Code 2821T
Washington, DC 20460
Email: quality@epa.gov

Re: Information Quality Act Correction Request Regarding Dissemination of Flawed Information Concerning the Terms "Greenhouse Effect" or "Greenhouse Gas" -- Revised (19-10-2020) to correct misspelling of Stefan-Boltzmann.

In the following, "Agency" will be a reference to your Agency within the US Government.

I am submitting this request for correction under the Information Quality Act (IQA), 114 Stat. 2763, section 515, as implemented through the Agency and the Office of Management and Budget (OMB) guidelines.

Paraphrased from the Federal Register, Volume 67, Number 36, Friday, February 22, 2002/Notices Page 8459, Under the general definition of "Objectivity", there are two distinct areas of concern. The first is that the Agency in question accurately reports existing information in a clear, complete, and unbiased manner. The second is that the information itself is accurate and reliable and has been arrived at in an unbiased manner.

The second of these is alluded to in the summary text of the same document on page 8453, "...presented in an accurate, clear, complete, and unbiased manner *and as a matter of substance, is accurate, reliable, and unbiased"* (my italics).

It is my contention that the second of these, i.e., the accuracy of the information itself, in reference to the terms "Greenhouse Effect", "Greenhouse Gas", and related concepts, has not been met.

As has been detailed in the recently published book, *Air of Doubt (ISBN: 979-8697917329),* the genesis of the concept of a "Greenhouse Effect" (also called a "Natural Greenhouse Effect") is by noting that the empirically measured global mean surface temperature of the Earth over continental crust, *~288K (15C or 59F),* differs from that computed through the Stefan-Boltzmann equation using empirically measured ground-level incident solar flux, *240 W/m^2*. The

Stefan-Boltzmann equation computation is somewhat trivial,

$$\begin{aligned} \mathrm{T} &= 64.8 \cdot \Phi^{0.25} \\ &= 64.8 \cdot 240^{0.25} \\ &= 64.8 \cdot 3.936 \\ &= 255K\ (-18C\ or\ 0.4F). \end{aligned} \qquad 1$$

In this, the *64.8* factor is, in essence, the Stefan-Boltzmann constant. Obviously, the symbol Φ represents ground-level insolation.

From this, it is easily seen that the measured surface temperature *(288K)* is *33K* greater than that provided by insolation *(255K)*. Therefore, there must be some contribution to Earth's surface temperature other than insolation. This is the basis of the "Greenhouse Effect Theory" that postulates an atmospheric contribution to the surface temperature that involves absorption and reradiation of thermal radiative flux emitted from the surface.

This is manifestly incorrect in that one contribution to Earth's surface temperature is not properly accounted for. That is, the geothermal heat from Earth's interior is missing. The mean global geothermal flux has been well-measured for some time. It is common knowledge in the field that the magnitude of that flux over continental crust is approximately *0.065W/m²*. Using the Stefan-Boltzmann equation above and this well-known mean flux value we obtain

$$\begin{aligned} \mathrm{T} &= 64.8 \cdot \Phi^{0.25} \\ &= 64.8 \cdot 0.065^{0.25} \\ &= 64.8 \cdot 0.505 \\ &= 33K. \end{aligned} \qquad 2$$

What this computation does is indicate that for Earth's surface to radiate away the *0.065W/m²* of geothermal flux as it reaches the surface, the surface must have a temperature of *33K*.

There is no argument within the scientific community that the geothermal flux is ignored in the calculation. The argument for doing so is because of the relative difference between the magnitude of the solar flux and that of the geothermal flux. However, this analysis requires the simple addition of the fluxes in the Stefan-Boltzmann equation, i.e.,

$$\begin{aligned} \mathrm{T} &= 64.8 \cdot \Phi^{0.25} \\ &= 64.8 \cdot (240 + 0.065)^{0.25} \\ &= 64.8 \cdot 3.936 \\ &= 255K. \end{aligned} \qquad 3$$

This naïve summing of the two fluxes violates the first law of thermodynamics (conservation of energy). The mathematical technique used to solve for temperature in a solid with two constant heat sources is to 1) treat each source independently of the others, 2) compute the temperature distribution for each source, and then 3) sum the solutions. This is known as the

superposition principle. It is not simply a mathematical technique. It is, in fact, required by the physics of the problem. In this instance, since the temperature at any place in the solid is equivalent to the internal energy there, to not obey the superposition principle is to violate the first law of thermodynamics. Adding the heat fluxes violates the superposition principle.

Therefore, the entire, exact, global mean surface temperature of planet Earth is completely explained by properly including both solar and geothermal fluxes through standard mathematical techniques and the Stefan-Boltzmann equation. As such, the "Greenhouse Effect" is unconditionally disproven. Further, sans a "Greenhouse Effect", the concept of a "Greenhouse Gas" is equally disproven.

Therefore, it is requested that correction be made to all documents, electronic or paper based, published by the Agency, that includes the terms "Greenhouse Effect", "Greenhouse Gas", or any related concept. Such correction should address the fact that the Effect has been disproven or the document in question should be removed from public view and replaced with an accurate analysis of Earth's surface temperature.

Since the term itself is in wide use throughout the Agency, focus on a specific document is unhelpful. However, a relatively accurate and complete list of flawed documents can be found via a search engine focused on the Agency's URL and the terms "greenhouse effect" or "greenhouse gas".

Using the Google search engine, the Agency has approximately *64,200* flawed documents. I've attached a portion of the results of that search.

It must be stressed that widespread adoption of the flawed Greenhouse Effect Theory has affected virtually every citizen of the United States. Rapid response to this request for correction can only help to resolve the deleterious effect it has had on those citizens.

Sincerely,

Frank A Tinker, Ph.D.
ftinker@airofdoubt.com

Google "greenhouse effect" OR "greenhouse gas" site:epa.gov

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Sep 9, 2020 — Industry (22.0 percent of 2018 greenhouse gas emissions) ... Greenhouse gas emissions from industry primarily come from burning fossil fuels for ...

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www.epa.gov › ghgemissions › understanding-global-...

Understanding Global Warming Potentials | Greenhouse Gas ...

Sep 9, 2020 — Greenhouse gases (GHGs) warm the Earth by absorbing energy and slowing the rate at which the energy escapes to space; they act like a ...

Images for "greenhouse effect" OR "greenhouse gas" site:epa.gov

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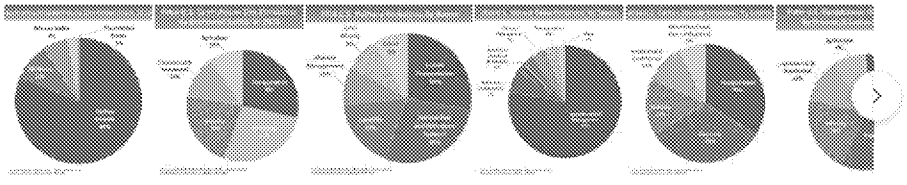

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Global Greenhouse Gas Emissions - EPA

Increasing emissions of greenhouse gases due to human activities worldwide have led to a substantial increase in atmospheric concentrations of long-lived and ...

www.epa.gov › climate-indicators › greenhouse-gases

Climate Change Indicators: Greenhouse Gases - EPA

Feb 22, 2017 — Since 2005, however, total U.S. greenhouse gas emissions have decreased by 7 percent. Carbon dioxide accounts for most of the nation's ...

www.epa.gov › report-environment › greenhouse-gases

Greenhouse Gases | EPA's Report on the Environment (ROE ...

Mar 19, 2020 — What are the trends in greenhouse gas emissions and concentrations and their impacts on human health and the environment? Importance of ...

archive.epa.gov › climatechange › kids › basics › today

The Greenhouse Effect | A Student's Guide to Global Climate ...

May 9, 2017 — The Greenhouse Effect. If it were not for greenhouse gases trapping heat in the atmosphere, the Earth would be a very cold place. Greenhouse ...

19january2017snapshot.epa.gov › ghgemissions › sour...

Sources of Greenhouse Gas Emissions - US EPA

Oct 6, 2016 — Approximately 67 percent of our electricity comes from burning fossil fuels, mostly coal and natural gas. Transportation (26 percent of 2014 ...

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Greenhouse Gases | A Student's Guide to Global Climate ...

Sep 5, 2017 — Carbon dioxide is the greenhouse gas you hear people talk about the most. That's because we produce more carbon dioxide than any other ...

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Inventory of US Greenhouse Gas Emissions and Sinks - EPA

Sep 11, 2020 — This annual report provides a comprehensive accounting of total greenhouse gas emissions for all man-made sources in the United States. The ...

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US Greenhouse Gas Inventory Report: 1990-2014 - EPA

Sep 10, 2020 — This report tracks total annual U.S. emissions and removals by source, economic sector, and greenhouse gas going back to 1990. EPA uses ...

www.epa.gov › ghgemissions › greenhouse-gas-endang...

Greenhouse Gas Endangerment Finding: Health Effects - EPA

Jul 11, 2017 — Greenhouse Gas Endangerment Finding: Health Effects. View English or Spanish-language version of a fact sheet that highlights key effects ...

cfpub.epa.gov › ghgdata › inventoryexplorer

Greenhouse Gas Inventory Data Explorer | US EPA

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Household Carbon Footprint Calculator | Greenhouse Gas ...

Sep 10, 2020 — Many of our daily activities cause emissions of greenhouse gases. For example, we produce greenhouse gas emissions from burning gasoline ...

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Climate Change Indicators: U.S. Greenhouse Gas Emissions ...

Dec 17, 2016 — This figure shows emissions of carbon dioxide, methane, nitrous oxide, and several fluorinated gases in the United States from 1990 to 2014.

www.epa.gov › ghgreporting › fluorinated-greenhouse...

Fluorinated Greenhouse Gas Emissions - EPA

Oct 1, 2019 — The Greenhouse Gas Reporting Program (GHGRP) covers emissions of these compounds by requiring specific facilities that emit significant ...

www.epa.gov › energy › greenhouse-gas-equivalencies...

Greenhouse Gas Equivalencies Calculator | Energy and the ...

Did you ever wonder what reducing carbon dioxide (CO2) emissions by 1 million metric tons means in everyday terms? The greenhouse gas equivalencies ...

www.epa.gov › ghgreporting

Greenhouse Gas Reporting Program (GHGRP) | US EPA

Jan 10, 2020 — The GHGRP requires reporting of greenhouse gas (GHG) data and other relevant information from large GHG emission sources, fuel and ...

cfpub.epa.gov › roe › indicator_pdf PDF

US Greenhouse Gas Emissions - EPA

This "greenhouse effect" occurs naturally, making life as we know it possible. Since the Industrial Revolution began in the late 1700s, however, people have ...

www.epa.gov › ghgemissions › us-greenhouse-gas-inve...

US Greenhouse Gas Inventory Report Archive - EPA

Sep 10, 2020 — This page contains past versions of the U.S. Greenhouse Gas Inventories developed by the U.S. government to meet U.S. commitments under the ...

archive.epa.gov › epa › reducing-greenhouse-gas-emiss...

Reducing Greenhouse Gas Emissions | Climate Change | US ...

May 9, 2017 — These changes are linked to the climbing levels of carbon dioxide and other greenhouse gases in our atmosphere, caused by human activities ...

www.epa.gov › ghgemissions › endangerment-and-cau...

Endangerment and Cause or Contribute Findings for ... - EPA

However, this action was a prerequisite for implementing greenhouse gas emissions standards for vehicles. In collaboration with the National Highway Traffic ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of U.S. Greenhouse Gas Emissions and Sinks Fast ...

Apr 13, 2020 — Inventory of U.S. Greenhouse Gas Emissions and Sinks Fast Facts and Data Highlights. See below for summary information from the report, ...

www.epa.gov › carbon-pollution-transportation

Carbon Pollution from Transportation | Transportation, Air ...

Jun 25, 2020 — Transportation and Climate Change. Burning fossil fuels like gasoline and diesel releases carbon dioxide, a greenhouse gas, into the ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2015 (published 2017), developed by the U.S. Government to meet ...

www.epa.gov › energy › greenhouse-gases-equivalenci...

Greenhouse Gases Equivalencies Calculator - Calculations ...

To determine annual greenhouse gas emissions per mile, the following methodology was used: carbon dioxide emissions per gallon of gasoline were divided by ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Aug 19, 2020 — View the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2018 (published 2020), developed by the U.S. Government to meet ...

www.epa.gov › enviro › greenhouse-gas-search-user-g...

Greenhouse Gas Search User Guide | Envirofacts | US EPA

This is a brief user's guide to the GHG Search. Select a variety of different search options and output options detailed below. Select more than one search option ...

archive.epa.gov › climatechange › kids › documents PDF

Mapping Greenhouse Gas Emissions Where You Live ...

or human-produced gases that trap heat in the atmosphere and contribute to the greenhouse effect. Greenhouse gases include water vapor, carbon dioxide, ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 11, 2020 — View the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2014 (published 2016), developed by the U.S. Government to meet ...

www.epa.gov › greenvehicles › fast-facts-transportation...

Fast Facts on Transportation Greenhouse Gas Emissions - EPA

Jul 29, 2020 — The transportation sector is one of the largest contributors to anthropogenic U.S. greenhouse gas (GHG) emissions. According to the inventory ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2009 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

www.epa.gov › ghgemissions › forms › contact-us-abo...

Contact Us about Greenhouse Gas Emissions - EPA

Sep 7, 2020 — Please use the form below to send us comments or questions regarding EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks. Be sure ...

cfpub.epa.gov › roe › indicator_pdf PDF

Greenhouse Gas Concentrations - EPA

This "greenhouse effect" occurs naturally, making life as we know it possible. Since the Industrial Revolution began in the late 1700s, however, people have ...

www.epa.gov › climate-indicators › climate-change-ind...

Climate Change Indicators: Atmospheric Concentrations of ...

Jun 29, 2020 — Water vapor is the most abundant greenhouse gas in the atmosphere. Human activities have only a small direct influence on atmospheric ...

www.epa.gov › newsreleases › latest-inventory-us-gree...

Latest Inventory of US Greenhouse Gas Emissions and ... - EPA

Latest Inventory of U.S. Greenhouse Gas Emissions and Sinks Shows Long-Term Reductions, with Annual Variation. 04/13/2020. Contact Information:.

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2012 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

www.epa.gov › final-rule-finding-greenhouse-gas-emis...

Final Rule for Finding That Greenhouse Gas Emissions From ...

The EPA finalized findings that greenhouse gas (GHG) emissions from certain classes of engines used in aircraft contribute to the air pollution that causes climate ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2014 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

www.epa.gov › ghgreporting › ghgrp-reported-data

GHGRP Reported Data | Greenhouse Gas Reporting Program ...

Dec 16, 2019 — Reported direct emissions totaled 2.99 billion metric tons carbon dioxide equivalent (CO2e), about half of total U.S. greenhouse gas emissions; ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2008 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

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Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2006 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

www.epa.gov › ghgreporting › ghg-reporting-program...

GHG Reporting Program Data Sets | Greenhouse Gas ... - EPA

The Greenhouse Gas Reporting Program (GHGRP) collects Greenhouse Gas (GHG) data from large emitting facilities, suppliers of fossil fuels and industrial ...

www.epa.gov › files › us-ghg-inventory-2019-main-text PDF

Inventory of US Greenhouse Gas Emissions and Sinks - EPA

Apr 11, 2019 — Notice and is posted on the EPA Greenhouse Gas Emissions web site. ... enhancing the greenhouse effect because both are essentially ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2010 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

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Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2015 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

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Sep 10, 2020 — View the 2013 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

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Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2011 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

www.epa.gov › ghgreporting › ghgrp-petroleum-and-n...

GHGRP Petroleum and Natural Gas Systems | Greenhouse ...

Sep 14, 2020 — Sector - Greenhouse Gas Emissions Reported to the GHGRP (all reported emissions values presented in million metric tons CO2e based on ...

www.epa.gov › documents › 2017_complete_report PDF

Inventory of US Greenhouse Gas Emissions and Sinks - EPA

Apr 15, 2017 — For more information regarding climate change and greenhouse gas ... Water vapor is the largest contributor to the natural greenhouse effect.

www.epa.gov › ghgreporting › ghgrp-waste

GHGRP Waste | Greenhouse Gas Reporting Program ...

Sep 14, 2020 — The waste sector consists of municipal solid waste (MSW) landfills, industrial waste landfills, industrial wastewater treatment systems, and ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Feb 11, 2019 — View the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2016 (published 2018), developed by the U.S. Government to meet ...

www.epa.gov › regulations-greenhouse-gas-emissions-a...

Regulations for Greenhouse Gas Emissions from Aircraft - EPA

EPA proposed greenhouse gas (GHG) emission standards for airplanes used in commercial aviation and for large business jets. This action, if finalized, will align ...

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Guide to Greenhouse Gas Management for Small ... - EPA

change by implementing actions that save money, improve productivity, and lower greenhouse gas (GHG) emissions. This document is a guide to estimating ...

www.epa.gov › greenvehicles › greenhouse-gas-emissi...

Greenhouse Gas Emissions from a Typical Passenger Vehicle ...

May 10, 2018 — This number can vary based on a vehicle's fuel, fuel economy, and the number of miles driven per year. Click on the questions below to learn ...

www.epa.gov › files › us-ghg-inventory-2020-main-text PDF

Inventory of US Greenhouse Gas Emissions and Sinks - EPA

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www.epa.gov › ghgemissions › natural-gas-and-petrole...

Natural Gas and Petroleum Systems | Greenhouse Gas (GHG ...

It is EPA's standard process to update the Inventory of U.S. Greenhouse Gas Emissions and Sinks (GHG Inventory) when relevant new and improved data are ...

www.epa.gov › ghgreporting › key-facts-and-figures

Key Facts and Figures | Greenhouse Gas Reporting Program ...

Sep 14, 2020 — EPA Greenhouse Gas Data Sets. EPA has two complementary programs that publish annual data on U.S. GHG emissions: Inventory of U.S. ...

www.epa.gov › ghgreporting › ghgrp-underground-co...

GHGRP Underground Coal Mines | Greenhouse Gas ...

Sep 14, 2020 — Sector - Greenhouse Gas Emissions Reported to the GHGRP (all emissions values presented in million metric tons CO2e). 2011, 2012, 2013 ...

19january2017snapshot.epa.gov › ghgemissions › glob...

Global Greenhouse Gas Emissions Data - US EPA

Aug 9, 2016 — Global Greenhouse Gas Emissions Data. On This Page: Global Emissions by Gas; Global Emissions by Economic Sector. Trends ...

www.epa.gov › federal-fleets-using-low-greenhouse-ga...

Federal Fleets using Low-Greenhouse Gas Emitting Vehicles ...

Overview. Section 141 of the 2007 Energy Independence and Security Act (EISA) requires federal agencies to acquire low greenhouse gas (GHG) emitting ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2003 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

www3.epa.gov › ttnchie1 › final PDF

AP-42, CH 14.1: Emissions From Soils - Greenhouse ... - EPA

Various agricultural soil management practices contribute to greenhouse gas emissions. The use of synthetic and organic fertilizers adds nitrogen to soils, ...

www.epa.gov › sites › production › files › documents PDF

Emission Factors for Greenhouse Gas Inventories - EPA

Fuel Type. Heat Content (HHV). CO2 Factor. CH4 Factor. N2O Factor. CO2 Factor. CH4 Factor. N2O Factor. mmBtu per short ton kg CO2 per mmBtu g CH4 per ...

www.epa.gov › ghgreporting › greenhouse-gas-reporti...

Greenhouse Gas Reporting Program and the U.S. Inventory of ...

Nov 25, 2019 — These sources are found across all segments of the U.S. economy. EPA is responsible for characterizing greenhouse gas emissions using two ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Feb 11, 2020 — View the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2017 (published 2019), developed by the U.S. Government to meet ...

www.epa.gov › regulations-greenhouse-gas-emissions-...

Regulations for Greenhouse Gas Emissions from Passenger ...

Aug 12, 2020 — The national program for greenhouse gas emissions (GHG) and fuel economy standards for light-duty vehicles (passenger cars and trucks) ...

www.epa.gov › enviro › greenhouse-gas-restful-data-se...

Greenhouse Gas RESTful Data Service | Envirofacts | US EPA

This information is provided for technical experts who intend to work directly with the database. Other users can retrieve information using the Greenhouse Gas ...

www.epa.gov › midterm-evaluation-light-duty-vehicle-...

Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas ...

On April 2, 2018, the Administrator signed the Mid-term Evaluation Final Determination which finds that the model year 2022-2025 greenhouse gas standards are ...

www.epa.gov › energy › greenhouse-gas-equivalencies...

Greenhouse Gas Equivalencies Calculator - Revision History ...

Mcf of natural gas: The emission factor has been updated to 0.0549 metric tons of CO2/Mcf. The previous value was 0.0551 metric tons. Home electricity use: The ...

www.epa.gov › files › documents › 2018_complete_report PDF

Inventory of US Greenhouse Gas Emissions and Sinks - EPA

Apr 12, 2018 — Energy Sources of Indirect Greenhouse Gas Emissions . ... enhancing the greenhouse effect because both are essentially transparent to ...

www.epa.gov › climate-indicators › climate-change-ind...

Climate Change Indicators: Climate Forcing - EPA

Dec 17, 2016 — On the right side of the graph, radiative forcing has been converted to the Annual Greenhouse Gas Index, which is set to a value of 1.0 for 1990.

19january2017snapshot.epa.gov › ghgemissions

Greenhouse Gas (GHG) Emissions | US EPA

Dec 20, 2016 — NEW! Explore 2015 GHG emissions from the largest sources and sectors: Read the Press Release » Explore the data through our map app, ...

www.epa.gov › greenvehicles › archives-fast-facts-us-tr...

Archives of Fast Facts: U.S. Transportation Sector Greenhouse ...

Emissions estimates in the Inventory of U.S. Greenhouse Gas Emissions and Sinks are recalculated each year for the entire time range of the inventory (1990 to ...

www.epa.gov › gmi › importance-methane

Importance of Methane | Global Methane Initiative (GMI) | US ...

Nov 15, 2016 — Methane is also a greenhouse gas (GHG), so its presence in the atmosphere affects the earth's temperature and climate system. Methane is ...

www.epa.gov › enviro › greenhouse-gas-customized-se...

Greenhouse Gas Customized Search | Envirofacts | US EPA

The Greenhouse Gas (GHG) Customized Search retrieves data from the GHF database in Envirofacts. GHG Customized Search allows you to create a report on ...

www.epa.gov › state-and-local-transportation › estimati...

Estimating Greenhouse Gas Emissions | State and Local ...

Jul 1, 2020 — Estimating Greenhouse Gas Emissions. Related Information. Transportation and Climate includes links to "Basic Information," "Regulations and ...

www.epa.gov › sites › production › files › documents PDF

Emission Factors for Greenhouse Gas Inventories - EPA

Coal and Coke. Anthracite Coal. 25.09. 103.69. 11. 1.6. 2,602. 276. 40 short tons. Bituminous Coal. 24.93. 93.28. 11. 1.6. 2,325. 274. 40 short tons.

www.epa.gov › global-mitigation-non-co2-greenhouse-...

Global Non-CO2 Greenhouse Gas Emission Projections ... - EPA

Dec 4, 2019 — Between 1990 and 2015, global non-CO2 emission levels rose by about 29%. - In 2030, the total global non-CO2 GHG mitigation potential is ...

www.epa.gov › ghgemissions › gridded-2012-methane...

Gridded 2012 Methane Emissions | Greenhouse Gas (GHG ...

Sep 11, 2020 — A team at Harvard University along with EPA and other coauthors developed a gridded inventory of U.S. anthropogenic methane emissions ...

www.epa.gov › ghgreporting › ghgrp-chemicals

GHGRP Chemicals | Greenhouse Gas Reporting Program ...

Sep 14, 2020 — The chemical manufacturing sector consists of facilities that manufacture organic or inorganic chemicals. For this summary, the sector is broken ...

www.epa.gov › newsreleases › latest-inventory-us-gree...

Latest Inventory of US Greenhouse Gas Emissions and ... - EPA

Latest Inventory of U.S. Greenhouse Gas Emissions and Sinks Shows Long-Term Reductions. 04/11/2019. Contact Information: EPA Press Office ...

www.epa.gov › ghgreporting › ghgrp-power-plants

GHGRP Power Plants | Greenhouse Gas Reporting Program ...

Sep 14, 2020 — The power plant sector consists of facilities that produce electricity by combusting fossil fuels and/or biomass. The sector includes units that are ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2005 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2007 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

www.epa.gov › ghgreporting › ghgrp-refineries

GHGRP Refineries | Greenhouse Gas Reporting Program ...

Sep 14, 2020 — The refinery sector consists of facilities that produce gasoline, gasoline blending stocks, naphtha, kerosene, distillate fuel oils, residual fuel oils, ...

www.epa.gov › ghgreporting › ghgrp-pulp-and-paper

GHGRP Pulp and Paper | Greenhouse Gas Reporting ...

Sep 14, 2020 — Facilities that have pulping processes report the GHG emissions from chemical recovery units, lime kilns, and stationary fuel combustion units. In ...

www.epa.gov › ghgreporting › ghgrp-metals

GHGRP Metals | Greenhouse Gas Reporting Program ...

Sep 14, 2020 — Primary aluminum, ferroalloy, iron and steel, lead, magnesium, and zinc production facilities report GHG emissions from metal smelting, refining, ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2001 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

enviro.epa.gov › facts › ghg › search

Greenhouse Gas Search | Envirofacts | US EPA

0 - 23,000,000 metric tons CO2e: Min: Max: Filter by Status. Facilities are color coded to designate their verification and reporting status as of EPA's latest data ...

www.epa.gov › final-rule-mandatory-reporting-greenh...

Final Rule for Mandatory Reporting of Greenhouse Gases - EPA

EPA is promulgating a regulation to require reporting of greenhouse gas emissions from all sectors of the economy. The final rule applies to fossil fuel suppliers ...

www.epa.gov › greenvehicles › greenhouse-gas-rating

Greenhouse Gas Rating | Green Vehicle Guide | US EPA

Apr 22, 2020 — This rating reflects vehicle tailpipe emissions of carbon dioxide (CO2), the most prevalent greenhouse gas (GHG). · Vehicles that score a 10 are ...

www.epa.gov › ghgemissions › inventory-us-greenhou...

Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2004 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

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Inventory of US Greenhouse Gas Emissions and Sinks ... - EPA

Sep 10, 2020 — View the 2002 U.S. Greenhouse Gas Inventory developed by the U.S. government to meet U.S. commitments under the United Nations ...

www.epa.gov › global-non-co2-greenhouse-gas-emissi...

Global Non-CO2 Greenhouse Gas Emission Projections ... - EPA

May 18, 2020 — The report Global Non-CO2 Greenhouse Gas Emission Projections & Mitigation Potential: 2015-2050 provides emissions projections and ...

www.epa.gov › ghgreporting › subpart-rr-geologic-seq...

Subpart RR – Geologic Sequestration of Carbon Dioxide - EPA

Finalizes revisions to specific provisions covering 29 subparts of the Greenhouse Gas Reporting Rule to streamline implementation, improve data quality, more ...

Searches related to "greenhouse effect" OR "greenhouse gas" site:epa.gov

greenhouse **gases** effect	greenhouse gas **emissions by country**
greenhouse gas **emissions**	**global** greenhouse gas **emissions by sector**
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CC: Koerber, Mike [Koerber.Mike@epa.gov]; Brown, Annette [Brown.Annette@epa.gov]
Subject: BRIEFING MATERIALS: March 19 Goffman Briefing - PM NAAQS Review Discussion
Attachments: OAR Briefing_PM NAAQS Review Pathways Part 2.docx; OAR Briefing_Draft NAAQS Review Schedules 2021-2029.pdf

Please see the attached materials for the following briefing:

Friday, March 19 @ 1 PM - PM NAAQS Review Discussion

Please let me know if you have any questions.

XAVIER BECERRA
Attorney General

State of California
DEPARTMENT OF JUSTICE

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February 16, 2021

Via Electronic Delivery[1] *and First Class Mail*

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RE: Petition for Reconsideration of "Review of the National Ambient Air Quality Standards for Particulate Matter," 85 Fed. Reg. 82,684 (Dec. 18, 2020).

Dear Acting Administrator Nishida and Dr. Perlmutt:

Please find attached a Petition for Reconsideration submitted on behalf of the States of California (by and through Attorney General Xavier Becerra and the California Air Resources Board), Connecticut, Delaware, Illinois, Maryland, Minnesota, New Jersey, New York, Oregon, Rhode Island, Vermont, Washington, and Wisconsin; the Commonwealths of Massachusetts, Pennsylvania, and Virginia; and the City of New York, with respect to the above referenced action, Docket ID EPA–HQ–OAR–2015–0072.

[1] This Petition is submitted electronically in light of the COVID-19 pandemic and EPA's guidance with respect to hard copy submissions while Agency staff is teleworking. *Notice Regarding "Hard Copy" Submissions to EPA During the COVID-19 National Emergency* (May 12, 2020), https://www.epa.gov/aboutepa/notice-regarding-hard-copy-submissions-epa-during-covid-19-national-emergency.

Sincerely,

/s/ Scott J. Lichtig
SCOTT J. LICHTIG
Deputy Attorney General

For XAVIER BECERRA
Attorney General for the State of California

(Attachments)

cc:
Associate General Counsel for the Air and Radiation Law Office
Office of General Counsel (Mail Code 2344A)
U.S. Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
A-and-R-Docket@epamail.epa.gov

BEFORE THE HONORABLE JANE NISHIDA, ACTING ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN RE PETITION FOR RECONSIDERATION OF REVIEW OF THE NATIONAL AMBIENT AIR QUALITY STANDARDS FOR PARTICULATE MATTER, 85 FED. REG. 82,684 (DECEMBER 18, 2020).

Submitted by:

The States of California (by and through Attorney General Xavier Becerra and the California Air Resources Board), Connecticut, Delaware, Illinois, Maryland, Minnesota, New Jersey, New York, Oregon, Rhode Island, Vermont, Washington, and Wisconsin; the Commonwealths of Massachusetts, Pennsylvania, and Virginia; and the City of New York.

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INTRODUCTION

Pursuant to Clean Air Act Section 307(d), and for the reasons set forth below, the States of California (by and through Attorney General Xavier Becerra and the California Air Resources Board), Connecticut, Delaware, Illinois, Maryland, Minnesota, New Jersey, New York, Oregon, Rhode Island, Vermont, Washington, and Wisconsin; the Commonwealths of Massachusetts, Pennsylvania, and Virginia; and the City of New York (collectively, State Petitioners) hereby petition the U.S. Environmental Protection Agency (EPA) for reconsideration of its recent final action determining that strengthening the National Ambient Air Quality Standard (NAAQS) for particulate matter is not necessary to protect the public health. That action appears in the Federal Register, titled "Review of the National Ambient Air Quality Standards for Particulate Matter," published at 85 Fed. Reg. 82,684 (Dec. 18, 2020). Reconsideration is warranted here because State Petitioners' objections are based on information that arose after the end of the comment period concerning issues of central relevance to EPA's final determination. 42 U.S.C. § 7607(d)(7)(B). Since the close of the public comments, several critical new studies have both demonstrated that the current particulate matter standard is inadequate to protect the public health and have linked previously unidentified harms with increased exposure to particulate matter, health impacts that also disproportionately impact environmental justice communities throughout the nation. State Petitioners urge EPA to expeditiously reconsider the final rule and adopt new particulate matter standards that adequately account for the new information documented by these new studies.

EPA's decision not to strengthen the eight-year old particulate matter NAAQS fails to protect the public health and welfare from the effects of exposure to particulate matter as required under the Clean Air Act and is arbitrary and capricious, an abuse of discretion, and

otherwise in violation of the Act.[1] EPA's decision ignores substantial evidence demonstrating the serious harm to human health from particulate matter exposure at or below the existing NAAQS, repeatedly dismissing studies documenting such significant impacts due to purported "uncertainties." 85 Fed. Reg. at 82,685. In light of these new studies further documenting this harm, EPA should reconsider its decision to retain the standard and act swiftly to correct these fundamental—and ultimately deadly—errors. The public health and welfare cannot wait another five years.

The Clean Air Act requires that EPA reconsider its decision in light of new research released after the close of the public comment period—adding to the mountain of evidence demonstrating the serious harms related to particulate matter exposure and further underscoring the fallacy of any purported uncertainty asserted by EPA.[2] 42 U.S.C. § 7607(d)(7)(B). Specifically, a new study explicitly refutes EPA's assertion that insufficient evidence exists to prove health harm to human health at levels below the existing particulate matter NAAQS, demonstrating clear benefits from further strengthening the particulate matter standards.[3] Another study just published found that fine particulate matter less than 2.5 microns ($PM_{2.5}$) from fossil fuel combustion was responsible for *double* the amount of premature death worldwide than previously believed, and similarly showed significant health benefits from

[1] State Petitioners accordingly filed a petition for review of EPA's final rule on January 13, 2021.
[2] State Petitioners submitted several of these studies to EPA in a Supplemental Comment Letter on November 20, 2020, but EPA's final decision does not adequately address the new information provided.
[3] Joel Schwartz, et al., *A National Difference in Differences Analysis of the Effect of $PM_{2.5}$ on Annual Death Rates* (Journal Pre-Proof), at 20, ENV'T. RSCH., Vol. 194 (Mar. 2021), *available at*: https://www.sciencedirect.com/science/article/abs/pii/S0013935120315462?via%t3Dihub.

reductions in particulate matter even at low levels of exposure.[4] Further, multiple studies have found links between increased mortality from COVID-19 and exposure to $PM_{2.5}$, identifying additional significant potential injury to public health unaddressed in EPA's determination.[5] New research also demonstrates particulate matter exposure can lead to additional negative health impacts from serious neurodegenerative disorders such as Alzheimer's disease and other dementia in older Americans. This new information demonstrates the clear need for EPA to issue stronger standards as quickly as possible.[6]

These new studies further establish that EPA's decision not to lower the particulate matter NAAQS represents a massive failure to address one of the most critical environmental justice issues facing the nation. As noted in State Petitioners' original comments, a study recently estimated that the Black population's $PM_{2.5}$ burden was 54 percent higher than that of the general population, and the Latinx population's $PM_{2.5}$ burden was 20 percent higher.[7] The study also found that those living in poverty experience a $PM_{2.5}$ burden 35 percent greater than the general

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[4] Karn Vohra, et al., *Global Mortality from Outdoor Fine Particle Pollution Generated by Fossil Fuel Combustion: Results from GEOS-Chem* (Journal Pre-Proof), ENV'T. RSCH. (Feb. 9, 2021), *available at*: http://acmg.seas.harvard.edu/publications/2021/vohra_2021_ff_mortality.pdf, and *at*: http://acmg.seas.harvard.edu/publications/2021/vohra_2021_ff_sup.pdf (for Supplemental Materials).

[5] Andrea. Pozzer, et al., *Regional and Global Contributions of Air Pollution to Risk of Death from COVID-19*, 116 CARDIOVASCULAR RSCH. 14, 2247 (Sept. 30, 2020), *available at*: https://academic.oup.com/cardiovascres/advance-article/doi/10.1093/cvr/cvaa288/5940460; Xiao Wu, et al., *Air Pollution and COVID-19 Mortality in the United States: Strengths and Limitations of an Ecological Regression Analysis*, SCI. ADVANCES, at 1 (Nov. 4, 2020), *available at*: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7673673/.

[6] Liuhua Shi et al., *Long-term Effects of $PM_{2.5}$ on Neurological Disorders in the American Medicare Population: A Longitudinal Cohort Study*, 4 THE LANCET E557, (Oct. 19, 2020), *available at*: https://www.thelancet.com/action/showPdf?pii=S2542-5196%2820%2930227-8.

[7] I. Mikati, Disparities in Distribution of Particulate Matter Emission Sources by Race and Poverty Status, 108(4) *Am. J. of Public Health* 480, 482 (Table 1) (Apr. 2018), *available at*: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5844406/.

population. Both COVID-19 and neurocognitive disease, the two illnesses identified as exacerbated by particulate matter exposure, already disproportionately impact Black, Indigenous, and persons of color (BIPOC). Continuing to expose these historically burdened communities to dangerous levels of particulate matter will only exacerbate the disparity in the rates of diseases already suffered by these communities.

EPA must address this cycle of environmental injustice. State Petitioners are encouraged that the White House has identified the particulate matter NAAQS determination as one of EPA's actions to be reviewed for consistency with President Biden's January 20, 2021, "Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis."[8] Promptly re-opening the proceedings would provide the opportunity for public comment on these significant harms and allow for EPA's consideration of this new substantial evidence showing the need for EPA to reduce exposure to particulate matter to protect the public health. Accordingly, the State Petitioners respectfully request that EPA convene proceedings for reconsideration of the final decision or take other appropriate action to efficiently and expeditiously correct the deficient standard. 42 U.S.C. § 7607(d)(7)(B).

LEGAL STANDARD

EPA must convene a reconsideration proceeding if a person raising an objection shows: (1) grounds for the objection arose after the public comment period; and (2) the objection "is of central relevance to the outcome of the rule." 42 U.S.C. § 7607(d)(7)(B). An objection is "of

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[8] *See Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*, Jan. 20, 2021, *available at*: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-protecting-public-health-and-environment-and-restoring-science-to-tackle-climate-crisis/; *see also Fact Sheet: List of Agency Actions for Review*, January 20, 2021, *available at*: https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/fact-sheet-list-of-agency-actions-for-review/.

central relevance" if it provides "substantial support for the argument that the regulation should be revised." *Chesapeake Climate Action Network v. EPA*, 952 F.3d 310, 322 (D.C. Cir. 2020). Furthermore, EPA has discretion to reconsider its actions even where the standards for mandatory reconsideration are not met.

ARGUMENT

The Clean Air Act requires that EPA promulgate and revise the primary NAAQS to assure the standards are stringent enough "to protect public health," with "an adequate margin of safety." 42 U.S.C. § 7409(b)(1). The NAAQS must be based on air quality criteria incorporating the "latest scientific knowledge." *Id.* § 7408(a)(2). Courts have rejected EPA determinations that there is no need to lower the NAAQS level to protect public health or to provide an adequate margin of safety when the agency has failed to properly consider relevant new evidence. *Am. Farm Bureau Fed'n v. E.P.A.*, 559 F.3d 512, 520 (D.C. Cir. 2009); *see also Am. Lung Ass'n v. EPA*, 134 F.3d 388, 392-93 (D.C. Cir. 1998) (EPA must provide adequate explanation for failure to revise NAAQS in light of relevant evidence); *Lead Indus. Ass'n v. EPA*, 647 F.2d 1130, 1154 (D.C. Cir. 1980) (EPA must "err on the side of caution" in favor of more protective standards when setting NAAQS).

I. EPA SHOULD RECONSIDER THE FINAL RULE IN LIGHT OF ITS FAILURE TO PROVIDE THE REQUISITE PROTECTION OF PUBLIC HEALTH AND WELFARE.

The Final Rule is insufficiently protective of public health and welfare and is the product of arbitrary and capricious EPA decision making. Among other things, the agency arbitrarily gave little to no weight to epidemiological studies quantifying the mortality effects from particulate matter exposure, despite the centrality of that issue to the problem EPA is statutorily obligated to address.

Though there is no real doubt as to the value of the epidemiological studies, EPA chose to ignore them without good reason. As noted by Dr. Cristopher Frey, the head of the Independent Particulate Matter Review Panel and former member of the Clean Air Scientific Advisory Committee (CASAC) Review Panel for the 2012 revised PM NAAQS, "the weight of the evidence in this review is far stronger than what was available in the last review."[9] The Independent Particulate Matter Review Panel further noted that its conclusion that the particulate matter standards are insufficient to protect the public health is based on an *overwhelming* scientific consensus determined by conducting:

> [a] review of the scientific evidence from epidemiologic studies, toxicologic studies in animals, and controlled human exposure studies; this evidence is consistent within each discipline and coherent among the multiple disciplines in supporting a causal, biologically plausible relationship between ambient concentrations well below the current $PM_{2.5}$ standards and adverse health effects, including premature death. The epidemiologic evidence is consistent across studies with diverse designs, populations, pollutant mixtures, locations, and statistical approaches.[10]

Instead, EPA hid behind manufactured "uncertainties" alleged by some of members of the CASAC. 85 Fed. Reg. at 82,708, 82,717. But uncertainty is inherent in any scientific research, and can cut both ways—for instance, mortality effects from particulate matter exposure could well be *worse* than epidemiological studies suggest, not better. The statute explicitly requires EPA to account for such uncertainty when its sets the standards, telling EPA to select a standard that is sufficiently protective "with an adequate margin of safety." 42 U.S.C. § 7409(b)(1). EPA

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[9] H. Christopher Frey, Ph.D., Public Comment on the Review of the National Ambient Air Quality Standards for Particulate Matter – The NAAQS PM Science Review Process and Outcome is Broken and Not Credible: EPA Should Follow the Science and the Law to Set Health Protective Annual and 24-Hour $PM_{2.5}$ Standards, 70 (June 29, 2020) (EPA-HQ-OAR-2015-0072-1006) [hereinafter Dr. Frey Comments on Proposed Rule].

[10] H. Christopher Frey, Ph.D., Comment Submitted by H. Christopher Frey, Chair, Independent Particulate Matter Review Panel et al. (Attachment 1 – The Need for a Tighter Particulate-Matter Air-Quality Standard) (June 22, 2020) (EPA-HQ-OAR-2015-0072-0669).

cannot use uncertainty alone to justify not lowering the standards while providing for the necessary margin of safety.

The agency also did not try to mitigate or lessen any uncertainty. Instead, EPA refused to meaningfully consider studies published after the Integrated Science Assessment (ISA), considering them only "provisionally." 85 Fed. Reg. 82,690 – 82,691. EPA considered studies published up to March 31, 2017, for analysis in the ISA, with only a "limited" update for studies published up to December 31, 2017. *Id.* 82,690. In limiting the scope of its review, EPA unlawfully failed to adequately consider substantial scientific evidence that clearly demonstrates the need to reduce ambient concentrations of particulate matter. *See Am. Farm Bureau Fed'n,* 559 F.3d at 520.

Further, as the CASAC commented "the Draft ISA does not provide a sufficiently comprehensive, systematic assessment of the available science relevant to understanding the health impacts of exposure to particulate matter." 85 Fed. Reg. 82,689. The CASAC recommended that EPA revise the ISA to consider a more comprehensive assessment of the available data, but EPA chose not to make any revisions, citing as justification the "back-to-basics" memo drafted by former EPA Administrator Scott Pruitt, in which EPA declared it would conduct the particulate matter NAAQS review in a manner to "ensure" any revisions were "finalized" by December 2020, the last month of the Trump Administration. *Id.* The record is clear that, at every turn, EPA had the opportunity and obligation to consider the full scope of the overwhelming evidence warranting the strengthening of the particulate matter NAAQS, but instead chose to ignore such evidence under the guise of "uncertainty."

Those errors and others *might* have been avoided had EPA not arbitrarily disbanded its particulate matter review panel or unlawfully purged CASAC of knowledgeable scientists whose work EPA had previously found deserving of grant funding, or even if EPA had simply given due consideration to the comments of the leading scientists that—having formerly made up the particulate matter review panel—formed the Independent Particulate Matter Review Panel. But EPA's final failure to promulgate appropriately protective particulate matter standards was nonetheless an unforced error, not an inevitability. The many flaws in EPA's process did not ultimately require that the agency arbitrarily ignore the strong scientific data demonstrating the connection between serious health risks and the current particulate matter standards. State Petitioners therefore request that EPA exercise its discretion to convene reconsideration proceedings to engage in a reasoned review of all of the evidence now before the agency, and that EPA promulgate tighter standards to adequately protect both human health, welfare, and the environment, as the Clean Air Act requires. As noted by Dr. Frey, "[i]f EPA followed the science using the same procedures and logic as in the last review, EPA would be proposing to revise the [particular matter NAAQS]."[11]

II. EPA MUST RECONSIDER THE FINAL RULE IN LIGHT OF NEW STUDIES DEMONSTRATING SIGNIFICANT LONG-TERM HEALTH RISKS FROM PARTICULATE MATTER EXPOSURE.

Further, EPA is statutorily required to convene reconsideration proceedings to evaluate important new evidence that arose after the close of public comment and is of central relevance to EPA's decision not to strengthen the NAAQS to adequately protect public health. These studies include those demonstrating significant public health risks at levels below the current

[11] Dr. Frey Comments on Proposed Rule, *supra* note 9, at 70.

NAAQS, in addition to studies linking particulate matter exposure to serious health impacts related to the COVID-19 pandemic and increases in dementia and other severe neurological disease.

A. Petitioners Were Unable to Raise These Objections During the Public Comment Period Because Key Studies Had Not Yet Been Published.

Since the close of public comments in June 2020, new research has raised serious doubt about the accuracy of EPA's prior justification for not strengthening the particulate matter NAAQS. State Petitioners present several critical new studies below, necessitating reconsideration of EPA's prior decision not to establish stronger standards that adequately protect the public health and safety.

1. A Key New Study Refutes EPA's Claim That Health Impacts from Particulate Matter Exposure Below the Current Standard May Be the Result of Unmeasured Confounders.

A new study to be published in March directly refutes EPA's assertion that strengthening the particulate matter NAAQS is unnecessary due to alleged uncertainties and biases in the available research. Public health researchers have determined that $PM_{2.5}$ exposure at levels below the current standard annual standard of 12 $\mu g/m^3$ is associated with increased mortality, concluding "that reducing $PM_{2.5}$ concentrations in the U.S. could save tens of thousands of premature deaths each year.[12] This new study was developed in direct response to the EPA Administrator's dismissal of the epidemiological studies showing a relationship between health impacts and $PM_{2.5}$ exposure.[13] Specifically, the new study responds to EPA's assertion that

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[13] Joel Schwartz, et al., *supra* note 3, at 17 ("Some scientists . . . assert that studies using standard epidemiological methods should be given little weight in revising the NAAQS, and propose restricting to studies using causal methods .... Their main criticism is that traditional approaches

epidemiological studies "are not necessarily indicative of causal relationships," because such associations "'can reasonably be explained in light of uncontrolled confounding and other potential sources of error and bias.'" 85 Fed. Reg. 82,707. To address the Administrator's unsubstantiated concerns, the researchers developed a "causal method, controlling for temperature and socioeconomic status, and all individual and area level potential confounders, measured or unmeasured, that vary slowly over time."[14] Consistent with the prior epidemiological studies, the researchers found that exposure to $PM_{2.5}$ has significant negative impacts on public health, estimating that reducing the standard by 1 $\mu g/m^3$ could help avoid 239,900 early deaths each year.[15] In other words, the researchers concluded that 1 $\mu g/m^3$ of exposure, at levels below the current standard, for one year "results in an increased risk of dying of 4.26 per ten thousand."[16] Further, because this study's findings support the results of the epidemiological studies dismissed by the Administrator, those "other studies are unlikely to have been confounded by temperature, or slowly varying SES, racial, and behavioral factors which this study controlled for."[17]

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only show associations that may be confounded... and do not inform causality .... [and] individual characteristics, socioeconomic status, and temperature may confound the published literature. EPA recently proposed not tightening the NAAQS for $PM_{2.5}$ relying on these arguments.").

[14] *Id.* at 17-18.

[15] *Id.* at 19.

[16] *Id.*

[17] *Id.*

2. Another New Study Highlights the Deadly Impacts of $PM_{2.5}$ Exposure and the Significant Health Benefits to Strengthening the NAAQS.

A new global study focusing on $PM_{2.5}$ attributable to the burning of fossil fuels demonstrates that exposure to such fine particulate matter causes significantly more disease and death than previously estimated.[18] The study estimates a global toll of 10.2 million annual premature deaths attributable to $PM_{2.5}$ exposure, including over 350,000 premature annual deaths in the United States, highlighting the astoundingly high health impacts from particulate matter exposure related to controllable sources like fossil fuel combustion. Critically, the study also indicates that decreases in $PM_{2.5}$ exposure at levels below the current NAAQS would substantially reduce mortality rates. At a mean exposure rate of 10 $\mu g/m^3$, each 1 $\mu g/m^3$ increase in $PM_{2.5}$ was associated with a 1.29% increase in mortality, whereas that rate decreased significantly to 0.94% at a mean exposure of 20 $\mu g/m^3$, 0.81% at 30 $\mu g/m^3$, and 0.79% at 40 $\mu g/m^3$.[19] This new evidence supports the conclusion that a reduction in the particulate matter NAAQS below the existing standards will substantially reduce mortality rates from particulate matter exposure and is necessary to protect the public health and safety.

3. Newly Available Studies Link Particulate Matter Exposure to Significant Health Impacts from Respiratory Viruses Like COVID-19.

As of February 16, 2021, over 27 million people in the United States have been infected with COVID-19, a deadly virus that attacks the same respiratory and cardiovascular systems harmed by particulate matter exposure.[20] Despite this unprecedented public health crisis and its

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[18] Karn Vohra, et al., *supra* note 4.
[19] *See id.* at supplemental materials 11-12.
[20] COVID Data Tracker, Centers for Disease Control and Prevention (as of Feb. 16, 2021), *available at*: https://covid.cdc.gov/covid-data-tracker/#datatracker-home.

potential long-term health impacts, EPA has determined that no reduction in the particulate matter NAAQS is necessary to protect public health. While preliminary data noted a relationship between COVID-19 and exposure to particulate matter, research published since the close of public comment has clearly established a disturbing link between increased COVID-19 mortality and particulate matter exposure. In light of this new information, EPA must reconsider its decision and strengthen the particulate matter standards.

One study published after the end of public comments found dramatic increases in COVID-19 mortality attributable to exposure to $PM_{2.5}$.[21] The analysis characterized global exposure levels of $PM_{2.5}$ to determine the extent to which such exposure was a cofactor increasing the risk of death from COVID-19. Like the NAAQS, the study focused only on anthropogenic fossil fuel related $PM_{2.5}$ to determine the impact of *avoidable* air pollution on COVID-19 mortality. The findings were stark. In countries with strict air quality standards and lower air pollution like Australia, where the annual $PM_{2.5}$ limit is 8 $\mu g/m^3$, the fraction of COVID-19 mortality attributable to human-made air pollution was 3%.[22] By comparison, in the United States, where the annual $PM_{2.5}$ limit will remain 12 $\mu g/m^3$ under EPA's existing action, the COVID-19 mortality attributable to human-made air pollution was 18%, *six times higher* than the percentage in Australia. A second new study found a direct link between the amount of a region's long-term $PM_{2.5}$ exposure and its COVID-19 mortality rate.[23] Analyzing county-level data in the United States, the study found that a mere 1 $\mu g/m^3$ increase in the long-term average

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[21] A. Pozzer et al., *Regional and Global Contributions of Air Pollution to Risk of Death from COVID-19*, Cardiovascular Research, Sept. 30, 2020, *available at*: https://academic.oup.com/cardiovascres/advance-article/doi/10.1093/cvr/cvaa288/5940460.
[22] *See* Andrea. Pozzer, et al., *supra* note 5, at Supplementary Table, Table S1.
[23] Xiao Wu, et al., *supra* note 5, at 1.

$PM_{2.5}$ is associated with a statistically significant 11% increase in the county's COVID-19 mortality rate.

Such studies serve to highlight the enormous health benefits from reducing particulate matter exposure, which include protecting those who may continue to battle health impacts related to COVID-19's devastation of respiratory systems over the long-term, or "long-haulers."[24] While uncertainty remains about COVID-19's long-term health impacts, initial studies have found instances of severely impaired pulmonary capacities months after initial infections.[25] As the nation confronts the lasting effects of the COVID-19 pandemic, and addresses new mutations and future viruses, EPA also must consider whether the particulate matter NAAQS is sufficiently protective of the public health in light of the long-term respiratory problems faced by recovering patients.

Despite the ongoing respiratory pandemic impacting millions of Americans, EPA's only acknowledgment of COVID-19 comes in a few sentences in its response to comments. Notably, it does not address any of the numerous relevant studies that came out after the close of the comment period, several of which were submitted by State Petitioners in its supplemental letter. It does make the remarkable and wholly unsupported claim that early studies tying COVID-19 to particulate matter exposure were somehow "generally consistent with the evidence assessed in

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[24] *See, e.g.*, Rita Rubin, *As Their Numbers Grow, COVID-19 "Long Haulers" Stump Experts*, JAMA (Sept. 23, 2020), *available at*: https://jamanetwork.com/journals/jama/fullarticle/2771111.

[25] *See* Chaolin Huang, et al., *6-Month Consequences of COVID-19 in Patients Discharged from Hospital: A Cohort Study*, 397 THE LANCET 220-232 (Jan. 8, 2021), *available at*: https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2932656-8. *See also* European Lung Foundation, *COVID-19 Patients Suffer Long-Term Lung and Heart Damage but it Can Improve with Time*, SCIENCE DAILY (Sept. 6, 2020), *available at*: https://www.sciencedaily.com/releases/2020/09/200906202950.htm.

the [Integrated Science Assessment]," Response to Comments, p. 37, despite the fact that the analysis referenced was completed *before* the first reported COVID-19 outbreak.

4. New Studies Show Increases in Serious Neurodegenerative Diseases from Exposure to Particulate Matter.

An important new study demonstrating that increased particulate matter exposure exacerbates the risk of serious neurological disorders also warrants that EPA reconsider its decision not to lower the standards.[26] The study adds critical new evidence to emerging links between particulate matter air pollution and neurodegenerative conditions suffered by millions of American residents, including impaired cognitive function, accelerated cognitive decline, Parkinson's disease, Alzheimer's disease, and dementia.[27] This nationwide, long-term study found significant correlations between increased $PM_{2.5}$ exposure and first-time hospital admittances for diagnoses of Parkinson's disease, Alzheimer's disease, and related dementias in patients over 65.[28] Researchers found a strong linear relationship between incidences of neurodegenerative disease and increases in $PM_{2.5}$ exposure. This linear relationship was observed at $PM_{2.5}$ exposures down to 7μg/m^3—well below the current standard, indicating that lowering the $PM_{2.5}$ standard will have meaningful public health benefits across the country. This study released after the close of public comment further demonstrates the need for EPA to strengthen the particulate matter NAAQS to protect the State Petitioners' populations from the devastating impacts of serious cognitive disorders.

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[26] Liuhua Shi et al., *supra* note 6.
[27] *Id.* at E564.
[28] *Id.* at E557.

B. The Identification of Serious New Threats to Health from Particulate Matter Exposure Are of Central Relevance to EPA's Unlawful Decision.

New evidence of decreased mortality at levels of $PM_{2.5}$ exposure below existing standards and the existence of significant new threats to public health is of "central relevance" to EPA's decision not to strengthen the particulate matter NAAQS, obligating EPA to reconsider the decision. The additional studies clearly "provide substantial support for the argument that the regulation should be revised." *Chesapeake Climate Action Network*, 952 F.3d at 322. To justify its decision that strengthening the particulate matter NAAQS is unnecessary to protect public health with an adequate margin of safety, EPA's decision *repeatedly* cites the "uncertainty" of the health benefits from the studies reviewed.[29] These new studies dispel that alleged uncertainty.

As noted above, EPA's decision rests significantly on its dismissal of several critical epidemiological studies due to assertions that they do not necessarily prove causal relationships between negative health impacts and levels of particulate matter below the current NAAQS standard, pointing to "uncontrolled confounding and other potential sources of error and bias.'" 85 Fed. Reg. 82,707. But the new study by Schwartz et al. cited above successfully demonstrates that uncontrolled factors were not the source of any error and bias, solidifying the link between particulate matter exposure and serious negative health impacts. The study is of central relevance because it addresses and refutes the primary rationale the Administrator relied on to not strengthen the current particulate matter NAAQS, and it also demonstrates significant public

[29] *See* 85 Fed. Reg. 82,685 ("For the primary $PM_{2.5}$ standards, the Administrator concludes that there are *important uncertainties in the evidence* for adverse health effects below the current standards and in the potential for additional public health improvements from reducing ambient $PM_{2.5}$ concentrations below those standards… [The Administrator] concludes that, based on the newly available evidence *with its inherent uncertainties*, the current primary PM_{10} standard is requisite to protect public health, with an adequate margin of safety, from effects of PM_{10} in ambient air, and should be retained, without revision" [emphasis added].)

health impacts from exposure to particulate matter below the current standard. The study conducted by Vohra et al. also cited above further demonstrates the likelihood of substantial public health improvements below the current $PM_{2.5}$ standards and the need for EPA to strengthen the particulate matter NAAQS. Even if purported uncertainties were originally a valid basis for EPA's decision, these new studies substantially lessen any uncertainty, undercutting the basis for EPA's decision and requiring reconsideration.

Further, whatever margin of safety that may be embodied in the current NAAQS is significantly reduced, if not eliminated entirely, once the relationship to COVID-19 and increases in neurocognitive diseases are considered. In light these facts, EPA must strengthen the NAAQS to a level that reintroduces the necessary buffer to provide an adequate margin of safety as required by the Clean Air Act. Even if the COVID-19 pandemic somehow subsides entirely, the long-term respiratory impacts noted above will likely leave significant portions of the public more vulnerable to particulate matter harms. Likewise, the links between particulate matter exposure and devastating neurological diseases like Alzheimer's and Parkinson's, as established in the Shi et al. study discussed above, are particularly relevant to the millions of Americans over 65, a population that is expected to double by 2060. Such a demographic shift in the American population will substantially increase the amount of harm from particulate matter exposure suffered by the overall population.[30] EPA must open reconsideration proceedings in order to fully evaluate these significant negative public health impacts unaddressed in the current particulate matter NAAQS.

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[30] Kevin A. Matthews, et al., *Racial and Ethnic Estimates of Alzheimer's Disease and Related Dementias in the United States (2015–2060) in Adults Aged ≥ 65 Years*, 15 ALZHEIMER'S & DEMENTIA 17-24, (Jan. 2019), *available at*: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6333531/.

The new studies also present further evidence that EPA's decision will only exacerbate existing environmental injustices. As the pandemic enters its second year, COVID-19 has been shown to have a devastating impact on the very same disadvantaged communities already struggling from high particulate matter exposure.[31] Similarly, Alzheimer's disease and related dementias also disproportionately impact the Black and Latinx populations, compared to the non-Hispanic White population.[32] In accordance with President Biden's recent Executive Order committing to address environmental justice[33] and the longstanding disproportionate impacts federal policies have on historically marginalized and overburdened BIPOC communities, EPA should convene reconsideration proceedings in order to address the environmental injustice created by disproportionate exposure to particulate matter.

RELIEF REQUESTED

For the foregoing reasons, State Petitioners respectfully request that the Administrator immediately convene proceedings for reconsideration of the final action. 42 U.S.C. § 7607(d)(7)(B).

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[31] Gregorio A. Millett MPH, et al., *Assessing Differential Impacts of COVID-19 on Black Communities*, 47 Annals of Epidemiology 37-44 (Jul. 2020), *available at*: https://doi.org/10.1016/j.annepidem.2020.05.003.

[32] Kevin A. Matthews et al., *supra* note 30, at 17-24.

[33] *See* Executive Order on Tackling the Climate Crisis at Home and Abroad (Jan. 27, 2021) ("Agencies shall make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.") *Available at*: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/.

Dated: February 16, 2021

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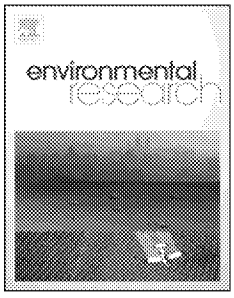

A National Difference in Differences Analysis of the Effect of $PM_{2.5}$ on Annual Death Rates

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PII: S0013-9351(20)31546-2

DOI: https://doi.org/10.1016/j.envres.2020.110649

Reference: YENRS 110649

To appear in: *Environmental Research*

Received Date: 10 November 2020

Revised Date: 16 December 2020

Accepted Date: 17 December 2020

Please cite this article as: Schwartz, J., Wei, Y., Yitshak-Sade, M.'a., Di, Q., Dominici, F., Zanobetti, A., A National Difference in Differences Analysis of the Effect of $PM_{2.5}$ on Annual Death Rates, *Environmental Research*, https://doi.org/10.1016/j.envres.2020.110649.

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A National Difference in Differences Analysis of the Effect of $PM_{2.5}$ on Annual Death Rates

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Abstract

Many studies have reported that $PM_{2.5}$ was associated with mortality, but these were criticized for unmeasured confounding, not using causal modeling, and not focusing on changes in exposure and mortality rates. Recent studies have used propensity scores, a causal modeling approach that requires the assumption of no unmeasured confounders.

We used differences in differences, a causal modeling approach that focuses on exposure changes, and controls for unmeasured confounders by design to analyze $PM_{2.5}$ and mortality in the U.S. Medicare population, with 623,036,820 person-years of follow-up, and 29,481,444 deaths. We expanded the approach by clustering ZIP codes into 32 groups based on racial, behavioral and socioeconomic characteristics, and analyzing each cluster separately. We controlled for multiple time varying confounders within each cluster. A separate analysis examined participants whose exposure was always below 12 $\mu g/m^3$.We found an increase of 1 $\mu g/m^3$ in $PM_{2.5}$ produced an increased risk of dying in that year of 3.85×10^{-4} (95% CI 1.95×10^{-4}, 5.76×10^{-4}). This corresponds to 14,000 early deaths per year per 1 $\mu g/m^3$. When restricted to exposures below 12 $\mu g/m^3$, the increased mortality risk was 4.26×10^{-4} (95% CI 1.43×10^{-4}, 7.09×10^{-4}). Using a causal modeling approach robust to omitted confounders, we found associations of $PM_{2.5}$ with increased death rates, including below U.S. and E.U. standards.

Key words: Air pollution, $PM_{2.5}$, causal, difference in differences, mortality

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Authors contributions: JS conceived the approach, developed the methodology, and did the analysis and reviewed and edited the draft manuscript; YW wrote the first draft and prepared the data; MY-W helped with the programming, methodology and commented on the draft; FD obtained funding and the Medicare data; AZ obtained funding.

Funding: This study was funded by NIH grants ES000002 and ES024332, and U.S. EPA grant RD-83615601. The funders had no input into the design or conduct of the study.

Dr. Schwartz declares that he has testified as a health expert for the U.S. Department of Justice in a law suit over clean air act violations. No other authors have anything to declare.

This study was approved by the Human Subjects Committee of the Harvard School of Public Health.

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1. Introduction

The Clean Air Act requires the US Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) to protect vulnerable populations with an adequate margin of safety. Many studies have reported associations of $PM_{2.5}$ and mortality and morbidity following long and short-term exposure(Abu Awad et al., 2019; Beelen et al., 2014; Crouse et al., 2015; Di et al., 2017; Hoek et al., 2013; Pinault et al., 2016; Pope et al., 2019; Vodonos et al., 2018). These were undertaken by many investigators with over 50 cohorts in the most recent $PM_{2.5}$ meta-analysis(Vodonos et al., 2018), and have resulted in EPA sequentially tightening the $PM_{2.5}$ standard. The global burden of disease ranks air pollution among the largest public health risks.

Recent studies have reported associations between $PM_{2.5}$and mortality at concentrations below the 2012 U.S. EPA NAAQS or World Health Organization air quality guidelines(Di et al., 2017; Wang et al., 2016; Yang et al., 2012). However, some have criticized many of these studies for not using causal modeling approaches.

Causal modeling methods can aid in assessing causality. The general approach is to try to make an observational study closely mimic a randomized trial. In addition, causal methods provide marginal estimates of the effects of exposure, that do not depend on the distribution of the covariates in the study population(Imai and van Dyke, 2004). A common approach is to use propensity score matching or inverse probability weighting to make the exposure independent of all measured confounders(Baccini et al., 2017; Rubin, 1997). Recent studies have used that approach to examine the association of $PM_{2.5}$ with mortality, and provided robust findings(Abu Awad et al., 2019; Schwartz et al., 2018; Wei et al., 2020; Wu et al., 2020; Yitshak-Sade et al., 2019). However, propensity scores only control for measured confounders, and therefore do not address the

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argument that there is unmeasured confounding. Hence it is important to complement that approach using methods that can address unmeasured confounders.

Approaches that control for unmeasured confounders by design include difference-in-differences (DID) analyses (Wang et al., 2016; Yitshak-Sade et al., 2019). In a classical DID model, the mean response is calculated for the exposed and non-exposed groups in pre-exposure and post-exposure periods. Since all slowly varying predictors of outcome such as socioeconomic status (SES), smoking, obesity, etc. are the same in each group in both periods, the difference between outcomes in the two periods in the exposed group cannot be confounded by those variables. The difference between pre-exposure and post-exposure periods in the unexposed group is a negative outcome control for the difference in the exposed group. It controls for changes in an outcome due to covariates that can change between periods similarly between the two locations. The difference in these pairs of differences is a causal estimate, assuming that no other exposure has affected the two groups differently over time(Donald and Lang, 2007). Because the DID approach examines the effect of changes in exposure (post vs pre periods) on change in outcome, it is precisely the type of study that EPA's CASAC says it prefers. The method has been generalized to look at more than two locations, more than two time periods, and continuous, time varying exposures(Wang et al., 2016). With multiple locations time-invariant omitted confounders are controlled using an indicator variable for each location. However, it still require the assumption that changes in mortality rates by year due to changing risk factors are common across locations. Here we simultaneously adopt two approaches to relax that assumption, and hence strengthen the evidence for causality. We apply them to assess whether changes in $PM_{2.5}$ are associated with changes in mortality rates in a national cohort of Medicare participants in the U.S. In addition, as

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few previous cohort studies have controlled for temperature, we adjusted for mean warm season and mean cold season temperature.

2.0 Data and Methods

2.1 Medicare cohort

We obtained the Medicare beneficiary denominator file, which contains information on all Medicare participants in the U.S., from the Centers for Medicare and Medicaid Services(RESDAC, 2018). We followed all beneficiaries' ≥65 years in the contiguous U.S. from 2000 to 2016. Medicare insurance covers over 95% of the population ≥65 years of age in the United States. Medicare participants alive on January 1 of the year following their enrollment in Medicare entered the open cohort, and follow-up periods were calendar years. For the DID analysis, we computed an annual mortality rate in each ZIP code, in each group stratified by age (>84 or not), sex, race, and Medicaid coverage. This study was approved by the human subjects committee at the Harvard T. H. Chan School of Public Health.

2.2 Covariates

From the Medicare denominator file for each calendar year, we obtained the age, sex, race, ZIP code of residence for that year, eligibility for Medicaid for that year, and date of death (or censoring) of each participant. Age, ZIP code, and Medicaid eligibility were updated annually. This file is publicly available from the Centers for Medicare and Medicaid Services(RESDAC, 2018).

We obtained small area–level social, economic, and housing characteristic variables from the U.S. Census Bureau 2000 and 2010 Census Summary File 3(Bureau, 2010) at the ZIP code tabulation–area level (ZCTA) and the American Household Survey for each year after 2010. These included percent of people ≥ 65 living in poverty, median household income, median house value, percent

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of owner occupied homes, percent black, percent Hispanic, population density, and education. We updated these variables for missing years by linearly extrapolating between the measured years. In addition, the county-level percentage of people who ever smoked and their mean body mass index (BMI) were obtained from the CDC Behavioral Risk Factor Surveillance survey(CDC, 2013) , which were then assigned to each ZCTA within the county and updated each year. From the Dartmouth Health Atlas, we obtained percentage of Medicare participants who had a hemoglobin A1c test, a low-density lipoprotein cholesterol (LDLC) test, a mammogram, an eye exam, and a visit to an annual checkup for each year in each hospital catchment area and assigned it to all ZCTAs in that area(Wennberg and Cooper, 1996). We also computed the distance from each ZIP code centroid to the nearest hospital. To capture long-term smoking history of Medicare participants in each ZIP code, we computed their hospitalization rate for lung cancer by ZIP code for each year. This risks over-control because air pollution has been associated with increased risk of lung cancer. To capture year-to-year changes in mortality rates due to temperature, we downloaded daily temperature data on a 12km grid from the NASA NLDAS-2 website (https://ldas.gsfc.nasa.gov/index.php/nldas/v2/models). We averaged all grid cells within the boundaries of a ZIP code, and constructed two measures for each year, the average temperature in the warm months (April-September) and in the cold months (October-March).

2.3 Exposure assessment

We estimated exposure using a validated prediction model calibrated to measurements at almost 2000 monitoring stations using an ensemble of machine learners that provided daily estimates for a 1km grid of the contiguous U.S.(Di et al., 2019; Di et al., 2020). In brief, the model used data from multiple sources including predictions of chemical transport models (GEOS-Chem, CMAQ, and MERRA-2), meteorological data, land-use terms, and satellite-based measures of aerosol

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optical depth, surface reflectance, and absorbing aerosol index. We trained a neural network, a random forest, and a gradient boosting machine to monitoring data from the United States Environmental Protection Agency (EPA) Air Quality System to generate daily predictions on a 1×1 km grid. The models were fit using data from all years. The three predictions for $PM_{2.5}$ were combined in a nonlinear geographically weighted regression. The model showed good performance with ten-fold cross validation on held out monitoring sites yielding an out of sample R^2 of 0.89 for annual average predictions of $PM_{2.5}$. Penalized splines showed linear relationships between observed and predicted $PM_{2.5}$ from 0 to 60 $\mu g/m^3$. Predictions for all grid cells whose centroids were inside the ZIP code boundary were averaged for each year and assigned to participants in that ZIP code in that year.

2.4 Statistical analysis

The standard DID estimator for a continuous predictor posits that

$$E(Y_{ij}) = \beta_0 + \beta_1 PM_{2.5} + \beta_2 C_i + \beta_3 X_t \quad (1)$$

where Y_{ij} is the mortality rate in ZIP code i in demographic group (by age >84 or not, sex, race, and Medicaid coverage) j, C_i are the time-invariant or slowly changing confounders in ZIP code i, X_t are the time varying confounders that are common across ZIP codes. The C_i are controlled by fitting individual intercepts for each ZIP code. The time varying confounders are removed by fitting a nonlinear time trend; we used a natural spline function of year with 3 degrees of freedom, yielding:

$$E(Y_{ij}) = \beta_0 + \beta_1 PM_{2.5} + \delta_i + ns(year, 3) \quad (2)$$

where δ_i is a dummy variable for each ZIP Code. Since ZIP code is controlled, this model compares year-to-year variations around ZIP code average $PM_{2.5}$ and common time trend to year-

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to-year variations of mortality rates about ZIP code average and common time trend. Differences in e.g. SES, smoking, or diabetes between ZIP code are removed by the dummy variable for ZIP code. For a causal interpretation of the DID estimate to hold, we must assume that all the ZIP codes have parallel long-term time trends in mortality rates, other than those caused by different time trends in $PM_{2.5}$.

If covariates producing different time trends in mortality rate by ZIP code are not correlated with ZIP code specific $PM_{2.5}$ trends, the interpretation still holds. It would be preferable to further weaken this assumption.

We added two methods to relax the parallel trends assumption, and combined them in our analysis. We added to equation (2) terms for confounders that we have measured that change over time, possibly differentially by ZIP code. This will control for any temporal trends due to changes in these covariates, which include the SES, race, demographic, behavioral, and health access variables described above. Second, we grouped ZIP codes based on the above covariates and fit separate time trends in each group. We think that ZIP codes that are similar in racial composition, percent living below the poverty level, population density, smoking rates etc. are more likely to have similar time trends in mortality rates than disparate ZIP codes. To accomplish this, we fit a principal component analysis to all the listed potential confounders and took the first 5 principal components. We classified each ZIP code into whether it was higher or lower than average on each of the 5 components, producing 32 categories of ZIP codes. In each of these 32 categories of ZIP codes, we fit separate splines for time trend and separate control for all of the covariates. This controls for time trends in measured covariates such as racial composition, median income, etc, and fits 32 separate time trends to the data to capture any trends unexplained by time trends in the measured covariates. It also allows the effects of the measured covariates to differ by the 32

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different groups. In addition by performing analyses stratified by the 32 different groups we are also controlling by matching for the covariate clusters (e.g. SES and race) that characterize each group. Combining these, the final modeling approach is to fit 32 models (k=1:32) and meta-analyze the 32 values of β_1.

$$E(Y_{ij}, k) = \beta_0 + \beta_{1k} PM25 + \delta_i + \delta_{jk} + ns(year, 3, k) + \beta_3 X_{tk} \quad (3)$$

Here δ_i are indicator variables for each ZIP code, X_{tk} are the time varying covariates whose time trends may differ by ZIP code and by which group (k) the ZIP code is in, $ns(year, 3, k)$ is a natural spline for time trend with 3 degrees of freedom for each group k, and δ_{jk} is an indicator variable for each age-race-sex-Medicaid stratum in group k. Results were combined over strata using a random effects meta-analysis.

Finally, equation (3) embodies an additive, rather than multiplicative model for the rate of mortality in each ZIP code-demographic group. This allows us to estimate the additive effect of $PM_{2.5}$ on the probability of dying, provides more interpretative interaction terms, and provides a marginal effect estimate (i.e. not dependent on the distribution of the covariates, as a multiplicative model would be). Additive probability or rate models give unbiased estimates of effect just as the more usual logistic models, but biased estimates of standard errors(Caudill and Jackson, 1989). Therefore have used robust standard errors to estimate the confidence intervals. In a second analysis, we reran the analysis on data restricted to persons whose exposure was always below 12 $\mu g/m^3$, the U.S. standard for $PM_{2.5}$.

3.0 Results

Table 1 shows the characteristics of the Medicare cohort between 2000 and 2016. There were 623,036,820 person-years of follow-up during the study, and 29,481,444 deaths. 85.4% of the

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participants were white, and 12.9% were covered by Medicaid, which provides additional benefits to the poor. The mean $PM_{2.5}$ during the study was 10.3 $\mu g/m^3$.

Table 1

Variable	Values
Year	
Mean (SD)	2009.5 (4.90)
Median [25%, 75%]	2010 [2004, 2013]
Male	42.8 %
Race	
Black	8.4%
Other	6.2%
White	85.4%
Age > 84	13.2%
Medicaid Coverage	12.9%
ZIP Code Covariates	
Median Income	
Mean (SD)	$53,177 ($22,082)
Median [25%, 75%]	$47,998 [$38,030, $63,031]

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Median House Value	
Mean (SD)	$200,139 ($159,728)
Median [25%, 75%]	$150,400 [$98,600, $240,300]
Percent ZIP code Black	
Mean (SD)	11% (17.9%)
Median [25%, 75%]	3.7% [1.1%, 12.0%]
Percent ZIP code Hispanic	
Mean (SD)	12.6% (16.4%)
Median [25%, 75%]	5.3% [2.1%, 14.6%]
Percent >65 below poverty	
Mean (SD)	9.5% (6.5%)
Median [25%, 75%]	7.9% [5.3%, 11.8%]
Percent Low Education	
Mean (SD)	25.3% (14.7%)
Median [25%, 75%]	22.6% [14.2%, 33.7%]
Percent with annual Mammogram	
Mean (SD)	63.7% (7.2%)
Median [25%, 75%]	63.9% [59.2%, 68.2%]

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Percent with ambulatory Visit	
Mean (SD)	77.8% (6.2%)
Median [25%, 75%]	79.0% [74.4%, 82.1%]
Population Density (persons/mi^2)	
Mean (SD)	3397 (9032)
Median [25%, 75%]	967 [167, 3353]
Percent Owner Occupied	
Mean (SD)	68% (16%)
Median [25%, 75%]	70.8% [59.8%, 79.2%]
Mean BMI (kg/m^2)	
Mean (SD)	27.5 (1.58)
Median [25%, 75%]	27.3 [26.7, 28.0]
Distance to nearest hospital (km)	
Mean (SD)	6.5 (7.4)
Median [25%, 75%]	3.90 [1.98, 8.07]
Ever Smoker	
Mean (SD)	46.2% (6.8%)
Median [25%, 75%]	46.2% [41.8%, 50.4%]

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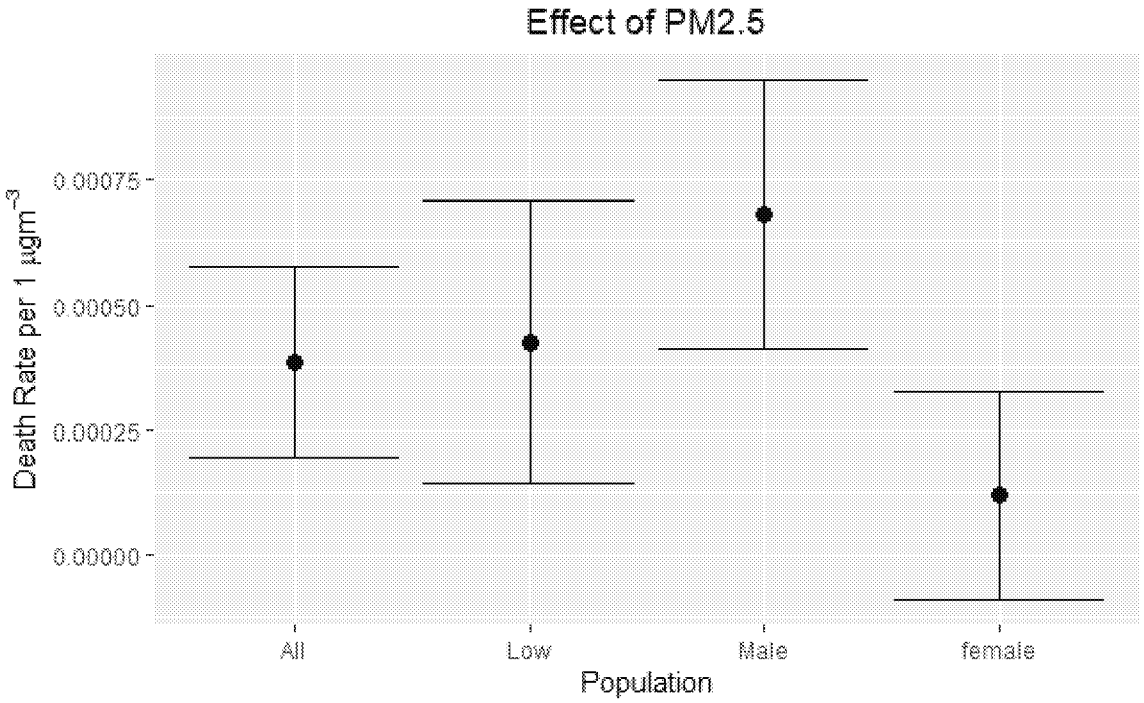
Percent annual HbA1c test	
Mean (SD)	83.1% (4.9%)
Median [25%, 75%]	83.7% [80.5%, 86.3%]
Lung Cancer Rate (x 10^{-4})	
Mean (SD)	3.9 (2.8)
Median [25%, 75%]	3.3 [1.9, 4.9]
Percent annual LDL	
Mean (SD)	79.5% (6.2%)
Median [25%, 75%]	80.1% [76.1%, 83.5%]
Percent Annual Eye Exam	
Mean (SD)	67.4% (6.4%)
Median [25%, 75%]	67.1% [63.9%, 71.0%]
$PM_{2.5}$ ($\mu g/m^3$)	
Mean (SD)	10.3 (3.1)
Median [25%, 75%]	9.8 [7.9, 12.0]

In the meta-analysis of the results of the 32 strata-specific DID analyses, we found that the probability of dying in each year increased by $3.85x10^{-4}$ (95% CI $1.95 x10^{-4}$, $5.76 x10^{-4}$) for each 1 $\mu g/m^3$ increment in $PM_{2.5}$ in that year. The I^2 statistic for heterogeneity was 42%. When we restricted our analysis to persons whose exposure was always below 12 $\mu g/m^3$ during the follow-up period, we found a larger effect size, with the probability of dying in each year increased by $4.26 x10^{-4}$ (95% CI $1.43x10^{-4}$, $7.09 x10^{-4}$) per 1 $\mu g/m^3$ increase in $PM_{2.5}$. Interaction terms for male gender, age > 84, and race were fit in the full data. Sex was a significant modifier (p for interaction <0.001), with larger effects in males ($6.81x10^{-4}$, 95% CI $4.14x10^{-4}$, $9.48x10^{-4}$) then females($1.20x10^{-4}$, 95% CI $-8.80x10^{-5}$, $3.29x10^{-4}$). These results are shown in Figure 1. There was no interaction by age. Interaction models for race did not converge because residential segregation in the U.S. resulted in groups with too few Blacks or Asians and other races. Instead, we reran the analysis without separate models for each of the 32 groups. There was no significant interaction by race.



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4.0 Discussion

Using a difference in differences design applied to a linear rate model, we found that each 1 $\mu g/m^3$ increment in $PM_{2.5}$ was associated with a 3.85 $x10^{-4}$ increase in the probability of dying in a given year. If the difference in differences assumptions are met, this is a causal increase. We believe they are met for the following reasons. First, since this design controls for each ZIP code, all individual and neighborhood level confounders that change little over time are controlled, whether measured or not. This includes most of the variables (e.g. SES, smoking history, diet) that have be posited as potential confounders. Consequently, only time varying factors can be confounders. Second, we controlled for potential confounding in each ZIP code due to time trends in median household income, median home value, percent owner occupied housing, percent of ZIP code that is Black, percent of households that are Hispanic, percent of persons aged 65 or older living in poverty, smoking rate, BMI, Medicaid eligibility, educational attainment, population density, lung cancer rates, multiple measures of the adequacy of medical care, and summer and winter temperature. Third, we grouped the ZIP codes by these factors, and fit separate nonlinear time trends within each of 32 groups to capture any remaining time trends due to omitted confounders could differ between groups, but would be similar within group. This approach effectively looks at the within ZIP code fluctuations in exposure around the ZIP code mean, trend due to measured time-varying covariates, and common trends by group of ZIP codes. It compares that to the same deviation in mortality. Such an approach, looking at yearly deviations from trend and ZIP code mean in exposure and outcome, is inherently examining the relationship of changes in exposure to changes in outcome. This also addresses the issue of whether previous studies effects are due to primarily recent exposure, or reflect long term exposure, including when pollution concentrations were

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higher. The dummy variable for each ZIP code controls for long term exposure at that ZIP code, and the removal of nonlinear time trends during the period under study focuses the exposure variable on the year of the death. EPA Regulatory Impact Analyses spread the estimated mortality effects out over a 20 year period. This study provides an estimate of immediate impact. Because our study incorporates 17 years of follow-up, each year has a new exposure, and a new effect.

In addition this paper adds to the sparse literature controlling for temperature in studies of long-term exposure to air pollution, which some have argued is an important confounder. Further, we estimated the probability of dying in a year, which is more easily interpretable than an instantaneous hazard rate, and by using an additive rather than multiplicative model we estimated the marginal effect if $PM_{2.5}$, not the conditional effect estimated by Cox's proportionate hazard model. This allows one to estimate attributable deaths in health impact assessments without making further, possibly implausible assumptions required when using a conditional estimate.

Some scientists, including the current chair of EPA's Clean Air Scientific Advisory Committee (CASAC), assert that studies using standard epidemiological methods should be given little weight in revising the NAAQS, and propose restricting to studies using causal methods, and particularly ones showing changes in air quality are associated with changes in mortality(CASAC, 2019). The recent meetings of EPA's CASAC highlighted the importance of these issues(CASAC., 2019). Their main criticism is that traditional approaches only show associations that may be confounded, vary depending on modeling approaches, and do not inform causality, which can only be addressed by causal methods. They also emphasize that unmeasured variables, particularly individual characteristics, socioeconomic status, and temperature may confound the published literature.(Cox and Popken, 2015) EPA recently proposed not tightening the NAAQS for $PM_{2.5}$, relying on these arguments. This paper provides an analysis using a causal method, controlling for

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temperature and socioeconomic status, and all individual and area level potential confounders, measured or unmeasured, that vary slowly over time.

That EPA proposal also asserted there was insufficient evidence of a causal association at lower levels. When we restricted our analysis to include only persons who never experienced concentrations above 12 $\mu g/m^3$ during 17 years of follow-up we found a somewhat larger effect estimate of 4.26×10^{-4} (95% CI 1.43×10^{-4}, 7.09×10^{-4}) per 1 $\mu g/m^3$ increase in $PM_{2.5}$. This indicates that the current U.S. and E.U. standards are not sufficient to protect public health, and that the WHO standard of 10 $\mu g/m^3$ is unlikely to protect public health.

Other studies have applied causal modeling methods to air pollution, primarily propensity score methods(Abu Awad et al., 2019; Schwartz et al., 2018; Wang et al., 2017; Wei et al., 2020; Wu et al., 2020; Yitshak-Sade et al., 2019). These methods use the relationship between exposure and confounders to render the exposure independent of all of the measured confounders, and hence mimic a randomized trial. They have all reported that $PM_{2.5}$ increases mortality rates. The difference in differences approach complements those studies by its ability to deal with unmeasured confounders. All personal and small area time invariant or slowly varying confounders are removed by design, whether measured or not. All confounders whose time trends are due to measured time-varying confounders or similar within groups defined by race, SES, medical access, and behavioral characteristics are controlled whether measured or not. Hence, this paper adds assurance about many possible unmeasured confounders to the large literature of associational studies and smaller literature of propensity score-based models that provide causal estimates. Together, they provide strong evidence for a causal effect of $PM_{2.5}$ on mortality rates.

Since we estimate the probability of dying in each year and not a hazard rate, our effect sizes are not directly comparable to the other causal modeling studies. Compared to the larger literature, a

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recent meta-analysis of then extant cohort studies estimated the effect size at 10 μg/m^3 (the mean concentration in this study) as a 1.29% increase in the rate per μg/m^3 increase in PM2.5, (95% CI 1.09%, 1.50%)(Vodonos et al., 2018).The annual mortality rate in the Medicare cohort was 4.7x10^{-2}. A 1.29% increase in that rate is an additive increase of 6.1x10^{-4}. The results from a previous Cox regression analysis of the Medicare cohort from 2000-2012 translate to an additive increase of 3.4x10^{-4}. These are similar to our results. Hence these other studies are unlikely to have been confounded by temperature, or slowly varying SES, racial, and behavioral factors which this study controlled for.

Nor are these effects small. Multiplying our effect estimates by the total person-years in the Medicare cohort, we estimate that had everyone had 1 μg/m^3 lower exposure, 239,900 early deaths would have been avoided during the follow-up period. EPA's National Contingency Plan (40 C.F.R. § 300.430(d)(1)) states that the range of acceptable **lifetime risks** (of developing cancer) for carcinogens should be set between 1 in 10,000 and 1 in a million over a 70-year lifetime. Thus, when EPA considers regulations for carcinogens, it typically regulates if **lifetime risks** exceed 1 in a hundred thousand. In contrast, 1 μg/m^3 of exposure below the current EPA standard for only 1 year results in an increased risk of dying of 4.26 per ten thousand in our study.

Our finding has limitations. First, DID analyses depend on the change over time in other ZIP codes with different changes in $PM_{2.5}$ to serve as controls for changes over time in outcome that may have occurred independent of exposure. If the time trends in the ZIP codes are different, this control will fail. We have dealt with this by controlling for time trends in measured covariates and grouping ZIP codes into 32 groups that are similar on age, sex, race/ethnicity, SES, and access to medical care, and doing the analysis separately within each group, arguing that the time trends in

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mortality rates will be similar within group. However, we cannot exclude the possibility that they are not. Second, our exposure estimates are not perfect. While an out of sample R^2 of 0.89 is high, there is still some exposure error, which may bias estimates. In addition, personal exposure within a neighborhood varies around the neighborhood ambient concentration. However, we believe most of that difference is likely to be Berksonian error, and hence not bias coefficients. Moreover, the principle reason for the differences between ambient and personal exposure are behavioral (more driving, more cooking, etc), and incorporating exposure related to those factors would require controlling for other related risk factors (e.g. stress from driving) that are not confounders of the neighborhood ambient concentrations. Hence, this exposure error is beneficial from the point of view of reducing confounding, as has been pointed out previously(Weisskopf and Webster, 2017).

In conclusion, we have found an effect of $PM_{2.5}$ on daily deaths using a causal modeling approach robust to unmeasured confounders. The effect size is similar to those reported in associational studies, suggesting that unmeasured confounders are not an issue with them, and is large enough to indicate that reducing $PM_{2.5}$ concentrations in the U.S. could save tens of thousands of premature deaths each year.

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Figure Legend. Figure 1 shows the effect size estimate (absolute increase in the death rate for each 1 $\mu g/m^3$ increase in $PM_{2.5}$ exposure, and 95% Confidence Interval) for the entire Medicare Cohort in 2000-2016 (All), for only persons never exposed to $PM_{2.5}$ concentrations above 12 $\mu g/m^3$ (low) during the follow-up period, for males in the entire Medicare Cohort (males) and for females in the entire Medicare Cohort.

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Declaration of interests

☐ The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

☒The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Dr. Schwartz declares that he has testified as a health expert for the U.S. Department of Justice in a law suit over clean air act violations. No other authors have anything to declare.

Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem

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Keywords; particulate matter, fossil fuel, mortality, health impact assessment

Abstract

The burning of fossil fuels – especially coal, petrol, and diesel – is a major source of airborne fine particulate matter ($PM_{2.5}$), and a key contributor to the global burden of mortality and disease. Previous risk assessments have examined the health response to total $PM_{2.5}$, not just $PM_{2.5}$ from fossil fuel combustion, and have used a concentration-response function with limited support from

the literature and data at both high and low concentrations. This assessment examines mortality associated with $PM_{2.5}$ from only fossil fuel combustion, making use of a recent meta-analysis of newer studies with a wider range of exposure. We also estimated mortality due to lower respiratory infections (LRI) among children under the age of five in the Americas and Europe, regions for which we have reliable data on the relative risk of this health outcome from $PM_{2.5}$ exposure. We used the chemical transport model GEOS-Chem to estimate global exposure levels to fossil-fuel related $PM_{2.5}$ in 2012. Relative risks of mortality were modeled using functions that link long-term exposure to $PM_{2.5}$ and mortality, incorporating nonlinearity in the concentration response. We estimate a global total of 10.2 (95% CI: -47.1 to 17.0) million premature deaths annually attributable to the fossil-fuel component of $PM_{2.5}$. The greatest mortality impact is estimated over regions with substantial fossil fuel related $PM_{2.5}$, notably China (3.9 million), India (2.5 million) and parts of eastern US, Europe and Southeast Asia. The estimate for China predates substantial decline in fossil fuel emissions and decreases to 2.4 million premature deaths due to 43.7% reduction in fossil fuel $PM_{2.5}$ from 2012 to 2018 bringing the global total to 8.7 (95% CI: -1.8 to 14.0) million premature deaths. We also estimated excess annual deaths due to LRI in children (0-4 years old) of 876 in North America, 747 in South America, and 605 in Europe. This study demonstrates that the fossil fuel component of $PM_{2.5}$ contributes a large mortality burden. The steeper concentration-response function slope at lower concentrations leads to larger estimates than previously found in Europe and North America, and the slower drop-off in slope at higher concentrations results in larger estimates in Asia. Fossil fuel combustion can be more readily controlled than other sources and precursors of $PM_{2.5}$ such as dust or wildfire smoke, so this is a clear message to policymakers and stakeholders to further incentivize a shift to clean sources of energy.

Introduction

The burning of fossil fuels – especially coal, petrol, and diesel – is a major source of airborne particulate matter (PM) and ground-level ozone, which have both been implicated as key contributors to the global burden of mortality and disease (Apte et al., 2015; Dedoussi and Barrett, 2014; Lim et al., 2013). A series of studies have reported an association between exposure to air pollution and adverse health outcomes (Brook et al., 2010), even at low exposure levels (< 10 μg m^{-3}, the current World Health Organization, WHO, guideline) (Di et al., 2017). The Global Burden of Diseases, Injuries, and Risk Factors Study 2015 (GBD 2015) identified ambient air pollution as a leading cause of the global disease burden, especially in low-income and middle-income countries (Forouzanfar et al., 2016). Recent estimates of the global burden of disease suggest that exposure to $PM_{2.5}$ (particulate matter with an aerodynamic diameter < 2.5 μm) causes 4.2 million deaths and 103.1 million disability-adjusted life-years (DALYs) in 2015, representing 7.6% of total global deaths and 4.2% of global DALYs, with 59% of these in east and south Asia (Cohen et al., 2017).

A series of newer studies conducted at lower concentrations and at higher concentrations have reported higher slopes than incorporated into the GBD using the integrated exposure–response (IER) curve (Burnett et al., 2014). These studies examined mortality due to exposure to $PM_{2.5}$ at concentrations below 10 μg m^{-3} in North America (Di et al., 2017; Pinault et al., 2016) and above 40 μg m^{-3} in Asia (Katanoda et al., 2011; Tseng et al., 2015; Ueda et al., 2012; Wong et al., 2015; 2016; Yin et al., 2017). Here we have used a concentration-response curve from a recently published meta-analysis of long-term $PM_{2.5}$ mortality association among adult populations which incorporates those new findings at high and low $PM_{2.5}$ concentrations (Vodonos et al.,

2018). We also focus our study on the health impacts of fossil-fuel derived $PM_{2.5}$. In contrast, GBD reports only the health impacts of total $PM_{2.5}$ and does not distinguish mortality from fossil-fuel derived $PM_{2.5}$ and that from other kinds of $PM_{2.5}$, including dust, wildfire smoke, and biogenically-sourced particles. We focus only on $PM_{2.5}$ since recent studies have provided mixed results on the link between ozone and mortality (Atkinson et al., 2016) and there does not exist a global coherent concentration-response function (CRF) for ozone.

The developing fetus and children younger than 5 years of age are more biologically and neurologically susceptible to the many adverse effects of air pollutants from fossil-fuel combustion than adults. This differential susceptibility to air pollution is due to their rapid growth, developing brain, and immature respiratory, detoxification, immune, and thermoregulatory systems (Bateson and Schwartz, 2008; Perera, 2018). Children also breathe more air per kilogram of body weight than adults, and are therefore more exposed to pollutants in air (WHO, 2006; Xu et al., 2012). The WHO estimated that in 2012, 169,000 global deaths among children under the age of 5 were attributable to ambient air pollution (WHO, 2016). Further estimation of the burden of mortality due to $PM_{2.5}$ (particularly from anthropogenic sources) among the young population would highlight the need for intervention aimed at reducing children's exposure.

Using the chemical transport model GEOS-Chem, we quantified the number of premature deaths attributable to ambient air pollution from fossil fuel combustion. Improved knowledge of this very immediate and direct consequence of fossil fuel use provides evidence of the benefits to current efforts to cut greenhouse gas emissions and invest in alternative sources of energy. It also helps quantify the magnitude of the health impacts of a category of $PM_{2.5}$ that can be more readily controlled than other kinds of $PM_{2.5}$ such as dust or wildfire smoke.

Materials and methods

Calculation of surface $PM_{2.5}$ concentrations

Previous studies examining the global burden of disease from outdoor air pollution have combined satellite and surface observations with models to obtain improved estimates of global annual mean concentrations of $PM_{2.5}$ (Shaddick et al., 2018). However, the goal of such studies was to quantify the health response to $PM_{2.5}$ from all sources, both natural and anthropogenic (Brauer et al., 2016; Cohen et al., 2017). Here the focus of our study is on surface ambient $PM_{2.5}$ generated by fossil fuel combustion, and for that we rely solely on the chemical transport model GEOS-Chem since current satellite and surface measurements cannot readily distinguish between the sources of $PM_{2.5}$. Results from GEOS-Chem have been extensively validated against surface, aircraft, and space-based observations around the world, including simulation of surface pollution over the United States (Drury et al., 2010; Ford and Heald, 2013; Heald et al., 2012; Leibensperger et al., 2012; Marais et al., 2016; Zhang et al., 2012), Asia (Koplitz et al., 2016; Lin et al., 2014), Europe (Protonotariou et al., 2013; Veefkind et al., 2011), and Africa (Lacey et al., 2017; Marais et al., 2014a; 2014b; 2016; 2019). The model has also been applied to previous studies quantifying the global burden of disease from particulate matter from all sources (Brauer et al., 2016; Cohen et al., 2017).

In this analysis we used GEOS-Chem with fossil fuel emissions from multiple sectors (power generation, industry, ships, aircraft, ground transportation, backup generators, kerosene, oil/gas extraction), detailed oxidant-aerosol chemistry, and reanalysis meteorology from the NASA Global Modeling and Assimilation Office. Fossil fuel emissions are from regional inventories where these are available for the US, Europe, Asia, and Africa, and from global

inventories everywhere else (such as Mexico, Australia, South America and Canada). More details of the specific fossil fuel inventories used in GEOS-Chem are in Table S1. Global-scale simulations in GEOS-Chem were carried out on a coarse spatial grid (2° × 2.5°, about 200 km × 250 km). Four regional simulations were also performed at fine spatial scale (0.5° × 0.67°, about 50 km × 60 km) for North America, Europe, Asia, and Africa using boundary conditions from the global model. The regional simulations allow for a better match with the spatial distribution of population, thus enhancing the accuracy of the estimates of health impacts. All simulations were set up to replicate 2012 pollution conditions. As described in the Supplemental Material, we find that globally, GEOS-Chem captures observed annual mean $PM_{2.5}$ concentrations with a spatial correlation of 0.70 and mean absolute error of 3.4 $\mu g\ m^{-3}$, values which compare well with those from other models (Shindell et al., 2018; Xing et al., 2015). We performed two sets of simulations: one set with fossil fuel emissions turned on and the other with such emissions turned off. We then assumed that the difference between the two sets of simulations represents the contribution of fossil fuel combustion to surface $PM_{2.5}$. More information on our choice of GEOS-Chem, the model setup, details of relevant anthropogenic emissions, and model validation is described in the Supplemental material.

Population and Health data

We used population data from the Center for International Earth Science Information Network (CIESIN) (CIESIN, 2018). The Gridded Population of the World, Version 4 Revision 11 (GPWv4.11) is gridded with an output resolution of 30 arc-seconds (approximately 1 km at the equator). Since the population data are provided only at five-year intervals, we applied 2015 population statistics to the results of our 2012 GEOS-Chem simulation. CIESIN population data

was then aggregated to the spatial scale of the model for the exposure estimates. Country/region level data on baseline mortality rates were from GBD data for 2015 (based on the 2017 iteration) (IHME, 2017). USA state-specific mortality rates were obtained from the CDC Wide-ranging Online Data for Epidemiologic Research (WONDER) compressed mortality files (WONDER). Canada death estimates by province were obtained from Statistics Canada, CANSIM (Canada, 2018).

$PM_{2.5}$ mortality concentration –response model

The risk of air pollution to health in a population is usually estimated by applying a concentration–response function (CRF), which is typically based on Relative Risk (RR) estimates derived from epidemiological studies. CRFs are necessary elements for the quantification of health impacts due to air pollution and require regular evaluation and update to incorporate new developments in the literature.

Global assessments of air pollution risk often use the Integrated Exposure-Response model (IER) (Burnett et al., 2014), which combined information on $PM_{2.5}$–mortality associations from non-outdoor $PM_{2.5}$ sources, including secondhand smoke, household air pollution from use of solid fuels, and active smoking. The IER used data from active smoking and passive smoking to address the limited number of outdoor $PM_{2.5}$ epidemiologic studies at $PM_{2.5}$ > 40 $\mu g\ m^{-3}$ available at the time. The IER formed the basis of the estimates of disease burden attributable to $PM_{2.5}$ (e.g., 4 million deaths in 2015 in GBD 2015). This function was then updated in 2018 using the Global Exposure Mortality Model (GEMM). In GEMM, data from 41 epidemiological cohort studies were applied (Burnett et al., 2018). Independently conducted analyses were conducted on 15 of these cohorts to characterize the shapes of $PM_{2.5}$–mortality associations in each cohort, using a specified functional form of the CRF. For the remaining 26

cohorts, the concentration-response was examined with a linear concentration hazard ratio model. A recent meta-analysis of the association between long-term $PM_{2.5}$ and mortality (Vodonos et al., 2018) applied techniques involving flexible penalized spline CRF in a multivariate random effects and meta-regression model. This approach allows the data to specify the shape of the CRF. The meta-regression pooled 135 estimates from 53 studies examining long-term $PM_{2.5}$ and mortality of cohorts aged 15 years and older. The estimate of the confidence intervals about the CRF includes a random variance component. This meta-analysis provided evidence of a nonlinear association between $PM_{2.5}$ exposure and mortality in which the exposure-mortality slopes decreases at higher concentrations (Figure S5 in Supplemental Material). We have chosen to use the dose-response function from the meta-analysis rather than the GEMM function as the meta-regression approach is more flexible and does not constrain the CRF to a specific functional form, it incorporates a random variance component in estimating the uncertainty around that curve, it is derived with more studies than previous approaches, and its estimates at high and low exposures are closer to the estimates in cohorts restricted to only very high and very low exposures. To ensure consistency with the concentration-response curve, premature mortality rates for the portion of the population >14 years of age were determined using the population and baseline mortality rates for different age groups from GBD data for 2015.

Health impact calculations

We estimated the number of premature deaths attributable to fossil fuel $PM_{2.5}$ using: (1) GEOS-Chem $PM_{2.5}$ estimated with all emission sources and GEOS-Chem $PM_{2.5}$ estimated without fossil fuel emissions, as a comparison against the first simulation, (2) total population above the age of 14 gridded to the GEOS-Chem grid resolution, (3) baseline all-cause mortality rates for

population above the age of 14 (per country or per state in the US and province in Canada), and (4) the meta-analysis CRF (Vodonos et al., 2018). All health impacts were calculated on a per-grid basis at the spatial resolution of the model. We applied the following health impact function to estimate premature mortality related to exposure to fossil fuel $PM_{2.5}$ in each GEOS-Chem grid cell:

$$\sum \Delta y = y_o * p * AF \quad (1)$$

$$AF = \frac{\exp^{(\bar{\beta}*\Delta x)}-1}{\exp^{(\bar{\beta}*\Delta x)}} \quad (2)$$

$$\bar{\beta}(PM_{2.5})=\int_{PM_{2.5}\ \text{no fossil fuel}}^{PM_{2.5}\ \text{all emissions}} \beta(PM_{2.5}) \quad (3)$$

where Δy is the change in the number of premature deaths due to exposure to fossil fuel $PM_{2.5}$, y_o is the country/state/province specific baseline (all-cause) mortality rate, p is to the total population above the age of 14, AF is the attributable fraction of deaths (the fraction of total deaths attributable to $PM_{2.5}$ exposure), $\bar{\beta}$ is the mean estimate for long-term $PM_{2.5}$ mortality concentration-response over a range of concentrations from the penalized spline model in the recent meta-analysis, and Δx is the change in $PM_{2.5}$ concentration, calculated as the difference between GEOS-Chem $PM_{2.5}$ with all emissions and GEOS-Chem $PM_{2.5}$ without fossil fuel emissions.

For each country, we summed the change in premature deaths (Δy) in each grid cell over all grid cells in that country. To estimate the change in deaths between the two scenarios (with and without fossil fuel combustion), we computed the change in deaths in each grid cell, based on its

population, baseline rate, and exposure under the two scenarios (Equation (1)). The attributable fraction (AF), or proportion of deaths estimated as due to long-term exposure to $PM_{2.5}$ fossil fuel air pollution, was calculated using the concentration-response estimate, following the form shown in Equation (2) (Figure S5 in Supplemental material). Because these estimates of mortality concentration response (β) are a nonlinear function of concentration, we used the penalized spline model predictions from this meta-analysis to integrate the concentration-specific β in each grid cell from the low $PM_{2.5}$ scenario (without fossil fuel emissions) to the high $PM_{2.5}$ scenario (with all emissions, including fossil fuel). In this way, we could calculate a mean value of β for each grid cell. There exist insufficient epidemiological data to calculate a robust health response function specific to fossil-fuel $PM_{2.5}$. GEOS-Chem is a deterministic model. Therefore, our 95% confidence intervals (CI) for our estimates reflect only the 95% CI for the concentration response function.

Secondary analysis among children <5 years old

Lower respiratory infections (LRI), including pneumonia and bronchiolitis of bacterial and viral origin, are the largest single cause of mortality among young children worldwide and thus account for a significant global burden of disease worldwide (Nair et al., 2010). As mentioned previously, young children are more susceptible to the adverse effects of particulate air pollution than adults. Mehta et al. (2013) estimated the overall impact of $PM_{2.5}$ concentration with Relative Risk (RR) of 1.12 for LRI mortality per 10 $\mu g\ m^{-3}$ increase in annual average $PM_{2.5}$ concentration, as compared to RR of 1.04 for respiratory mortality among adults (Vodonos et al., 2018). We estimated the number of premature deaths attributable to $PM_{2.5}$ among children under the age of 5 years due to a range of LRI classifications (ICD-10, International Classification of Diseases codes: A48.1, A70, J09-J15.8, J16-J16.9, J20-J21.9, P23.0-P23.4). Baseline numbers of deaths due to LRI were obtained from the GBD for 2015 (IHME, 2017). We used the Relative

Risk (RR) of 1.12 (1.03-1.30) for LRI occurrence per 10 μg m^{-3} increase in annual average $PM_{2.5}$ concentration (Mehta et al., 2013). Studies of longer-term exposure of $PM_{2.5}$ and LRI in that meta-analysis were conducted in only a few developed countries with relatively low levels of annual mean $PM_{2.5}$ (< 25 μg m^{-3}), specifically the Netherlands, Czech Republic, Germany, Canada and USA. We therefore calculated the number of premature LRI deaths attributable to $PM_{2.5}$ only in North America, South America, and Europe.

Results

Impact of fossil fuel use on $PM_{2.5}$

Figure 1 shows the difference between global GEOS-Chem $PM_{2.5}$ with and without fossil fuel emissions, plotted as the annual mean for 2012. Results show large contributions of 50-100 μg m^{-3} in $PM_{2.5}$ over China and India, with smaller increments of 10-50 μg m^{-3} over large swaths of the United States and Europe, industrialized countries in Africa (South Africa and Nigeria), and along the North African coastline due to European pollution.

Global assessment of mortality attributable to $PM_{2.5}$

Based on the annual $PM_{2.5}$ simulation with and without global fossil fuel emissions, we estimated the excess deaths and attributable fraction (AF %) for the population above 14 years old. Figure 2 shows the simulated annual global premature mortality due to exposure to ambient $PM_{2.5}$ from fossil fuel emissions. Greatest mortality is simulated over regions with substantial influence of fossil-fuel related $PM_{2.5}$, notably parts of Eastern North America, western Europe, and South-East Asia.

We estimated a total global annual burden premature mortality due to fossil fuel combustion in 2012 of 10.2 million (95% CI: -47.1 to 17.0 million). Table 1 reports the baseline number of deaths for people >14 years old, the annual $PM_{2.5}$ simulation with and without global fossil fuel emissions, the estimated excess deaths, and the attributable fraction for the populated continents. As shown in Table 1, we calculated 483,000 premature deaths in North America (95% CI: 284,000-670,000), 187,000 deaths in South America (95% CI: 107,000-263,000), 1,447,000 deaths in Europe (95% CI: 896,000-1,952,000), 7,916,000 deaths in Asia (95% CI: -48,106,000 to 13,622,000), and 194,000 deaths in Africa (95% CI: -237,000 to 457,000). The wide confidence intervals in Asia and Africa are due to the lack of data for areas where the exposure remains outside the range of the concentration response curve ($PM_{2.5}$ > 50 $\mu g\ m^{-3}$; Figure S5). The population-weighted pollution concentrations presented in Table 1 are higher than the average $PM_{2.5}$ concentrations for each country, since fossil-fuel $PM_{2.5}$ is mainly emitted in populous areas. The two countries with the highest premature mortality are China with 3.91 million and India with 2.46 million. Supplemental Table S2 provides extended data of the health impact calculations for each country. For comparison, Table 1 also reports the number of premature deaths attributable to fossil fuel $PM_{2.5}$ when the GEMM function is applied to the GEOS-Chem output. For most regions, the number of premature deaths calculated with GEMM is significantly lower than that calculated with the new function from Vodonos et al. (2018). Globally, the GEMM function yields 6.7 million deaths in 2012 due to fossil fuel combustion.

Assessment of children (under the age of 5) LRI mortality attributable to $PM_{2.5}$

We estimated the number of premature deaths attributable to $PM_{2.5}$ among children under the age of 5 due to LRI only for those countries or regions with levels of annual $PM_{2.5}$

concentrations below 25 μg m^{-3}. These include North America, South America, and Europe. Based on the annual $PM_{2.5}$ simulation with and without fossil fuel emissions, we calculated 876 excess deaths due to LRI in North and Central America, 747 in South America, and 605 in Europe (Table 2). Using the GBD estimate of total deaths due to LRI (Institute for Health Metrics and Evaluation), we estimate that $PM_{2.5}$ from fossil fuel combustion accounted on average for 7.2% of LRI mortality among children under the age of 5 in these regions, with the largest proportion of 13.6% in Europe (95% CI -0.4 to 25.3%) .

Discussion

We used the chemical transport model GEOS-Chem to quantify the global mortality attributed to $PM_{2.5}$ air pollution from fossil fuel combustion. Using the updated concentration response relationship between relative mortality and airborne $PM_{2.5}$, we estimated global premature mortality in 2012 of 10.2 million per year from fossil fuel combustion alone. China has the highest burden of 3.91 million per year, followed by India with 2.46 million per year. These estimates carry large uncertainty (e.g., 95% CI of -47.1 to 17.0 million for the global estimate) from the concentration-response curve, as it is an improved function that provides a more realistic picture of the health consequences of $PM_{2.5}$ compared to previous studies.

Our estimate is for the year when fossil fuel emissions in China peaked and so predates large and dramatic reductions in fossil fuel emissions due to strict mitigation measures. These reductions led to a 30-50% decline in annual mean $PM_{2.5}$ across the country from 2013 to 2018 (Zhai et al., 2019). If we apply a 43.7% reduction in GEOS-Chem $PM_{2.5}$ concentrations from the simulation with all emission sources, premature mortality in China decreases from 3.91 million to

293 2.36 million. India has recently imposed controls on pollution sources, but there is not yet evidence
294 of air quality improvements in densely populated cities like Delhi (Vohra et al., 2020).
295 Consideration of the 2012-2018 decrease in $PM_{2.5}$ exposure in China reduces the total global
296 premature mortality due to fossil fuel $PM_{2.5}$ from 10.2 million premature deaths each year to 8.7
297 (95% CI: -1.8 to 14.0) million.

298 In 2012, the population-weighted $PM_{2.5}$ is 72.8 μg m^{-3} for China and 52.0 μg m^{-3} for India
299 from all sources and 9.9 μg m^{-3} for China and 9.0 μg m^{-3} for India without fossil fuel emissions.
300 The low value of non-fossil fuel $PM_{2.5}$ is reasonable for southern India (Dey et al., 2012) but may
301 be an underestimate in the Indo-Gangetic Plain where crop residue burning contributes to high
302 levels of $PM_{2.5}$ (100-200 μg m^{-3}) during the post-monsoon season (Ojha et al., 2020). An increase
303 in the concentration of non-fossil-fuel $PM_{2.5}$ would decrease our estimate of the number of
304 premature deaths due to fossil fuel $PM_{2.5}$ in India and China, as this would decrease the risk of
305 premature mortality with a unit change in $PM_{2.5}$ (Figure S5).

306

307 *Comparison with previous estimates of global mortality attributable to outdoor $PM_{2.5}$*

308 Previous estimates of the GBD for 2015 suggest that exposure to total $PM_{2.5}$ causes 4.2
309 million deaths (Cohen et al., 2017), whereas here we estimate more than double (10.2 million) the
310 number of premature deaths from fossil fuel combustion alone in 2012. Differences between the
311 current study and the 2015 GBD lower estimates are related mainly to the choice of the shape of
312 the concentration-response function and the relative risk estimate. First, to provide information
313 about exposure response at higher concentrations, the 2015 GBD study used the integrated
314 exposure–response (IER) model in which active and second-hand smoking exposures were

converted to estimated annual $PM_{2.5}$ exposure equivalents using inhaled doses of particle mass (Burnett et al., 2014). Recent cohort studies from Asia indicate that this substantially underestimates the CRF at high concentrations. In contrast, in the current study we applied a CRF that was directly estimated from $PM_{2.5}$ studies alone, as described in a recent meta-analysis that included estimates from studies in countries like China with higher $PM_{2.5}$ concentrations than our included in previous derivations of CRFs (Vodonos et al., 2018). The CRF from this recent meta-analysis flattens out at higher concentrations, as does the IER curve. However, this flattening is not as great as in the IER, as Asian cohort studies at high $PM_{2.5}$ concentrations report larger effects than would be expected from the IER. Hence estimates of the global attributable fraction of deaths due to air pollution using the function from the recent meta-analysis are higher than the estimates using the IER function. In addition, at much lower concentrations ($< 10\ \mu g\ m^{-3}$), we applied higher slopes than assumed in the IER function. Recent studies at very low concentrations similarly show that the IER underestimated effects in this range (Pinault et al., 2016). Since GEOS-Chem estimated quite low concentrations in developed countries in Europe and North America, the number of premature deaths from $PM_{2.5}$ in these countries is greater than previous estimates.

Following an approach similar to the recent meta-analysis (Vodonos et al., 2018), Burnett et al. (2018) modeled the shape of the association between $PM_{2.5}$ and non-accidental mortality using data from 41 cohorts from 16 countries with GEMM. In that study, the uncertainty in a subset (15 cohorts) was characterized in the shape of the concentration-response parameter by calculating the Shape-Constrained Health Impact Function, a prespecified functional form. These estimated shapes varied across the cohorts included in the function. GEMM predicted 8.9 million (95% CI: 7.5–10.3) deaths in 2015 attributable to long-term exposure to $PM_{2.5}$ from all sources; 120% higher excess deaths than previous estimates, but still lower than our estimate of mortality from exposure

to fossil-fuel derived $PM_{2.5}$ for 2012. Lelieveld et al. (2019) estimated the global and regional mortality burden of fossil fuel attributable $PM_{2.5}$ by applying the GEMM CRF to a global chemistry-climate model that is overall coarser (~1.9° latitude and longitude) than the model used in this work. The authors reported 3.61 million deaths per year attributable to pollution from fossil fuel combustion and 5.55 million deaths per year due to pollution from all anthropogenic sources. The estimated deaths from fossil fuel combustion are much lower than those in the current study for several reasons. First, the meta-analysis function used in our work includes 135 coefficients of all-cause mortality for adults aged 14-64 years old, together with cause-specific mortality and all-cause mortality among adults aged 65 and older, thus incorporating many more studies in a meta-regression framework than the 41 cohorts and coefficients in the GEMM function. Second, the approach used to estimate the CRF in Vodonos et al. (2018) allows for additional flexibility in the shape of the function because of its use of penalized splines. In contrast, the GEMM pooled CRF integrates a set of 26 log-linear functions and 15 functions characterized by three parameters governing the shape of the function. Third, while Cohen et al. (2017), Lelieveld et al. (2019) and Burnett et al. (2018) accounted for mortality from five specific causes (ischemic heart disease, stroke, chronic obstructive pulmonary disease, lung cancer and acute respiratory infections), in the current analysis we estimated changes in deaths from all causes. Fourth, some of the difference in the mortality estimates may come from differences in the age range. Our approach considers a wider population age range of over 14 years old (Vodonos et al., 2018) compared to the other studies, which considered a population age range of over 25 years (Burnett et al., 2018; Cohen et al., 2017; Lelieveld et al., 2019). Our approach has wider age range since the age range for the studies in the meta-analysis (Vodonos et al., 2018) included people younger than 25 years old (Hart et al., 2011; Pinault et al., 2016) . Finally, the finer spatial resolution that GEOS-Chem

utilizes over much of the globe improves co-location of PM hotspots and population centers, yielding higher estimates of excess mortality compared to Lelieveld et al. (2019).

Limitations

There are a number of limitations that must be acknowledged. First, vulnerability to $PM_{2.5}$ exposure may vary by population characteristics such as ethnicity, socio-economic status (SES), risk behaviors such as smoking and underlying comorbidities (Krewski et al., 2000; Pope et al., 2004; Wang et al., 2017) and by different exposure characteristics. We were limited in our ability to undertake a comprehensive analysis of factors influencing the association between $PM_{2.5}$ and mortality since the global mortality data were not available by detailed age, ethnicity, SES, lifestyle, and underlying disease strata. In addition, the 95% CI of our estimates reflect the lower and upper bound of the CRF, which flattens out at higher concentrations. Regions with very high concentrations (>50 $\mu g\ m^{-3}$) are beyond the data range in the meta-analysis; thus, the lower limit of the CI for those regions (China, West and North Africa; Table 1) are much less than zero. Second, for LRI in children, we have restricted our analysis to developed countries with annual $PM_{2.5} < 25\ \mu g\ m^{-3}$, in accordance with the geographical locations of the studies included in the meta-analysis by Mehta et al. (2013). Developing countries have much higher LRI mortality rates, and this restriction doubtless results in an underestimate. Finally, GEOS-Chem estimates of $PM_{2.5}$ concentrations almost certainly contains errors in estimates of emissions of pollution precursors, meteorological effects on air quality, and representation of the complex physical and chemical formation pathways. In the absence of systematic bias, such model error may not produce large

aggregate errors in the mortality burden of $PM_{2.5}$, but bias may be present as well. In any event, it is challenging to estimate the true size of this error.

Conclusions

The effects of CO_2-driven climate change on human health and welfare are complex, ranging from greater incidence of extreme weather events, more frequent storm-surge flooding, and increased risk of crop failure (Duffy et al., 2019). One consequence of increasing reliance on fossil fuel as an energy source that has thus far received comparatively little attention is the potential health impact of the pollutants co-emitted with the greenhouse gas CO_2. Such pollutants include $PM_{2.5}$ and the gas-phase precursors of $PM_{2.5}$. This study demonstrates that the fossil fuel component of $PM_{2.5}$ contributes a large global mortality burden. By quantifying this sometimes overlooked health consequence of fossil fuel combustion, a clear message is sent to policymakers and stakeholders of the co-benefits of a transition to alternative energy sources.

Acknowledgments

This study was funded by the Wallace Global Fund, the Environment and Health Fund (EHF) Israel, and a University of Birmingham Global Challenges Fund PhD studentship awarded to KV.

Declaration of interests

We declare no competing interests.

401 **Data availability.** GEOS-Chem code and output are available at the GEOS-Chem website
402 (http://acmg.seas.harvard.edu/geos_chem.html) and upon request.

Figures

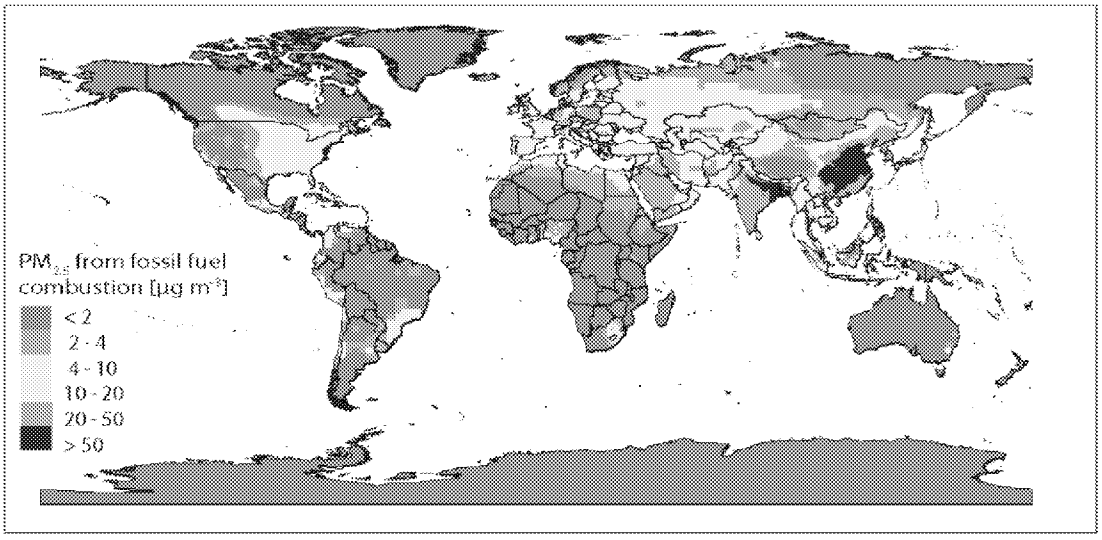

Figure 1: Contribution of fossil fuel combustion to surface $PM_{2.5}$, as calculated by the chemical transport model GEOS-Chem. The plot shows the difference in surface $PM_{2.5}$ concentrations from GEOS-Chem with and without fossil fuel emissions.

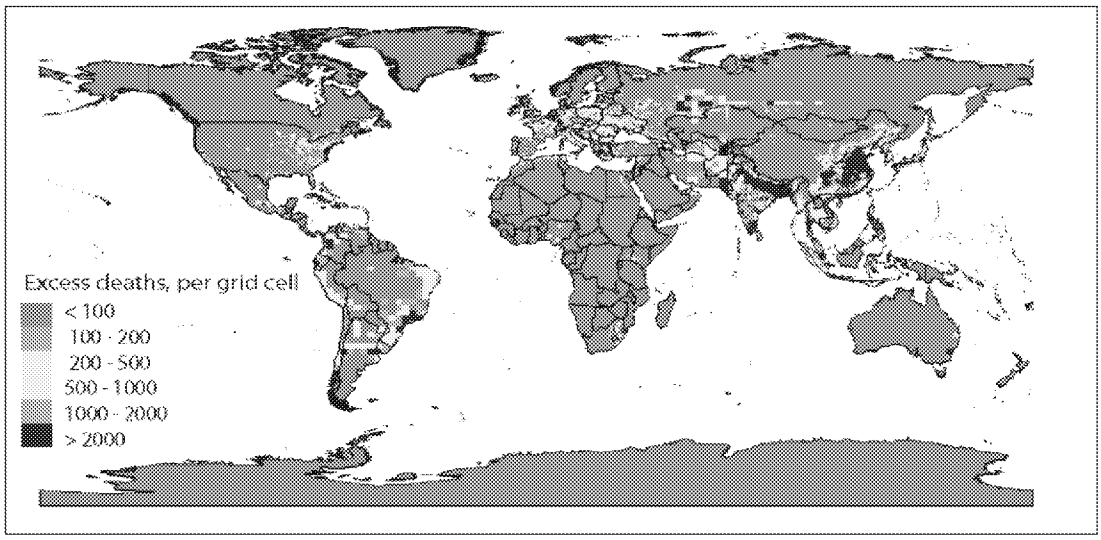

Figure 2. Estimated annual excess deaths due to exposure to ambient $PM_{2.5}$ generated by fossil fuel combustion.

Table 1. Number of deaths attributable to exposure to fine particulate matter ($PM_{2.5}$) generated by fossil fuel combustion for the population >14 years old

GEOS-Chem spatial grid resolution[a]	Region[b]		Total deaths >14 years old, in thousands	Population-weighted annual mean $PM_{2.5}$ concentration, μg m^{-3}			Mean attributable fraction of deaths, % (95% CI)[d]	Deaths attributable to fossil-fuel related $PM_{2.5}$, in thousands (95% CI)[c]	GEMM function deaths attributable to fossil-fuel related $PM_{2.5}$, in thousands (95% CI)[e]
				$PM_{2.5}$ from all emission sources	$PM_{2.5}$ without fossil fuel	Estimated $PM_{2.5}$ from fossil fuel, %			
Fine	North America	Central America & the Caribbean	1,148	10.06	3.03	7.03 (69.9)	8.2 (4.5-11.6)	94 (52-133)	80 (62-98)
		USA	2,705	11.81	2.15	9.66 (81.8)	13.1 (7.8-18.1)	355 (212-490)	305 (233-375)
		Canada	250	12.01	1.76	10.25 (85.4)	13.6 (8.0-18.7)	34 (20-47)	28 (22-35)
Coarse	South America		2,389	8.66	3.02	5.65 (65.2)	7.8 (4.5-11.0)	187 (107-263)	159 (121-195)
Fine	Europe		8,626	19.22	4.68	14.54 (75.7)	16.8 (10.4-22.6)	1,447 (896-1,952)	1,033 (798-1,254)
Fine	Asia	Eastern Asia	25,468	51.72	8.68	43.05 (83.2)	30.7 (-189.1-52.9)	7,821 (-48,150-13,478)	4,945 (3,943-5,826)
Coarse		Western Asia & the Middle East	1,456	26.95	20.73	6.22 (23.1)	6.5 (3.0-9.9)	95 (44-144)	54 (43-65)
Fine	Africa		5,274	32.98	28.98	4.00 (12.1)	3.7 (-4.5-8.7)	194 (-237-457)	102 (81-121)
Coarse	Australia & Oceania		189	4.17	2.19	1.98 (47.4)	3.2 (1.6-4.8)	6.0 (2.9-9.0)	6.4 (4.8-7.9)
	Global		47,506	38.01	11.14	26.87 (70.7)	21.5 (-99.0-35.7)	10,235 (-47,054-16,972)	6,713 (5,308-7,976)

[a] Fine spatial scale is 0.5° × 0.67°, or about 50 km × 60 km. Coarse spatial scale is 2° × 2.5°, or about 200 km × 250 km

[b] List of countries for each region and subregion is provided in supplemental Table S2

[c] Annual number of deaths attributable to long-term exposure to $PM_{2.5}$ derived from fossil fuel combustion. CI is the confidence interval.

[d] Mean proportion of all deaths which can be attributed to long-term exposure to $PM_{2.5}$ generated by fossil fuel combustion, averaged over the country or region. CI; confidence interval.

[e] Attributable deaths calculated with the Global Exposure Mortality Model (GEMM) concentration-response function. [44]

Table 2. Number of deaths due to lower respiratory infection (LRI) attributable to exposure to fine particulate matter ($PM_{2.5}$) from fossil fuel combustion for the population <5 years old

Region	Total deaths for children <5 years old due to LRI	LRI deaths attributable to fossil-fuel $PM_{2.5}$ (95% CI) [a]	Mean attributable fraction of deaths, % (95% CI) [b]
North America	**13,230**	**876 (-26-1,657)**	**6.6 (-0.2-12.5)**
Central America & the Caribbean	12,507	802 (-23-1,516)	6.4 (-0.2-12.1)
USA	672	69 (-2-131)	10.2 (-0.3-19.5)
Canada	50	5 (0-10)	10.8 (-0.3-20.5)
South America	**13,231**	**747 (-21-1,443)**	**5.7 (-0.2-10.9)**
Europe	**4,446**	**605 (-18-1,126)**	**13.6 (-0.4-25.3)**

[a] Annual number of deaths attributed to long-term exposure to $PM_{2.5}$ derived from fossil fuel combustion.

[b] Mean proportion of deaths due to long-term exposure to $PM_{2.5}$ generated by fossil fuel combustion. CI is the confidence interval.

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Supplemental Material

Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem

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Description of GEOS-Chem.

Table S1. GEOS-Chem anthropogenic emissions. All emissions are scaled to 2012 conditions.

Figure S1. Uncertainty in 2012 $PM_{2.5}$ due to interannual variability.

Figure S2. Representativeness of $PM_{2.5}$ in 2012, calculated as the absolute difference in 2012 and 2008-2016 mean $PM_{2.5}$ from Dalhousie (van Donkelaar et al., 2016) at 0.1°×0.1°.

Figure S3. Evaluation of GEOS-Chem $PM_{2.5}$. Points are annual mean $PM_{2.5}$ for coincident 0.5°×0.667° grid squares with at least 75% temporal coverage in the observations.

Figure S4. Comparison of the spatial distribution of observed and modeled $PM_{2.5}$ in Europe and North America. Data are on a uniform 0.5°×0.667° grid.

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Figure S5. Estimates for long-term $PM_{2.5}$ mortality dose-response, drawn from the meta-analysis of long-term association between $PM_{2.5}$ and mortality.

Figure S6. Hazard Ratio based on GEMM function (Burnett et al., 2018) compared to the Hazard Ration based on the meta-analysis.

Table S2. Extended data. Global regions, number of deaths, attributable fraction (%) for the population above 14 years old attributable to fine particulate matter ($PM_{2.5}$) exposure.

References

Description of GEOS-Chem.

GEOS-Chem is a three-dimensional chemical transport model that includes detailed oxidant-aerosol chemistry in the troposphere and is used by more than 80 groups worldwide (www.geos-chem.org). The model is widely cited in the peer-reviewed literature – e.g., more than 4000 times in the year 2017 alone (http://acmg.seas.harvard.edu/geos/geos_pub.html). The model has been frequently applied to interpret observed $PM_{2.5}$ in regions dominated by anthropogenic sources – e.g., China (Aunan et al., 2018), Korea (Lee et al., 2017), India (Venkataraman et al., 2018), and the US (Di et al., 2016; Silvern et al., 2017); and validation has been performed for specific source sectors – e.g., transportation (Travis et al., 2016), biogenic sources (Marais et al., 2017), and power plants (S. W. Wang et al., 2012). Here we use GEOS-Chem v10-01, driven by 2012 GEOS-5 meteorology (gmao.gsfc.nasa.gov/GEOS_systems/). The GEOS-5 data are produced at 0.5°×0.667° horizontal resolution and are re-gridded here to 2°×2.5° for the global simulation. We also perform four regional simulations – for Europe, North America, Africa, and Asia – and for these simulations we keep the native grid resolution. Boundary conditions at 2°×2.5° from the global simulation are applied to these regional simulations. Most fine-scale, regional models, such as the Community Multiscale Air Quality Model, rely on chemical boundary conditions from global models with different chemical schemes, but our approach permits application of a consistent scheme across the globe. The 0.5°×0.667° horizontal resolution in GEOS-Chem over key regions is, however, relatively coarse compared to that in some other regional models. Y. Li et al. (2016) show that application of coarse resolution leads

to an underestimate of health impacts of 8%, implying that our mortality estimates are conservative. Our choice of 2012 as the simulation year is discussed below.

GEOS-Chem simulates the mass concentrations of key particle types including sulfate, nitrate, and ammonium (Park et al., 2004; L. Zhang et al., 2012), organic carbon (Heald et al., 2006; 2011) black carbon (Q. Q. Wang et al., 2014), dust (Fairlie et al., 2007), and sea salt (Jaegle et al., 2011). Particle chemistry is coupled to gas-phase chemistry as described by (Mao et al., 2013). Gas/particle partitioning of sulfate, nitrate and ammonium (SNA) particles is computed with the ISORROPIA II thermodynamic module (Fountoukis and Nenes, 2007; Pye et al., 2009). Wet and dry deposition of particles follow Liu et al. (2001) and L. M. Zhang et al. (2001), respectively.

Emissions in GEOS-Chem are computed by the Harvard-NASA Emission Component (HEMCO) (Keller et al., 2014), which combines and regrids ensembles of user-selected emission inventories. We apply global anthropogenic emissions but supersede these with regional emissions where the latter are more reliable (Table 1). Fossil fuel emissions in Africa include (1) industry and power plants from the global inventories and (2) diffuse and inefficient combustion sources (diesel and petrol generators, ad-hoc oil refining, gas flares, kerosene use, cars, and motorcycles) from the DICE-Africa inventory (Marais and Wiedinmyer, 2016). We scale all anthropogenic inventories to 2012, as described by van Donkelaar et al. (2008). Biogenic emissions are from MEGAN v2.1 for volatile organic compounds (Guenther et al., 2012) and from Hudman et al. (2012) for soil nitrogen oxides. Lightning emissions of nitrogen oxides are computed as a function of cloud top height as described by Murray et al. (2012). Dust entrainment and deposition follow the DEAD scheme of Zender et al. (2003) as implemented in GEOS-Chem by Fairlie et al. (2007). Biomass burning emissions are from the Global Fire Emissions Database version 4 (GFED4) (Giglio et al., 2013).

For this study, we first calculate the surface fine particle mass concentrations ($PM_{2.5}$), with all emissions sources turned on. For consistency with the $PM_{2.5}$ measurement protocol set by the U.S. Environmental

Protection Agency, we assume 35% relative humidity everywhere (except for Europe) and standard ambient conditions, with temperature of 298.15 K and surface pressure of 1013.25 hPa. In Europe, we assume 50% relative humidity, as is the protocol there. We then perform the identical simulation with emissions arising from fossil fuel combustion turned off. The same meteorological fields are applied for both simulations – i.e., the simulation does not allow feedbacks from particles onto meteorology. In the no-fossil-fuel case, all fossil fuel sources are turned off in both the nested simulations and in the global simulation providing boundary conditions. The difference between the two simulations (with and without fossil fuel) represents the contribution of fossil-fuel combustion to surface $PM_{2.5}$. This approach assumes a linear response of surface $PM_{2.5}$ to changes in emissions.

Our choice of 2012 as the simulation year requires explanation. Air quality is influenced not just by emissions but also by meteorological variables such as surface temperature and wind speed, which can vary greatly on inter-annual timescales. Ideally, our analysis would involve multi-year simulations on both the coarse- and fine-scale grids, but such effort would be computationally expensive. We choose instead to do a one-year simulation for a year not influenced by El Niño conditions, which can worsen or ameliorate air pollution, depending on the region (e.g., Chang et al. (2016), Shen and Mickley (2017)). To gauge the error implied by our choice to simulate just one year rather than a span of years, we examine the inter-annual variation in total $PM_{2.5}$ concentrations at the surface estimated from the Dalhousie University archive (van Donkelaar et al., 2016). The $PM_{2.5}$ values in the Dalhousie archive are calculated by first combining satellite observations with GEOS-Chem estimates, and then calibrating the resulting concentrations with available ground-based observations (mostly Europe, the US, India and China). We find that the global mean average of the relative standard deviation of total $PM_{2.5}$ in the Dalhousie archive over 2008 to 2016 is just 7%. Averaged over large regions on the continental scale, the relative standard deviation ranges from 4% over Australia to 11% over the Asia nested grid domain (Figure S1). Inter-annual variability in this metric is greatest (> 60%) for smaller regions influenced by wildfires or biomass burning – e.g., Indonesia and remote areas at high northern latitudes where few people live. To test our choice of 2012 as a representative year,

we calculate the 2012 anomaly in the Dalhousie $PM_{2.5}$ time series (Figure S2). Again on a continental scale, we find that 2012 concentrations range from 0.7 $\mu g\ m^{-3}$ less to 0.4 $\mu g\ m^{-3}$ greater than the 2008-2016 average (Figure S2). Given the relatively small inter-annual variability in surface $PM_{2.5}$ in the Dalhousie archive over most populated regions, as well as the small anomalies in $PM_{2.5}$ in 2012 relative to the long-term mean, we conclude that the 2012 GEOS-Chem simulation provides a representative snapshot of global air quality.

To validate the 2012 $PM_{2.5}$ results from GEOS-Chem, we rely on archived $PM_{2.5}$ concentrations from the World Health Organization database (WHO). We find that GEOS-Chem captures the observed annual mean $PM_{2.5}$ concentrations with a correlation of 0.70, mean absolute error of 3.4 $\mu g\ m^{-3}$, and normalized mean bias of 27% (Figure S3). Our high bias in the US (where most North American WHO data are located) is opposite to the low bias estimated by Ford and Heald (2016) in urban (-25%) and rural (-6%) areas; such biases may be due to differences in US emission inventories for both gas-phase aerosol precursors and primary particles (Xing et al., 2015). A caveat in our comparison is that most observations (95%) in the WHO database with at least 75% temporal coverage in 2012 are in North America and Europe. We add to Figure S3 the 2012 observations from the US embassy in Shanghai (those for Beijing are already in the WHO dataset), and national monitoring sites embassies in Delhi (Cusworth et al., 2018), and the Highveld region in South Africa (South African Air Quality Information System; data obtained by request from the South African Weather Service in July 2018). Over the European domain in Figure S1, we find that GEOS-Chem yields a correlation of 0.60, mean absolute error of 5.2 $\mu g\ m^{-3}$ and a normalized mean bias of 33% in surface $PM_{2.5}$; over the North American domain in Figure S1, these values are 0.52, 1.8 $\mu g\ m^{-3}$ and 20% (Figure S4). Taken together, these validation statistics are similar to those reported by other studies examining surface $PM_{2.5}$ in global models (e.g., Shindell et al. (2018)) and regional models (e.g., Xing et al. (2015)) .

124 **Table S1.** GEOS-Chem anthropogenic emissions. All emissions are scaled to 2012 conditions.

Region	Inventory name	Species	Reference
Global	EDGAR v4.2[a,c]	NO, CO, SO_2, sulfate, ammonia	Olivier and Berdowski (2001)
Global	RETRO[a,c]	Non-methane VOCs	Schultz et al. (2007)
Global	---	Ethane	Xiao et al. (2008)
Global	GEIA	Biofuel ammonia	www.geiacenter.org
Global	BOND[a,c]	Carbonaceous particles	Bond et al. (2007)
Global	AEIC v2.0 aircraft	NO, CO, etc.	Stettler et al. (2011)
Global	ARTCAS ship	SO_2	Eyring et al. (2005)
Global	ICOADS ship	CO	C. Wang et al. (2008)
Global	PARANOX ship	NO	Vinken et al. (2011)
United States	NEI 2011[a,b,c]	Many species	US EPA, www3.epa.gov/airtrends
Europe	EMEP[b,c]	Many species	www.emep.int
Asia	MIX[c]	Many species	M. Li et al. (2017), Venkataraman et al. (2018), X. Li et al. (2018)
Africa	DICE[c,d]	Many species	Marais and Wiedinmyer (2016)
Africa	---	Open waste burning species	Wiedinmyer et al. (2014)

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126 [a] Includes biofuel sources

127 [b] Includes ship emissions

128 [c] Includes land-based transport emissions

129 [d] Includes only diffuse and inefficient sources of anthropogenic emissions – residential fuelwood, diesel
130 and petrol generators, ad-hoc oil refining, gas flares, kerosene use, charcoal production and use, road
131 transport (including motorcycles). For emissions from formal industry and powerplants, we use the global
132 inventories.

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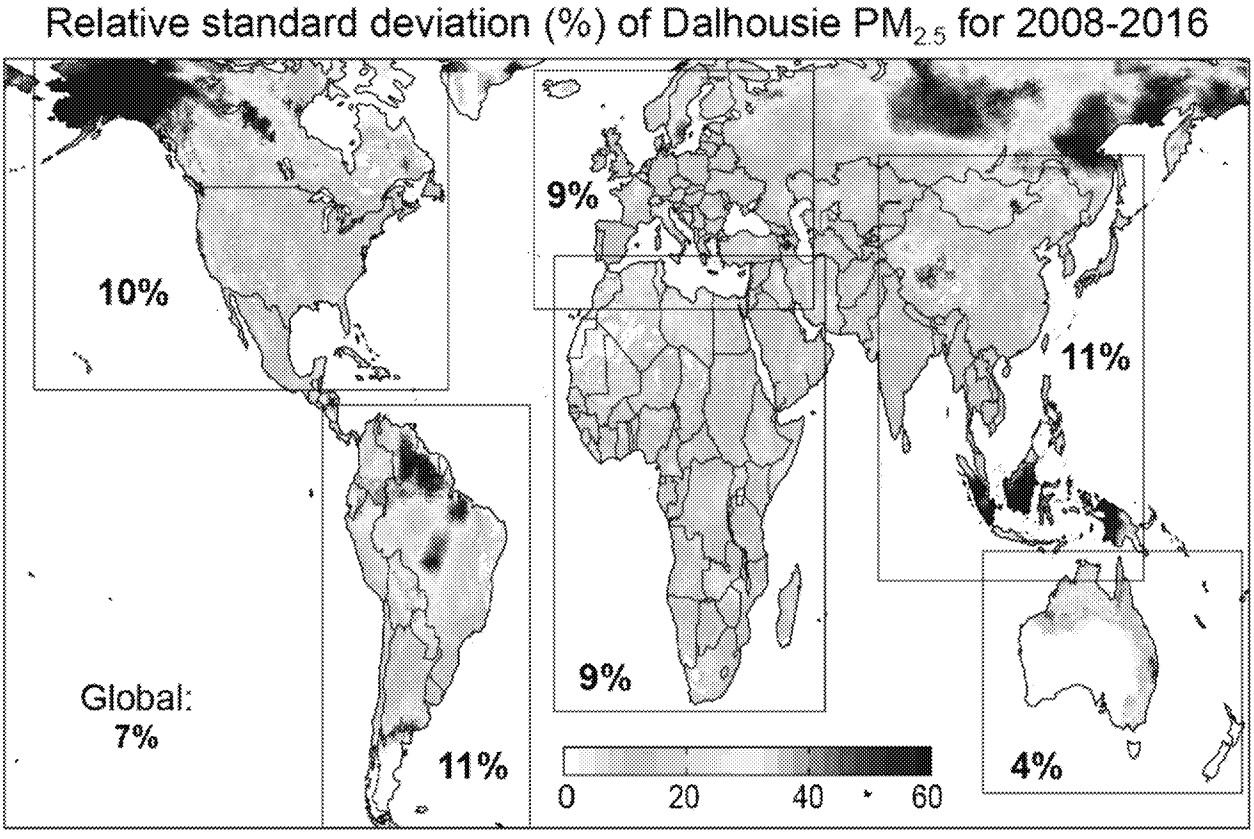

Figure S1. Uncertainty in 2012 $PM_{2.5}$ due to interannual variability. Interannual variability is estimated as the relative standard deviation of the Dalhousie satellite-derived $PM_{2.5}$ product (van Donkelaar et al., 2016) for 2008-2016 at 0.1°×0.1°. Values inset are the domain mean relative standard deviations for North America, South America, Western Europe (including portions of North Africa and the Middle East), Africa (including a portion of the Middle East), Southeast Asia, and Australia.

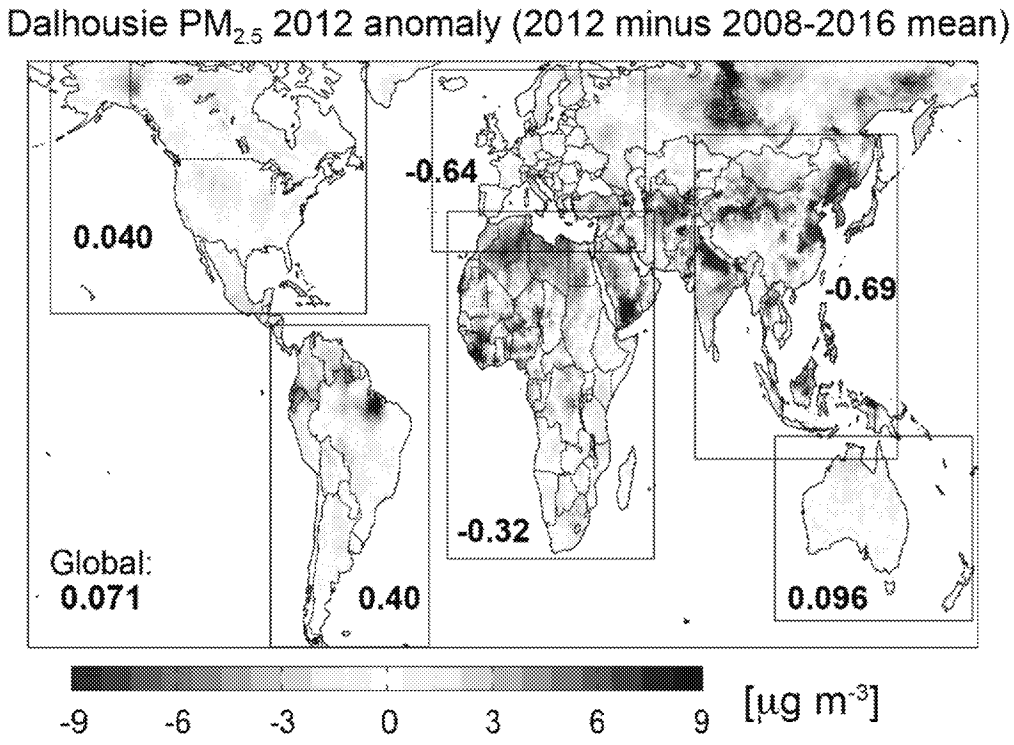

Figure S2. Representativeness of $PM_{2.5}$ in 2012, calculated as the absolute difference in 2012 and 2008-2016 mean $PM_{2.5}$ from Dalhousie (van Donkelaar et al., 2016) at 0.1°×0.1°. Values inset are domain mean anomalies for North America, South America, Western Europe (including portions of North Africa and the Middle East), Africa (including a portion of the Middle East), Southeast Asia, and Australia.

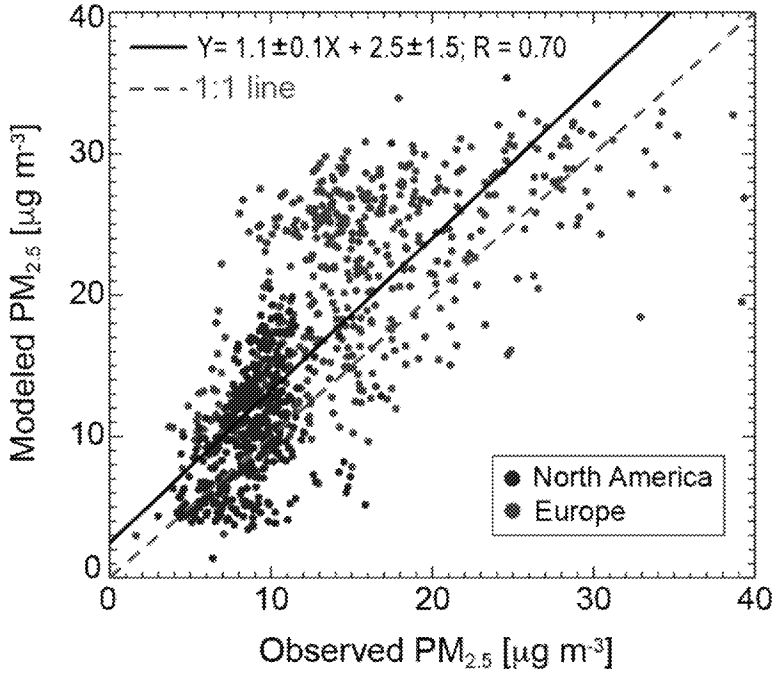

Figure S3. Evaluation of GEOS-Chem $PM_{2.5}$. Points are annual mean $PM_{2.5}$ for coincident 0.5°×0.667° grid squares with at least 75% temporal coverage in the observations. GEOS-Chem $PM_{2.5}$ is estimated at 50% relative humidity (RH) in Europe and 35% RH everywhere else, following standard protocols in measurements of $PM_{2.5}$. Reduced major axis (RMA) regression line (solid black line) and statistics, and the Pearson's correlation coefficient for all coincident grid squares are given inset. Points in red are in Europe and in blue are in North America. Only 7 out of 957 points exceed the range shown.

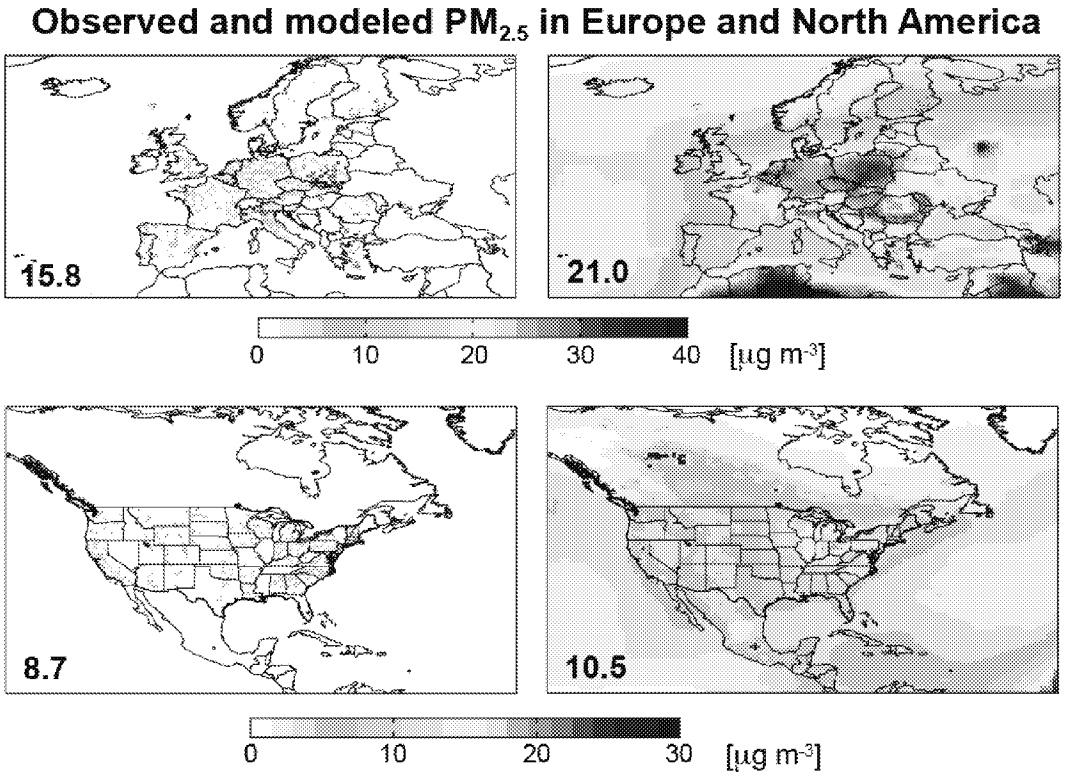

Figure S4. Comparison of the spatial distribution of observed and modeled $PM_{2.5}$ in Europe and North America. Data are on a uniform 0.5°×0.667° grid. Only observations with at least 75% temporal coverage are used. $PM_{2.5}$ are obtained at 50% RH in Europe and 35% RH in North America. Data for the two domains are plotted on different scales. Mean $PM_{2.5}$ for coincident grid squares is given inset

$PM_{2.5}$ mortality concentration –response model

We estimated the number of premature deaths attributable to fossil-fuel related $PM_{2.5}$ using a health impact function. To estimate the excess number of deaths associated with $PM_{2.5}$ exposure one requires estimates of exposure, the size of the population exposed, the mortality rate for that population, and the fraction of total deaths attributable to that exposure (AF%).

Recent meta-analysis of the association between long-term $PM_{2.5}$ and mortality (Vodonos et al., 2018) applied a multivariate linear random effects meta-analysis and meta-regression models that polled 135 hazard ratio estimates derived from 53 studies examined long-term $PM_{2.5}$ and mortality. This meta-analysis provided an evidence of a nonlinear association where the exposure-mortality slopes decreased at higher concentrations (**Figure S5)**. For example, each 1 $\mu g\ m^{-3}$ increase in $PM_{2.5}$ was associated with a 1.29% increase in all-age all-cause mortality (95%CI 1.09-1.50) at a mean exposure of 10 $\mu g\ m^{-3}$, which decreased to 0.94 % (95%CI 0.76-1.12) at a mean exposure of 20 $\mu g\ m^{-3}$, to 0.81% (95%CI 0.52-1.12) at 30 $\mu g\ m^{-3}$ and to 0.79% (95%CI 0.40-1.13) at 40 $\mu g/m^3$.

Hence, for examining a reduction of $PM_{2.5}$ levels from 15 to 10 $\mu g/m^3$, we calculated the mean slope as area under the curve between 0.014 and 0.011= 0.0125. A reduction of $PM_{2.5}$ levels from 30 to 20 $\mu g/m^3$, the mean slope was calculated as area under the curve between 0.009 and 0.008 = 0.00814

Mean value of estimates of mortality ($\bar{\beta}$) for each grid cell was calculated as area under the curve for the concentration-specific β in each grid cell from the low $PM_{2.5}$ scenario (without fossil fuel emissions) to the high $PM_{2.5}$ scenario (with all emissions, including fossil fuel) following the form shown in Equation

$$\bar{\beta}(PM_{2.5})=\int_{PM_{2.5}\ \text{no fossil fuel}}^{PM_{2.5}\ \text{all emissions}} \beta(PM_{2.5})$$

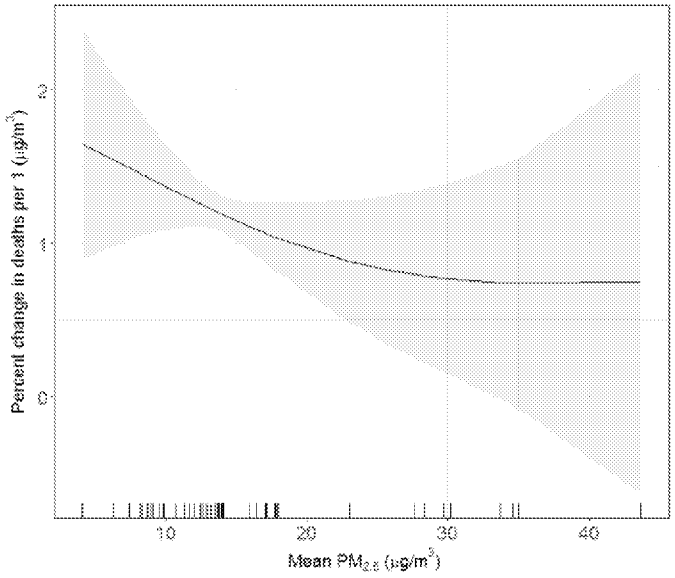

Figure S5. Estimates for long-term $PM_{2.5}$ mortality dose-response, drawn from the meta-analysis of long-term association between $PM_{2.5}$ and mortality (Vodonos et al., 2018).

Table S2. Extended data. Global regions, number of deaths, attributable fraction (%) for the population above 14 years old attributable to fine particulate matter ($PM_{2.5}$) exposure in 2012

Country name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
North America						
Bermuda	488	3	1.9	1.1	9	1.8
Greenland	472	1.2	0.9	0.3	3	0.6
Central America & the Caribbean						
Antigua and Barbuda	538	4.4	4.1	0.3	2	0.4
Bahamas	2,347	4.1	2.8	1.4	53	2.3
Barbados	2,523	4.9	4.7	0.2	7	0.3
Belize	1,530	5	4	1.1	26	1.7
Costa Rica	38,094	5.4	2.9	2.6	1,557	4.1
Cuba	95,635	5.3	3.8	1.5	2,334	2.4
Dominica	668	4.9	4.7	0.2	2	0.3
Dominican Republic	60,949	11.2	5.3	6	4,925	8.1
El Salvador	44,036	9.7	3.4	6.3	4,029	9.1
Grenada	983	4.6	4.3	0.4	6	0.6
Guatemala	67,426	9.7	3.2	6.5	6,205	9.2
Haiti	70,013	8.2	4.9	3.3	3,409	4.9
Honduras	40,564	7.9	3.5	4.4	2,620	6.5
Jamaica	18,511	9.1	4.7	4.4	1,183	6.4

Country name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
Mexico	615,874	11.8	2.4	9.5	65,871	10.7
Nicaragua	20,467	5.4	3.5	1.9	614	3.0
Panama	16,364	4.7	2.5	2.2	594	3.6
Puerto Rico	28,717	5.5	4.6	0.9	409	1.4
Saint Lucia	1,191	5	4.8	0.2	4	0.3
Saint Vincent and the Grenadines	913	4.7	4.5	0.2	3	0.3
Trinidad and Tobago	19,561	5.4	4.5	0.9	277	1.4
United States Virgin Islands	1,202	4.6	4.2	0.4	7	0.6
South America						
Argentina	306,979	7.9	3.4	4.5	20,385	6.6
Bolivia	50,854	5.7	4.4	1.3	1,095	2.2
Brazil	1,161,922	8.9	2.9	6.1	94,216	8.1
Chile	108,995	10	2.4	7.6	11,202	10.3
Colombia	247,981	8.2	2.7	5.5	20,045	8.1
Ecuador	74,588	6.7	2.1	4.6	5,357	7.2
Guyana	4,830	8	6.6	1.4	96	2.0
Paraguay	29,665	9.2	6	3.2	1,374	4.6
Peru	120,778	7.3	1.8	5.5	10,209	8.5
Suriname	3,667	6.9	6.2	0.7	36	1.0
Uruguay	30,980	6.5	2.4	4.1	1,967	6.3
Venezuela	247,407	10.6	4.3	6.2	21,185	8.6

Country name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
Europe						
Albania	20,072	19.8	8.6	11.2	2,458	12.2
Andorra	654	13.4	5.8	7.6	65	9.9
Austria	79,627	21.4	4.3	17.1	15,018	18.9
Belarus	115,131	20.6	2.9	17.8	23,397	20.3
Belgium	108,113	25.5	2.8	22.7	25,633	23.7
Bosnia and Herzegovina	36,427	21	6.8	14.2	5,628	15.5
Bulgaria	106,938	20.2	7.2	13	15,346	14.4
Croatia	52,156	20.2	5.6	14.6	8,454	16.2
Cyprus	7,171	15.4	9.2	6.3	543	7.6
Czech Republic	109,205	26.2	3.4	22.8	25,467	23.3
Denmark	51,600	16.3	2.1	14.2	9,202	17.8
Estonia	14,761	12.6	1.6	11	2,227	15.1
Finland	50,553	8.6	1.3	7.3	5,506	10.9
France	562,481	18.1	3.4	14.7	97,242	17.3
Georgia	51,550	23.3	10.2	13.1	6,670	12.9
Germany	896,319	23.9	3.2	20.7	198,569	22.2
Greece	116,757	15.6	8.1	7.5	10,616	9.1
Hungary	128,981	24.7	4.7	20	26,863	20.8
Iceland	1,891	2.6	1.6	1	31	1.6
Ireland	30,421	8.3	2	6.4	2,902	9.5
Italy	622,080	18.8	6	12.8	89,412	14.4
Kazakhstan	126,168	17.1	9.2	7.9	11,343	9.0

Country name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
Latvia	31,672	16.2	2	14.3	5,719	18.1
Lithuania	40,380	21.4	2.3	19.1	8,729	21.6
Malta	3,593	16	11.4	4.6	193	5.4
Moldova	43,245	25.4	5.2	20.2	8,922	20.6
Montenegro	6,223	18	7.9	10.1	724	11.6
Netherlands	143,387	24.2	2.7	21.5	32,972	23.0
Norway	29,299	5.9	1.4	4.5	2,065	7.0
Poland	393,724	26.5	3.1	23.4	93,842	23.8
Portugal	104,738	8.9	3.7	5.2	8,032	7.7
Romania	269,933	23.9	6.2	17.7	49,583	18.4
Russia	1,833,839	19	4.9	14.1	289,922	15.8
Serbia	100,172	24.8	6.9	17.9	18,076	18.0
Slovakia	53,258	24.9	4.1	20.8	11,522	21.6
Slovenia	19,680	21.7	5.3	16.3	3,528	17.9
Spain	418,063	12.9	4.8	8.1	44,603	10.7
Sweden	88,058	10	1.6	8.5	10,548	12.0
Switzerland	62,993	20.3	4.6	15.8	11,196	17.8
Turkey	361,723	18.2	8.1	10.1	41,811	11.6
Ukraine	731,672	19.4	5.1	14.3	120,217	16.4
United Kingdom	579,747	15.4	2	13.5	99,069	17.1

Country name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
Africa						
Algeria	142,304	31.4	20.5	10.9	13,295	9.3
Angola	100,845	15.4	14.1	1.3	1,537	1.5
Benin	42,616	40.4	36.2	4.2	1,450	3.4
Botswana	12,721	8.2	6	2.1	397	3.1
Burkina Faso	84,040	55.9	54.6	1.3	855	1.0
Burundi	44,973	16.2	15.4	0.8	419	0.9
Cameroon	118,759	39.7	38.2	1.5	1,520	1.3
Cape Verde	2,545	66.9	66	0.9	18	0.7
Central African Republic	41,111	30.7	30.1	0.6	178	0.4
Chad	56,523	59.8	58.7	1	460	0.8
Comoros	3,878	1.6	1.4	0.1	9	0.2
Congo	21,705	20.6	19.3	1.3	287	1.3
Cote d'Ivoire	111,211	29.3	28.2	1.1	1,065	1.0
Democratic Republic of the Congo	419,021	21.3	20.7	0.6	2,261	0.5
Djibouti	4,509	21.2	17.5	3.8	164	3.6
Egypt	392,226	56.7	40.2	16.5	46,783	11.9
Equatorial Guinea	4,679	10	9.5	0.5	32	0.7
Eritrea	20,386	31.3	28.5	2.8	444	2.2
Ethiopia	287,855	17	15.2	1.8	5,657	2.0
Gabon	13,783	11	10.5	0.5	90	0.7
Gambia	9,610	58	56	2	151	1.6

Country name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
Ghana	149,177	31.5	28.9	2.6	3,361	2.3
Guinea	63,691	49.7	48.8	1	467	0.7
Guinea-Bissau	9,223	51.9	50.6	1.3	89	1.0
Kenya	219,806	8.3	6.4	2	6,035	2.7
Lesotho	25,223	12.6	7.5	5.1	1,689	6.7
Liberia	19,482	25.3	24.7	0.7	113	0.6
Libya	26,745	42.3	34.3	8	1,565	5.9
Madagascar	97,088	3.7	3.3	0.4	641	0.7
Malawi	83,919	9.9	9.4	0.6	681	0.8
Mali	69,737	60.3	59.3	1	555	0.8
Mauritania	13,520	98.7	97.4	1.3	159	1.2
Mauritius	9,564	1.6	1.3	0.3	43	0.4
Morocco	186,609	23.8	16.9	6.9	12,436	6.7
Mozambique	163,474	6.8	6.3	0.5	1,309	0.8
Namibia	12,923	11.1	10.2	0.9	159	1.2
Niger	63,052	73.3	71.6	1.7	844	1.3
Nigeria	689,902	59.7	54.9	4.8	25,282	3.7
Rwanda	43,547	16.4	15.2	1.2	557	1.3
Sao Tome and Principe	821	5.5	5.4	0.1	2	0.2
Senegal	61,877	71.2	69.3	1.8	916	1.5
Seychelles	702	1.5	1.2	0.3	4	0.6
Sierra Leone	33,549	42	41	0.9	230	0.7
Somalia	47,288	9.5	8.3	1.3	789	1.7

Country name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
South Africa	487,500	21.9	11.7	10.2	45,134	9.3
Sudan[c]	165,624	35.3	33.6	1.7	2,197	1.3
Swaziland	9,954	10.6	6.7	3.9	534	5.4
Tanzania	202,713	6.9	6.4	0.5	1,660	0.8
Togo	34,797	36.6	34.4	2.1	617	1.8
Tunisia	59,521	25.5	17.1	8.3	4,711	7.9
Uganda	127,825	13.1	11.8	1.3	2,018	1.6
Zambia	71,697	12.7	12.2	0.6	511	0.7
Zimbabwe	88,229	10.5	9	1.6	1,797	2.0
Western Asia & the Middle East						
Afghanistan	148,817	20.9	13.9	7	11,153	7.5
Armenia	25,420	22.6	11.9	10.7	2,721	10.7
Azerbaijan	85,764	29.8	17.6	12.2	8,733	10.2
Bahrain	3,315	33.1	30.2	2.9	73	2.2
Iran	330,324	28.5	23.8	4.7	13,168	4.0
Iraq	95,874	30.1	26.4	3.7	2,942	3.1
Israel	40,291	21.2	14.4	6.9	2,776	6.9
Jordan	13,031	22.9	16.6	6.2	766	5.9
Kuwait	5,120	37.4	34.4	3	110	2.1
Kyrgyzstan	29,441	17.3	8.4	8.9	3,041	10.3
Lebanon	27,756	18	11.7	6.3	1,931	7.0
Oman	7,482	46.5	40.6	5.8	321	4.3

Country name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
Palestine	12,562	22.7	15.6	7.1	853	6.8
Qatar	4,252	35.2	31.7	3.5	109	2.6
Saudi Arabia	82,403	32.6	29.6	3	1,893	2.3
Syria	140,751	19.4	12.7	6.7	10,159	7.2
Tajikistan	38,948	21.7	9.6	12.1	4,914	12.6
Turkmenistan	51,096	31.7	26.4	5.3	2,124	4.2
United Arab Emirates	16,636	54	45.8	8.1	1,000	6.0
Uzbekistan	205,829	24.8	12.8	12	23,912	11.6
Yemen	90,616	23	19.9	3.1	2,520	2.8
Eastern Asia						
Bangladesh	692,081	58.9	6.7	52.3	252,927	36.5
Bhutan	2,909	23.6	5.7	17.9	516	17.7
Brunei	1,684	6.1	3.3	2.8	72	4.3
Cambodia	85,803	20.9	11.6	9.2	8,445	9.8
China	9,720,397	72.8	9.9	62.9	3,910,916	40.2
China (2018)[d]	9,720,397	41	9.7	31.2	2,355,579	24.2
India	8,009,357	52	9	42.9	2,458,384	30.7
Indonesia	1,495,066	20.9	5.7	15.3	230,097	15.4
Japan	1,284,769	22.6	4.6	18	242,561	18.9
Laos	33,822	19.6	8	11.6	4,404	13.0
Malaysia	154,090	18.9	5.3	13.6	22,228	14.4
Maldives	865	5.9	2.3	3.7	50	5.8

Country name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
Mongolia	12,013	8.4	4.8	3.5	628	5.2
Myanmar	340,623	16.4	7.4	9	36,978	10.9
Nepal	168,690	38.8	9.5	29.3	39,066	23.2
North Korea	201,841	35.8	5.3	30.5	52,942	26.2
Pakistan	1,115,784	36.7	15.1	21.7	188,406	16.9
Papua New Guinea	63,224	3.1	2.9	0.2	168	0.3
Philippines	559,792	8.7	2.1	6.7	51,203	9.1
Singapore	14,100	21.9	4.9	16.9	2,616	18.6
South Korea	265,641	44	5.3	38.8	80,962	30.5
Sri Lanka	116,032	13.4	3.5	9.9	14,998	12.9
Taiwan	164,488	14.5	3.2	11.3	23,711	14.4
Thailand	418,824	20.6	4.7	15.9	71,184	17.0
Timor-Leste	5,381	6.4	5	1.4	115	2.1
Vietnam	541,064	31.7	4.4	27.4	127,614	23.6
Australia & Oceania						
American Samoa	301	0.7	0.7	0	0	0.0
Australia	142,935	4.9	2.4	2.5	5,686	4.0
Federated States of Micronesia	679	0.7	0.7	0	1	0.1
Fiji	5,538	1.3	1.2	0.1	9	0.2
Guam	1,112	1.2	1	0.2	4	0.4
Kiribati	852	0.8	0.8	0	0	0.0
Marshall Islands	336	1.1	1.1	0	0	0.0

Country name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
New Zealand	29,923	2.2	1.5	0.6	320	1.1
Northern Mariana Islands	249	1.3	1.1	0.3	1	0.4
Samoa	960	0.7	0.7	0	0	0.0
Solomon Islands	3,286	1.2	1.2	0	2	0.1
Tonga	657	1.2	1.1	0.1	1	0.2
Vanuatu	1,791	2.2	2.2	0.1	2	0.1

USA						
State name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
Alabama	50,411	9.4	2.6	6.9	5,067	10.1
Alaska	3,384	2.2	1.4	0.9	51	1.5
Arizona	56,565	7.9	4	3.9	3,263	5.8
Arkansas	26,345	10.3	2.6	7.6	2,887	11.0
California	259,363	12.2	2.4	9.8	34,081	13.1
Colorado	36,885	6.8	3	3.8	2,140	5.8
Connecticut	32,639	12.1	1.7	10.5	4,749	14.6
Delaware	4,436	13.2	1.7	11.5	694	15.6
Florida	191,646	6.6	2.4	4.2	12,483	6.5
Georgia	75,518	11.3	2.5	8.8	9,290	12.3

State name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
Hawaii	11,032	2.6	2.1	0.4	83	0.8
Idaho	13,006	6.2	3.3	2.8	581	4.5
Illinois	102,593	16.6	1.9	14.7	18,952	18.5
Indiana	66,979	17	1.9	15.1	12,637	18.9
Iowa	33,378	11.9	2.1	9.8	4,562	13.7
Kansas	33,671	10.4	1.9	8.5	4,094	12.2
Kentucky	52,325	14.3	2	12.4	8,500	16.2
Louisiana	42,176	10.4	2.8	7.5	4,505	10.7
Maine	14,555	7.7	1.6	6.1	1,350	9.3
Maryland	40,784	15.8	1.8	14.1	7,336	18.0
Massachusetts	53,851	11.8	1.6	10.2	7,654	14.2
Michigan	93,585	16.7	1.8	14.9	17,438	18.6
Minnesota	39,674	13.3	2.2	11.1	5,877	14.8
Mississippi	40,360	10	2.6	7.3	4,263	10.6
Missouri	48,205	11.2	2.1	9.1	6,161	12.8
Montana	9,520	5.1	3.4	1.7	266	2.8
Nebraska	13,881	9	2.1	7	1,432	10.3
Nevada	23,541	6.7	3.4	3.3	1,192	5.1
New Hampshire	12,314	10	1.6	8.3	1,495	12.1
New Jersey	97,747	15.7	1.6	14.1	17,646	18.1
New Mexico	21,308	4.9	2.2	2.7	938	4.4
New York	129,489	14.6	1.6	13	21,931	16.9
North Carolina	95,239	12.5	2.2	10.3	13,357	14.0

State name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
North Dakota	4,070	6.9	2	4.9	309	7.6
Ohio	115,955	16.8	1.7	15	21,818	18.8
Oklahoma	40,908	8.7	1.9	6.8	4,190	10.2
Oregon	38,128	8.1	2.4	5.6	3,152	8.3
Pennsylvania	133,771	17.1	1.7	15.4	25,382	19.0
Rhode Island	4,910	10	1.6	8.3	597	12.2
South Carolina	51,014	10.9	2.5	8.4	6,048	11.9
South Dakota	7,036	7.4	2.1	5.4	574	8.2
Tennessee	67,804	11.4	2.1	9.3	8,844	13.0
Texas	183,885	8.4	1.9	6.4	17,663	9.6
Utah	16,534	6.5	2.7	3.8	981	5.9
Vermont	6,415	9.8	1.6	8.2	770	12.0
Virginia	71,555	13.9	2	11.9	11,206	15.7
Washington	50,955	7.7	2.3	5.4	4,138	8.1
West Virginia	22,500	11	1.9	9.1	2,900	12.9
Wisconsin	59,470	14.7	2	12.7	9,842	16.5
Wyoming	3,642	4.7	2.8	1.9	114	3.1

Canada						
Province name	Total Deaths >14 years old	Mean population weighted annual $PM_{2.5}$ ($\mu g\ m^{-3}$)			Attributable deaths[a]	Mean attributable fraction (%)[b]
		With all emission sources	Without fossil fuel	Estimated fossil fuel $PM_{2.5}$		
Alberta	21,535	8	2	6	1,958	9.1
British Columbia	33,403	8.7	1.9	6.8	3,237	9.7
Manitoba	9,868	7.9	2.7	5.2	778	7.9
New Brunswick	7,095	4.8	1.5	3.4	391	5.5
Newfoundland & Labrador	1,588	2.4	1.4	1	27	1.7
Northwest Territories	172	3.2	2.8	0.4	1	0.6
Nova Scotia	9,158	4.9	1.6	3.3	497	5.4
Nunavut	129	1.2	0.8	0.4	1	0.8
Ontario	90,996	15	1.6	13.4	15,728	17.3
Prince Edward Island	1,269	4.3	1.4	2.9	61	4.8
Quebec	66,494	13.9	1.6	12.3	10,645	16.0
Saskatchewan	8,515	7.5	2.4	5.2	678	8.0
Yukon Territory	193	1.1	0.9	0.3	1	0.5

[a] Annual number of deaths attributed to long term exposure to $PM_{2.5}$ generated by fossil fuel combustion.

[b] Mean proportion of deaths attributed to long term exposure to fossil-fuel related $PM_{2.5}$.

[c] Includes South Sudan

[d] Estimates derived after applying a 43.7% reduction to $PM_{2.5}$ from all sources for China

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Cardiovascular Research (2020) **116**, 2247–2253
doi:10.1093/cvr/cvaa288

Regional and global contributions of air pollution to risk of death from COVID-19

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Received 24 June 2020; revised 3 October 2020; editorial decision 23 September 2020; accepted 30 September 2020; online publish-ahead-of-print 26 October 2020

Time for primary review: 6 days

Aims The risk of mortality from the coronavirus disease that emerged in 2019 (COVID-19) is increased by comorbidity from cardiovascular and pulmonary diseases. Air pollution also causes excess mortality from these conditions. Analysis of the first severe acute respiratory syndrome coronavirus (SARS-CoV-1) outcomes in 2003, and preliminary investigations of those for SARS-CoV-2 since 2019, provide evidence that the incidence and severity are related to ambient air pollution. We estimated the fraction of COVID-19 mortality that is attributable to the long-term exposure to ambient fine particulate air pollution.

Methods and results We characterized global exposure to fine particulates based on satellite data, and calculated the anthropogenic fraction with an atmospheric chemistry model. The degree to which air pollution influences COVID-19 mortality was derived from epidemiological data in the USA and China. We estimate that particulate air pollution contributed ~15% (95% confidence interval 7–33%) to COVID-19 mortality worldwide, 27% (13 – 46%) in East Asia, 19% (8–41%) in Europe, and 17% (6–39%) in North America. Globally, ~50–60% of the attributable, anthropogenic fraction is related to fossil fuel use, up to 70–80% in Europe, West Asia, and North America.

Conclusion Our results suggest that air pollution is an important cofactor increasing the risk of mortality from COVID-19. This provides extra motivation for combining ambitious policies to reduce air pollution with measures to control the transmission of COVID-19.

Keywords COVID-19 • Air pollution • Fine particulate matter • comorbidity • mortality

1. Introduction

Poor air quality, especially from fine particulate matter with a diameter <2.5 μm ($PM_{2.5}$), is one of the leading risk factors, and responsible for many excess deaths.[1,2] The global loss of life expectancy from long-term exposure to ambient air pollution exceeds that of infectious diseases, and is comparable with that of tobacco smoking.[1–3] The mortality from COVID-19 depends on comorbidities, including conditions that increase cardiovascular risks such as arterial hypertension, diabetes mellitus, obesity, and established coronary artery disease, as well as respiratory conditions such as asthma and chronic obstructive pulmonary disease (COPD), being similar to those that are influenced by air pollution.[3–6] The risk of death is strongly related to age, being particularly high in those aged >70. It is also higher amongst males, economically disadvantaged populations, and in some ethnic groups. In assessing the relationships between exposures to risk factors and outcomes, potential confounders therefore need to be accounted for in the design of studies and in data analysis. These include the age distribution of the population, availability of hospital beds (and intensive care capacity), and the proportion of the population living in poverty.

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A recent study, using an ecological design, assessed how environmental influences modify the severity of COVID-19 outcomes in the USA.[7] Potential confounders were identified, and statistical models were used to relate long-term exposure to ambient $PM_{2.5}$ to COVID-19 deaths. The computed mortality rate ratios (MRRs) express the relative increase in COVID-19 deaths for each microgram per cubic meter increment of $PM_{2.5}$ in ambient air. The $PM_{2.5}$ data were derived from satellite and ground-based measurements combined with atmospheric modelling,[8] and the confounders were determined from county-level censuses, homeland infrastructure, and meteorological data. Here we test the assumption that the derived MRRs are representative for the populations of other countries (China) and consider the global impact. In the present study, we apply the MRRs to estimate the excess mortality, i.e. the fraction of COVID-19 deaths that could be avoided if the population were exposed to lower counterfactual air pollution levels without fossil fuel-related and other anthropogenic emissions. We emphasize that our results are provisional, based on epidemiological data collected up to the third week of June 2020, and a comprehensive evaluation will need to follow after the COVID-19 pandemic.

1.1 SARS and air pollution

In the early 2000s, the first severe acute respiratory syndrome coronavirus (SARS-CoV-1) appeared in China (Guangdong Province). The virus was zoonotic, as it originally developed in bats.[9] The World Health Organization (WHO) reported that it resulted in a SARS epidemic with >8000 cases in 26 countries, mostly in south-east Asia and in Canada.[8] The disease emerged in November 2002 and was contained in July 2003. SARS-CoV-1 and SARS-CoV-2 have many similarities, as their RNA genomes are closely related and the viruses enter the host cells by binding to the same entry receptor angiotensin-converting enzyme 2 (ACE2).[10–12] About 2–14 days after infection, the systemic symptoms of both diseases are alike, and a similar fraction of patients develops severe symptoms with a mortality rate that increases strongly with advanced age.[13–16] In China alone, >5000 cases of SARS-CoV-1 were reported, leading to nearly 350 fatalities. Since the exposure to ambient air pollution is associated with respiratory and cardiovascular diseases, it was hypothesized that health outcomes of SARS were aggravated by poor air quality. A study in 2003 corroborated that in parts of China with moderate levels of air pollution, the risk of dying from the disease was >80% higher compared with areas with relatively clean air, while in heavily polluted regions the risk was twice as high.[17]

1.2 COVID-19 and air pollution

In 2019, the related second virus strain appeared (SARS-CoV-2) in China (Hubei Province), which also developed in bats,[4] causing COVID-19, which grew from an epidemic into a pandemic in the early part of 2020. A Chinese analysis indicated that the risk of symptomatic infection typically increases by ~4% for each year of age between 30 and 60, and that the lethality is highest for individuals >60 years.[15]COVID-19 is associated with a combination of respiratory and cardiovascular complications, which may comprise myocardial infarction, heart failure, venous thrombo-embolisms, and increases in biomarkers,[18] which are also found in connection with high levels of air pollutants.[5] In a recent analysis of 5700 patients hospitalized with COVID-19 in the New York City area, the most common comorbidities were hypertension (57%), obesity (42%), and diabetes (34%),[19] representing cardiovascular risk factors that are also observed in relation to elevated $PM_{2.5}$ concentrations,[5,20] suggesting additive or synergistic effects on the cardiovascular system. In addition, advanced age is a strong risk factor for cardiovascular disease, and the effects on immune function may be equally important for COVID-19 susceptibility. The age dependency coincides with that of excess mortality from $PM_{2.5}$.[3,15] The COVID-19 mortality rate has been estimated to be ~4% in symptomatic cases, in part because pre-existing conditions such as cardiovascular and respiratory disorders increase the risk.[21]

Considering the cardiovascular and respiratory health impacts of air pollution, the relationship to COVID-19 mortality is not unexpected. Preliminary studies addressed the influence of air pollution on COVID-19 in different regions. In China, the incidence of COVID-19 was found to be significantly enhanced by $PM_{2.5}$,[22] while a correlation between ambient $PM_{2.5}$ and the mortality rate was also established.[23] In Italy, it was found that the high pollution concentrations that are typical for the Po valley, especially in the Lombardy region of which Milan is the capital, were associated with a high mortality rate.[24] As mentioned above, in the USA the severity of COVID-19 outcomes was linked to $PM_{2.5}$ exposure, making use of Medicare data for >60 million people and nationwide air quality measurements.[7] Data were collected for 98% of the population in 3087 of the total number of 3142 counties, of which ~42% had reported COVID-19 deaths up to the third week of April 2020. The death counts relied on data from the Coronavirus Resource Center of the Johns Hopkins University.[25] The study accounted for 20 potential confounding factors including population size, age distribution, population density, time period since the beginning of the outbreak, time elapsed since the home confinements, hospital beds, number of individuals tested, meteorological conditions, and socioeconomic and risk factors such as obesity and smoking.[7] The results showed significant overlap between the causes of death in COVID-19 patients and those that lead to mortality from $PM_{2.5}$. The MRR, i.e. the percentage increase of COVID-19 mortality risk per $\mu g/m^3$ increase of exposure to $PM_{2.5}$, was found to be 8%, with a 95% confidence interval of 2–15%.[7] The calculations are continually updated based on the most recent data (up to 18 June at the time of writing), showing no significant changes in the MRR in the preceding 4 months.

2. Methods

2.1 Global model and data

We applied a global atmospheric chemistry general circulation model (EMAC) which comprehensively simulates atmospheric chemical and meteorological processes and interactions with the oceans and the biosphere, in the same set-up as in recent studies on climate change, air pollution, and public health.[3,26] In addition to the standard simulation, we performed two sensitivity calculations: (i) with fossil fuel-related emissions removed and (ii) with all anthropogenic emissions removed. The model results were used to estimate the ratio of fine particulates in simulation (i) and (ii) and the standard simulation. The annual atmospheric near-surface $PM_{2.5}$ concentrations were taken from model-integrated satellite data, for the year 2019.[8,27] The horizontal resolution is 0.01 by 0.01 degrees, corresponding to a grid size of ~1 km × 1 km. The near-surface concentrations of $PM_{2.5}$ for fossil fuel-related and all anthropogenic emissions are estimated by scaling this data set to the ratios (i) and (ii) obtained with the EMAC model simulations.

2.2 Relative risk

To estimate the relative risk (RR or hazard ratio) of excess COVID-19 mortality from the long-term exposure to air pollution, we used the exposure–response function of the WHO,[28]

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$$RR = \left(\frac{X+1}{X_0+1}\right)^{\beta},$$

RR is a function of the concentration of air pollutants, which specifies annual average exposure dependent on location (grid cell) derived from the data mentioned above. X is the pollutant ($PM_{2.5}$) and X_0 is the pollutant threshold concentration below which exposure does not have implications for public health. Both β and X_0 are estimated by fitting to data from the literature with a least square method (*Figure 1*). We adopted the threshold $PM_{2.5}$ concentration (X_0) from Burnett *et al.*[2] (i.e. < 2.4 μg/m^3 $PM_{2.5}$), forcing the curve fitting into this range. We tested different exposure–response functions, e.g. of Burnett *et al.*,[2] and values for X_0, and find that the results are not sensitive to these assumptions.

Because the COVID-19 mortality rate ratio due to air pollution, based on data in the USA alone,[7] may not represent countries with very high fine particle concentrations (associated with a lack of observations in such regions), we investigated the effect of including data from the enhanced mortality rate derived for the Chinese SARS epidemic in 2003.[17] We make the assumption that SARS and COVID-19 mortality are similarly affected by long-term exposure to air pollution. Since the analysis for SARS was based on the Chinese Air Pollution Index (API), we converted the API to $PM_{2.5}$ concentrations following empirical relationships from the literature.[29,30] The large uncertainty range in the fitting function to a large degree derives from those in these relationships (black squares and ranges in *Figure 1*). In spite of uncertainties, the curves for the USA only and those that include the Chinese results are almost identical, providing confidence in the function derived for conditions in the USA only.

2.3 Attributable fraction

We calculated RR globally using $PM_{2.5}$ distributions calculated under the standard scenario. The attributable fraction (AF) of COVID-19 mortality to air pollution is calculated from the RR by AF = 1 – 1/RR. From the globally distributed, gridded AFs, we aggregated into regional and country-level AFs, weighted according to the population density, in order to account for the varying population distributions within regions and countries. The population data for the year 2020 were obtained from the NASA Socioeconomic Data and Applications Center (SEDAC), hosted by the Columbia University Center for International Earth Science Information Network (CIESIN).[31] Our definition of AF does not imply a direct cause–effect relationship between air pollution and COVID-19 mortality (although it is possible). Instead it refers to relationships between the two, direct and indirect, i.e. by aggravating comorbidities that could lead to fatal health outcomes of the virus infection.

3. Results

3.1 Attribution of COVID-19 mortality

To estimate the AF from exposure to ambient $PM_{2.5}$ to COVID-19 mortality, we used the epidemiological data from the USA (red curve in *Figure 1*). The chronic exposure to $PM_{2.5}$ in the years prior to the COVID-19 outbreak was estimated on the basis of satellite observations over the year 2019. The anthropogenic and fossil fuel-related fractions were calculated with the global EMAC model. Here we focus on anthropogenic and fossil fuel-related $PM_{2.5}$ to determine the impact of potentially avoidable air pollution on COVID-19 mortality. *Figure 2* and *Table 1* present the average fractions of COVID-19 mortality attributed to the exposure to $PM_{2.5}$ pollution, both globally and regionally. *Table S1* (available as Supplementary material online) lists the results for all countries. To account for the different population distributions within countries, e.g. between rural and urban areas, the averages have been weighted accordingly.

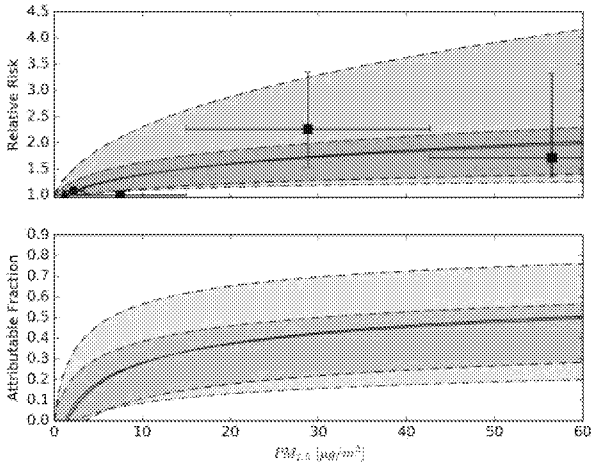

Figure 1 Exposure-response dependencies, based on a log-normal relationship[28]. The relative risk (or hazard ratio), from which the attributable fraction has been derived, is based on mortality rate ratios attributed to air pollution in the COVID-19 pandemic[7] and the SARS epidemic[17], indicated by the black bullet and squares, respectively. The triangle represents the threshold concentration below which $PM_{2.5}$does not have health implications[2]. The red curves depict the function fitted to the data from COVID-19 in the USA only[7], plus the threshold[2] (triangle and bullet). The blue curves depict the function fitted to all data[2,7,17]. The colored ranges show the 95% confidence intervals, which are wider after including the SARS-related results (blue), mostly due to uncertainty from converting Chinese API's into $PM_{2.5}$concentrations (black squares).

In regions with strict air quality standards and relatively low levels of air pollution, such as Australia, the attributable fraction by human-made air pollution to COVID-19 mortality is found to be a few percent only. Relatively high fractions occur in parts of east Asia (~35%), central Europe (~25%), and eastern USA (~25%). The country-level contribution to COVID-19 that we find for China, i.e. 27% (95% confidence interval 13 – 47%), agrees well with that found for the SARS epidemic in 2003.[17] The largest country-average fractions are found in the Czech Republic, Poland, China, North Korea, Slovakia, Austria, Belarus, and Germany, all above 25% (Supplementary material, *Table S1*). Globally, anthropogenic air pollution contributes ~15% (7 – 33%) to COVID-19 mortality, which could have been largely prevented, for example by adopting the air quality regulations applied in Australia (annual $PM_{2.5}$ limit of 8 μg/m^3). The global mean contribution of fossil fuel use to the anthropogenic fraction is ~56%, being highest in North America (83%), West Asia (75%), and Europe (68%) (*Table 1*).

4. Discussion

4.1 Pathophysiological aspects

Both the air pollutant $PM_{2.5}$ and the SARS-CoV-2 virus enter the lungs via the bronchial system (portal organ), with potential systemic health impacts through the blood circulation. Both $PM_{2.5}$ and SARS-CoV-2 cause vascular endothelial dysfunction, oxidative stress, inflammatory responses, thrombosis, and an increase in immune cells.[32–36] The SARS-CoV-2 infection facilitates the induction of endothelial inflammation in

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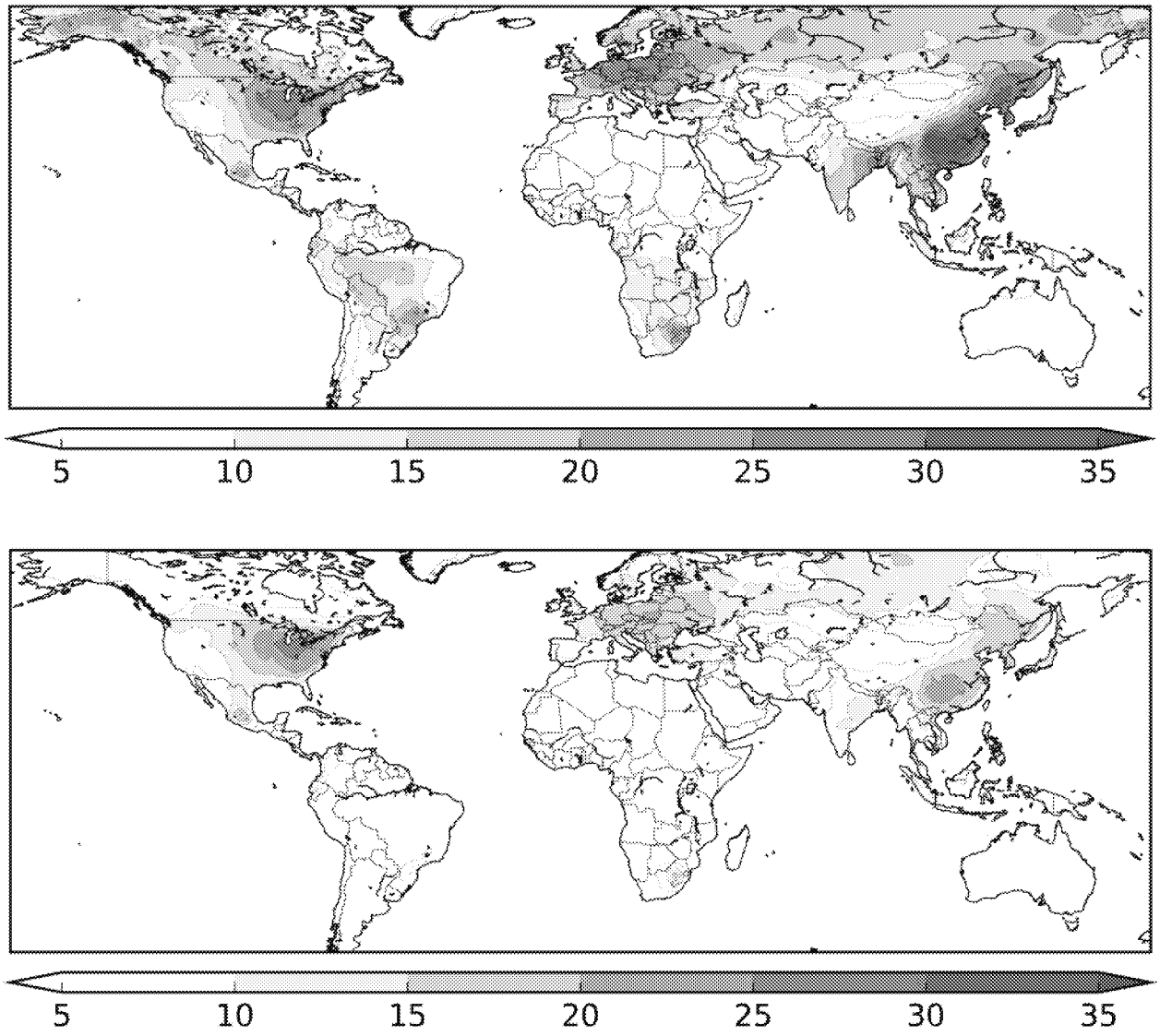

Figure 2 Estimated percentages of COVID-19 mortality attributed to air pollution from all anthropogenic sources (top), and from fossil fuel use only (bottom). The regions with high attributable fractions coincide with high levels of air pollution. The mapped results account for population density, thus reflecting population weighted exposure to $PM_{2.5}$.

several organs as a direct consequence of viral cytotoxic effects and the host inflammatory response, which can aggravate pre-existing chronic respiratory and vascular (coronary) dysfunction, and cause lung injury by alveolar damage, as well as stroke and myocardial infarction by inducing plaque rupture.[37] Potential common pathophysiological mechanisms of increased risk thus relate to endothelial injury[33,38] and pathways that regulate immune function.[39,40] Further, there are strong indications of increased susceptibility to viral infections from exposure to air pollution.[41–46]

Lung injuries, including the life-threatening acute respiratory distress syndrome and respiratory failure, as well as acute coronary syndrome, arrhythmia, myocarditis, and heart failure, were shown to be clinically dominant, leading to critical complications of COVID-19.[47,48] Recent studies in China, the USA, as well as Europe indicate that patients with cardiovascular risk factors or established cardiovascular disease and other comorbid conditions are predisposed to myocardial injury during the course of COVID-19.[19,46,49–52] From the available information, it thus follows that air pollution-induced inflammation leads to greater vulnerability and less resiliency, and the pre-conditions increase the host vulnerability. Air pollution causes adverse events through myocardial infarction and stroke, and it is an additional factor capable of increasing blood pressure, while there is emerging evidence for a link with type 2 diabetes and a possible contribution to obesity and enhanced insulin resistance.[36] Bronchopulmonary and cardiovascular pre-conditions, including hypertension, diabetes, coronary artery disease, cardiomyopathy, asthma, COPD, and acute lower respiratory illness, all negatively influenced by air pollution, lead to a substantially higher mortality risk in COVID-19. Furthermore, it seems likely that fine particulates prolong the atmospheric lifetime of infectious viruses, thus favouring transmission.[53] It is possible that future research will reveal additional pathways that mediate the relationship between air pollution and the risk of death from COVID-19.

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Table 1 Regional percentages of COVID-19 mortality attributed to fossil fuel-related and all anthropogenic sources of air pollution

Region	Population (million)	COVID-19 mortality fraction attributed to air pollution (%)	
		Fossil fuel-related emissions	All anthropogenic emissions
Europe	628	13 (6–33)	19 (8–41)
Africa	1345	2 (1–19)	7 (3–25)
West Asia	627	6 (3–25)	8 (4–27)
South Asia	2565	7 (3–22)	15 (8–31)
East Asia	1685	15 (8–32)	27 (13–46)
North America	525	14 (6–36)	17 (6–39)
South America	547	3 (1–23)	9 (4–30)
Oceania	28	1 (0–20)	3 (1–23)
World	7950	8 (4–25)	15 (7–33)

The 95% confidence levels are given in parentheses.

4.2 Limitations

Our results indicate that the long-term exposure to high levels of fine particulate matter is a significant cofactor that influences the severity of COVID-19 outcomes. Since $PM_{2.5}$ in China and the USA, from which epidemiological data have been used, is dominated by anthropogenic sources that are potentially preventable, we focus our analysis on this fraction of $PM_{2.5}$. The good agreement of our results for the USA and China is in line with recent studies, showing that the association between air pollution and excess mortality is valid for many different countries.[2,55] Nevertheless, the calculations of RRs (hazard ratios) and the AF to mortality rely on the use of data from an ecological study design that has limitations, even though 19 county-level variables and one state-level variable, some of which are more important than air pollution, were considered as potential confounders in the analysis—and the $PM_{2.5}$ exposure data have been extensively cross-validated.[7] However, we acknowledge that residual confounding cannot be excluded. While cross-sectional ecological studies do not allow conclusions about cause–effect relationships, the biological mechanisms of air pollution-related disorders, acting as comorbidities in COVID-19, are well documented.[56,57] Recent studies in England and The Netherlands corroborate the positive relationships between air pollution and the number of COVID-19 cases, hospital admissions, and mortality.[58–60] The reported MRRs for $PM_{2.5}$ range from 1–7% to 13–21% (we applied 2–15%), which confirms the significant role of air pollution but emphasizes the large uncertainty ranges. Furthermore, our approach is likely to realistically approximate the contribution of fossil fuels and other anthropogenic sources to the total excess deaths through long-term ambient $PM_{2.5}$ air pollution exposure.

We reiterate that the data used for China are associated with substantial uncertainty, and underly the assumption that comorbidity and mortality from air pollution in COVID-19 are the same as in SARS. Nonetheless, using these data does not change the results, providing confidence in the robustness of our findings. We emphasize that the data relevant to the present study are from upper-middle and high-income countries, and the representativeness of our results for low-income countries may be limited, and uncertainties are likely to exceed the 95% confidence intervals. It is expected that in countries with high levels of aeolian dust, e.g. in Africa and West Asia, $PM_{2.5}$ pollution is also a cofactor but with less contribution from human activities. Household air pollution is also likely to be important, being of particular relevance in low-income countries.[61] It will be critical to collect epidemiological evidence from many regions with different socio-economic and environmental conditions, to support analyses of the COVID-19 pandemic and investigate the role of environmental factors. The uncertainty ranges that accompany our results are considerable but, taking into account the biological plausibility of the relationship and the strong evidence of the impact of air pollution on conditions that are known to increase COVID-19 mortality, they can nevertheless inform policy decisions.

4.3 Short- and long-term health impacts

A new, though preliminary, finding of the present study is that a significant fraction of worldwide COVID-19 mortality is attributable to anthropogenic air pollution, of which ~50 – 60% is related to fossil fuel use (~70 – 80% in Europe, West Asia, and North America). This represents potentially avoidable, excess mortality. The links between economic activity, traffic, energy use, and public health have been illustrated by the strong reduction of air pollution in many locations during the lockdown measures.[62,63] There is ample evidence for a relationship between short-term exposure to $PM_{2.5}$ and adverse health effects, including excess mortality from cardiovascular and respiratory diseases.[55] While it is in principle possible to disentangle the acute from the chronic outcomes from short- and long-term exposure to air pollution,[64] at this stage it is difficult to make that distinction for $PM_{2.5}$-induced comorbidity and mortality from COVID-19. Generally, short-term associations between air pollution and mortality are substantially less than those from long-term exposure, due to the more persistent, cumulative effects from the latter.[65] By relating air pollution anomalies to short-term health outcomes during the COVID-19-induced societal lockdown, it was found that in China alone >4600 excess deaths may have been avoided.[62] This can be viewed as a health co-benefit from the containment measures, which may reduce air pollution-induced COVID-19 mortality. Such benefits could also be achieved after the COVID-19 lockdown. Both perspectives of air pollution during the pandemic underscore the important role of fossil fuel-related and other anthropogenic emissions.

4.3 Future directions

Our results suggest the potential for substantial benefits from reducing air pollution exposure even at relatively low $PM_{2.5}$ levels. Refinement of the exposure–response relationship and reducing uncertainties will require additional data analyses, including from large cohort studies as the COVID-19 pandemic evolves, but may appear too late to guide

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decision-making. A lesson from our environmental perspective of the COVID-19 pandemic is that the quest for effective policies to reduce anthropogenic emissions, which cause both air pollution and climate change, needs to be accelerated. The pandemic ends with the vaccination of the population or with herd immunity through extensive infection of the population. However, there are no vaccines against poor air quality and climate change. The remedy is to mitigate emissions. The transition to a green economy with clean, renewable energy sources will further both environmental and public health locally through improved air quality and globally by limiting climate change.

Supplementary material

Supplementary material is available at *Cardiovascular Reseach* online.

Funding

We thank the Mainz Heart Foundation for continuous support. T.M. is the principal investigator of the DZHK (German Center for Cardiovascular Research), Partner Site Rhine-Main, Mainz, Germany.

Conflict of interest: none declared.

Data availability

The data underlying this article will be shared upon reasonable request to the corresponding author.

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Translational perspective

COVID-19 infections and air pollution cause excess mortality from cardiovascular and pulmonary diseases. We estimated the fraction of COVID-19 mortality attributable to the long-term exposure to ambient fine particulate air pollution ($PM_{2.5}$). Global exposure to $PM_{2.5}$ was characterized based on satellite data, and the anthropogenic fraction was calculated with an atmospheric chemistry model. $PM_{2.5}$ contributed ~15% to COVID-19 mortality worldwide, 27% in East Asia, 19% in Europe, and 17% in North America. Globally ~50–60% of the attributable, anthropogenic fraction is related to fossil fuel use, and 70–80% in Europe/West Asia/North America, indicating the potential for substantial health benefits from reducing air pollution exposure.

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CORONAVIRUS

Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis

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Assessing whether long-term exposure to air pollution increases the severity of COVID-19 health outcomes, including death, is an important public health objective. Limitations in COVID-19 data availability and quality remain obstacles to conducting conclusive studies on this topic. At present, publicly available COVID-19 outcome data for representative populations are available only as area-level counts. Therefore, studies of long-term exposure to air pollution and COVID-19 outcomes using these data must use an ecological regression analysis, which precludes controlling for individual-level COVID-19 risk factors. We describe these challenges in the context of one of the first preliminary investigations of this question in the United States, where we found that higher historical $PM_{2.5}$ exposures are positively associated with higher county-level COVID-19 mortality rates after accounting for many area-level confounders. Motivated by this study, we lay the groundwork for future research on this important topic, describe the challenges, and outline promising directions and opportunities.

INTRODUCTION

The suddenness and global scope of the coronavirus disease 2019 (COVID-19) pandemic have raised urgent questions that require coordinated investigation to slow the disease's devastation. A critically important public health objective is to identify key modifiable environmental factors that may contribute to the severity of health outcomes [e.g., intensive care unit (ICU) hospitalization and death] among individuals with COVID-19. Numerous scientific studies reviewed by the U.S. Environmental Protection Agency (EPA) have linked fine particles ($PM_{2.5}$; particles with diameter, ≤ 2.5 μm) to a variety of adverse health events (*1*) including death (*2*). It has been hypothesized that because long-term exposure to $PM_{2.5}$ adversely affects the respiratory and cardiovascular systems and increases mortality risk (*3*–*5*), it may also exacerbate the severity of COVID-19 symptoms and worsen the prognosis of this disease (*6*).

Epidemiological studies to estimate the association between long-term exposure to air pollution and COVID-19 hospitalization and death is a rapidly expanding area of research that is attracting attention around the world. Two studies have been published using data from European countries (*7*, *8*), and many more are available as preprints. However, because of the unprecedented nature of the pandemic, researchers face serious challenges when conducting these studies. One key challenge is that, to our knowledge, individual-level data on COVID-19 health outcomes for large, representative populations are not publicly available or accessible to the scientific community. Therefore, the only way to generate preliminary evidence on the link between $PM_{2.5}$ and COVID-19 severity and outcomes using these aggregate data is to use an ecological regression analysis. With this study design, publicly available area-level COVID-19 mortality rates are regressed against area-level air pollution concentrations while accounting for area-level potential confounding factors. Here, we discuss the strengths and limitations of conducting ecological regression analyses of air pollution and COVID-19 health outcomes and describe additional challenges related to evolving data quality, statistical modeling, and control of measured and unmeasured confounding, paving the way for future research on this topic. We discuss these challenges and illustrate them in the context of a specific study, in which we investigated the impact of long-term $PM_{2.5}$ exposure on COVID-19 mortality rates in 3089 counties in the United States, covering 98% of the population.

Illustration of an ecological regression analysis of historical exposure to $PM_{2.5}$ and COVID-19 mortality rate

We begin by describing how to conduct an ecological regression analysis in this setting. COVID-19 death counts (a total of 116,747 deaths) were obtained from the Johns Hopkins University Coronavirus Resource Center and were cumulative up to 18 June 2020. We used data from 3089 counties, of which 1244 (40.3%) had reported zero COVID-19 deaths at the time of our analysis. Daily $PM_{2.5}$ concentrations were estimated across the United States on a $0.01° \times 0.01°$ grid for the period 2000–2016 using well-validated atmospheric chemistry and machine learning models (*9*). We used zonal statistics to aggregate $PM_{2.5}$ concentration estimates to the county level and then averaged across the period 2000–2016 to perform health outcome analyses. Figure 1 illustrates the spatial variation in 2000–2016 average (hereafter referred to as "long-term average") $PM_{2.5}$ concentrations and COVID-19 mortality rates (per 1 million population) by county.

We fit a negative binomial mixed model using COVID-19 mortality rates as the outcome and long-term average $PM_{2.5}$ as the exposure of interest, adjusting for 20 county-level covariates. We conducted more than 80 sensitivity analyses to assess the robustness of the findings to various modeling assumptions. We found that an increase of 1 $\mu g/m^3$ in the long-term average $PM_{2.5}$ is associated with a statistically significant 11% (95% CI, 6 to 17%) increase in the county's COVID-19 mortality rate (see Table 1); this association continues to be stable as more data accumulate (fig. S3). We also found that population density, days since the first COVID-19 case was reported, median household income, percent of owner-occupied housing, percent of the adult population with less than high school

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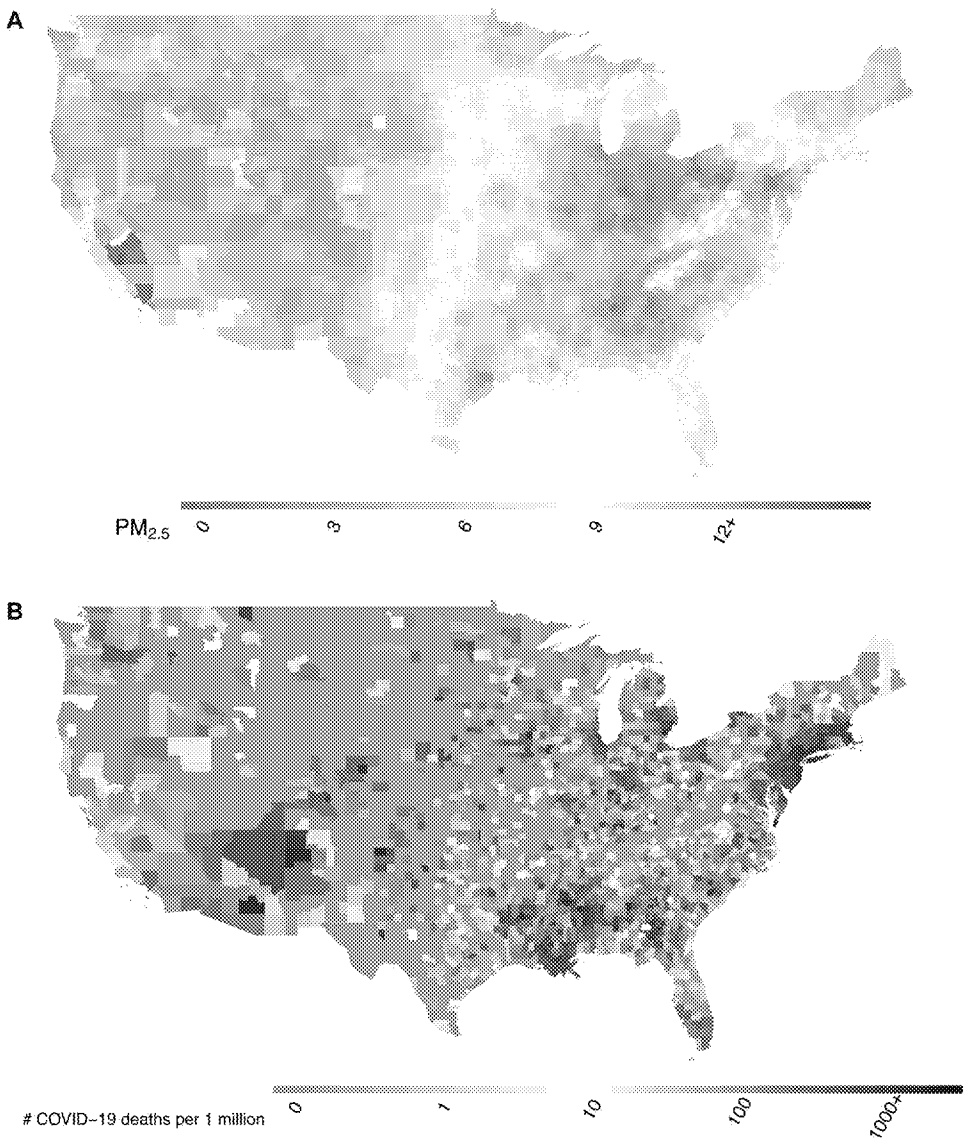

Fig. 1. National maps of historical $PM_{2.5}$ concentrations and COVID-19 deaths. Maps show (**A**) county-level 17-year long-term average of $PM_{2.5}$ concentrations (2000–2016) in the United States in $\mu g/m^3$ and (**B**) county-level number of COVID-19 deaths per 1 million population in the United States up to and including 18 June 2020.

education, age distribution, and percent of Black residents are important predictors of the COVID-19 mortality rate in the model. We found a 49% (95% CI, 38 and 61%) increase in COVID-19 mortality rate associated with a 1-SD (per 14.1%) increase in percent Black residents of the county. Details on the data sources, statistical methods, and analyses are summarized in the Supplementary Materials. All data sources used in the analyses, along with fully reproducible code, are publicly available at https://github.com/wxwx1993/PM_COVID.

Strengths and limitations of an ecological regression analysis

Ecological regression analysis provides a simple and cost-effective approach for studying potential associations between historical exposure to air pollution and increased vulnerability to COVID-19 in large representative populations, as illustrated in our study in the previous section. This approach is regularly applied in many areas of research (*10*). Using our study as an example, we summarize in Table 2 the strengths, limitations, and opportunities considering (i) study design, (ii) COVID-19 health outcome data, (iii) historical exposure to air pollution, and (iv) measured and unmeasured confounders, with the goal of paving the way for future research.

Among the key limitations, by design, ecological regression analyses are unable to adjust for individual-level risk factors (e.g., age, race, and smoking status); when individual-level data are unavailable, this approach leaves us unable to make conclusions regarding individual-level associations. In the context of COVID-19 health outcomes, this is a severe limitation, as individual-level risk factors are known to affect COVID-19 health outcomes. It is important to note that confusion between ecological associations and individual associations may present an ecological fallacy. In extreme

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cases, this fallacy can lead to associations detected in ecological regression that do not exist or are in the opposite direction of true associations at the individual level. However, ecological regression analyses still allow us to make conclusions at the area level, which can be useful for policy-making (*11*). For the association between COVID-19 health outcomes and $PM_{2.5}$ exposure, we argue that area-level conclusions are valuable, as they can inform important immediate policy actions that will benefit public health, such as (i) prioritization of precautionary measures [e.g., personal protective equipment (PPE) allocations and hospital beds] to areas with historical higher air pollution and (ii) further strengthening the scientific argument for lowering the U.S. National Ambient Air Quality Standards for $PM_{2.5}$ and other pollutants. To completely avoid potential ecological bias, a representative sample of individual-level data is necessary. While this may not be feasible in the near future, as some COVID-19 outcome data become available at the individual level, existing approaches that augment county-level data with individual-level data (*12*) could be used to correct for ecological bias.

Table 1. Mortality rate ratios (MRR), 95% confidence intervals (CI), and *P* values for all variables in the main analysis. Details of the statistical models are available in section S2. Q, quintile.

	MRR	95% CI	*P* value
$PM_{2.5}$	1.11	(1.06–1.17)	0.00
Population density (Q2)	0.91	(0.71–1.15)	0.42
Population density (Q3)	0.91	(0.71–1.16)	0.45
Population density (Q4)	0.74	(0.57–0.95)	0.02
Population density (Q5)	0.92	(0.69–1.23)	0.56
% In poverty	1.04	(0.96–1.12)	0.31
Log(median house value)	1.13	(0.99–1.29)	0.07
Log(median household income)	1.19	(1.04–1.35)	0.01
% Owner-occupied housing	1.12	(1.04–1.20)	0.00
% Less than high school education	1.20	(1.10–1.32)	0.00
% Black	1.49	(1.38–1.61)	0.00
% Hispanic	1.06	(0.97–1.16)	0.23
% ≥ 65 years of age	1.04	(0.93–1.17)	0.46
% 45–64 years of age	0.77	(0.67–0.90)	0.00
% 15–44 years of age	0.76	(0.68–0.85)	0.00
Days since stay-at-home order	1.18	(0.92–1.52)	0.20
Days since first case	2.40	(2.05–2.80)	0.00
Rate of hospital beds	1.00	(0.93–1.08)	0.95
% Obese	0.96	(0.90–1.03)	0.32
% Smokers	1.13	(1.00–1.28)	0.05
Average summer temperature (°F)	1.11	(0.95–1.30)	0.20
Average winter temperature (°F)	0.86	(0.69–1.07)	0.19
Average summer relative humidity (%)	0.93	(0.80–1.09)	0.38
Average winter relative humidity (%)	0.97	(0.87–1.07)	0.52

Furthermore, air pollution exposure misclassification, due to between-area mobility and within-area variation, is another potential source of bias that could affect the ecological regression results described in our example study. Methods to account for the propagation of exposure error into the ecological regression model (*13*) could be applied to help mitigate the impact of measurement error. Outcome misclassification is another limitation that can be partially overcome by accessing nationwide registry data with the validated cause of death (*14*). As in all observational studies, adjustment for measured and unmeasured confounding presents another key challenge in ecological regression analyses, which may be exacerbated when dealing with dynamic pandemic data, as in our study. Conducting studies using both traditional regressions and methods for causal inference as in Wu *et al.* (*2*) is necessary to assess the robustness of the findings.

Increasing the scientific rigor of research in this area requires access to representative, individual-level data on COVID-19 health outcomes, including information about patients' residential address, demographics, and individual-level confounders. This is an enormous challenge that will require consideration of many privacy, legal, and ethical trade-offs (*14*). Future areas of research also include the application of statistical methods to quantify and correct for ecological bias and measurement error, reproducible methods for causal inference, and sensitivity analysis of measured and unmeasured confounding bias as suggested above. These strengths and limitations are illustrated further in the context of our own study (see the Supplementary Materials).

DISCUSSION

Ecological regression analyses are crucial to stimulate innovations in a rapidly evolving area of research. Ongoing research has already focused on overcoming some aspects of these limitations (*8*, *15*). For example, ecological regression analysis of air pollution and COVID-19, using data with finer geographic resolution, is being conducted for different countries and regions around the world. Cole *et al.* (*8*) published an ecological regression analysis using data in Dutch municipalities and found results consistent with our own investigation; the California Air Resources Board (CARB) is planning to conduct a similar study at the census tract level (*15*). Although an ecological regression analysis cannot provide insight into the mechanisms underlying the relationship between $PM_{2.5}$ exposure and COVID-19 mortality, studies are starting to shed light on the potential biological mechanisms that may explain the relationship between air pollution and viral infection outcomes (*16*). For example, it has been hypothesized that chronic exposure to $PM_{2.5}$ causes alveolar angiotensin-converting enzyme 2 (ACE-2) receptor overexpression and impairs host defenses (*17*). This could cause a more severe form

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Table 2. Strengths and limitations of ecological regression analyses applied to research on air pollution and COVID-19 and opportunities for future research.

	Strengths	Limitations	Future research
Study design: ecological regression	Feasible, timely, and cost-effective	Cannot be used to make inference about individual-level associations, doing so leads to ecological fallacy	Augment county-level data with individual-level data to adjust for ecological bias (*12*)
	Data are representative of the entire U.S. population	Cannot adjust for individual-level risk factors such as age, gender, and race (*19*–*21*)	Conduct studies of individual-level health records using traditional regression and causal inference methods as in Wu *et al.* (*2*)
	Allows inference at the area level, which can be useful for policy-making (*11*)	Results are sensitive to the assumptions of the statistical model (*11*)	
	Computationally efficient and can be conducted daily to allow for the dynamic nature of the data and observe temporal trends; see fig. S3		
	Facilitates comparison of results across countries		
Outcome: COVID-19 deaths aggregated at the county level	Publicly available data updated almost daily	Potential for outcome misclassification (*22*), particularly differential misclassification over time and space, which could bias results	Access to nationwide registry data with the validated cause of death (*14*)
			Analyses using county excess deaths as the outcome (*23*)
Exposure: 2000–2016 average exposure to $PM_{2.5}$ at the county level	Use of well-validated atmospheric chemistry models and machine learning models (*9*, *24*)	Aggregation assumes that everyone in a county experiences the same exposures, leading to exposure misclassification, especially for the largest counties	Individual-level data on COVID-19 deaths with geocoded addresses to link to air pollution data at the place of residence
	$PM_{2.5}$ exposure estimated at fine grids, which can be aggregated to the county level to assess exposure even in unmonitored areas (*24*)	Can be used to assess historical exposures to air pollution but not real-time exposures	Additional statistical methods to account for the propagation of exposure error into the ecological regression model (*13*)
	As opposed to using monitor data, aggregation of modeled estimates ensures that county $PM_{2.5}$ exposure estimates represent the distribution across the entire area		
Measured confounders	More than 20 area-level variables capture age distribution, race distribution, socioeconomic status, population density, behavioral risk factors, epidemic stage, and stay-at-home orders (see tables S1 and S2)	County average features may not represent the features of COVID-19 patients, leading to inadequate adjustment	Causal inference approaches to adjust for measured confounding bias, producing results that are less sensitive to statistical modeling assumptions
	These overlap with the confounder sets used in much of the previous literature on air pollution and health (*25*, *26*)	Difficult to formalize the notion of "epidemic stage," which may be an important confounder	
		The threat of unmeasured confounding bias still present	Causal inference approaches to assess covariate balance (*2*)
		Sensitive to the form of the statistical model specified (i.e., assumptions of linearity and no effect modification)	Individual-level data on key measured confounders such as smoking and body mass index
Unmeasured confounders	Leverage existing approaches, such as the calculation of the E-value (*27*), to assess how strong the effect of an unmeasured confounder would need to be to explain away the associations detected (see section S3)	The most important threat to the validity of any observational study Even measures like the E-value cannot inform us about the likelihood that a strong unmeasured confounder exists; this must be evaluated on the basis of subject matter knowledge	Natural experiment designs and instrumental variables can be used to reduce the threat of unmeasured confounding but are less common

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of COVID-19 in ACE-2–depleted lungs, increasing the likelihood of poor outcomes, including death (*18*).

The associations detected in ecological regression analyses provide strong justification for follow-up investigations as more and higher-quality COVID-19 data become available. Such studies would include validation of our findings with other data sources and study types, as well as investigations into mediating factors and effect modifiers, biological mechanisms, impacts of $PM_{2.5}$ exposure timing, and relationships between $PM_{2.5}$ and other COVID-19 outcomes such as hospitalization. Research on how modifiable factors may exacerbate COVID-19 symptoms and increase mortality risk is essential to guide policies and behaviors to minimize fatality related to the pandemic. Such research could also provide a strong scientific argument for revision of the U.S. Ambient Air Quality Standards for $PM_{2.5}$ and other environmental policies in the midst of a pandemic.

SUPPLEMENTARY MATERIALS

Supplementary material for this article is available at http://advances.sciencemag.org/cgi/content/full/6/45/eabd4049/DC1

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Acknowledgments: The computations in this paper were run on (i) the Odyssey cluster supported by the FAS Division of Science, Research Computing Group at Harvard University and (ii) the Research Computing Environment supported by Institute for Quantitative Social Science in the Faculty of Arts and Sciences at Harvard University. We gratefully acknowledge support from the 2020 Star-Friedman Challenge for Promising Scientific Research, the Climate Change Solutions Fund at Harvard University, and the Fernholz Foundation. We would like to thank L. Goodwin and S. Tobin for editorial assistance in the preparation of this manuscript. **Funding:** This work was made possible by support from NIH grants R01 ES024332-01A1, P50MD010428, RO1 ES026217, RO1 ES028033, R01 ES030616, R01 AG066793-01, and R01 MD012769; Health Effects Institute grant (HEI) 4953-RFA14-3/16-4: and US EPA grant 83587201-0. The funding sources did not participate in the design or conduct of the study; collection, management, analysis, or interpretation of the data; or preparation, review, or approval of the manuscript. The research described in this article was conducted under contract to the HEI, an organization jointly funded by the EPA (Assistance Award No. R-83467701), and certain motor vehicle and engine manufacturers. The contents of this article do not necessarily reflect the views of HEI or its sponsors, nor do they necessarily reflect the views and policies of the EPA or motor vehicle and engine manufacturers. **Author contributions:** X.W. and R.C.N. contributed equally to the paper. X.W. and R.C.N. contributed to formulation of the idea, data preparation, data analysis, data interpretation, and writing of the manuscript. M.B.S. and D.B. contributed to data preparation, data interpretation, and review of the manuscript. F.D. contributed to formulation of the idea, study design, data interpretation, funding, and writing of the manuscript. All authors contributed to the interpretation of the results and critical revision of the manuscript for important intellectual content and approved the final version of the manuscript. The corresponding author attests that all listed authors meet authorship criteria and that no others meeting the criteria have been omitted. F.D. is the guarantor. **Competing interests:** The authors declare that they have no competing interests. **Data and materials availability:** All data needed to evaluate the conclusions in the paper are present in the paper and/or the Supplementary Materials. Data and code are publicly available at https://github.com/wxwx1993/PM_COVID. Additional data related to this paper may be requested from the authors.

Submitted 25 June 2020
Accepted 18 September 2020
Published 4 November 2020
10.1126/sciadv.abd4049

Citation: X. Wu, R. C. Nethery, M. B. Sabath, D. Braun, F. Dominici, Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis. *Sci. Adv.* **6**, eabd4049 (2020).

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Long-term effects of $PM_{2.5}$ on neurological disorders in the American Medicare population: a longitudinal cohort study

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Summary

Background Accumulating evidence links fine particulate matter ($PM_{2.5}$) to premature mortality, cardiovascular disease, and respiratory disease. However, less is known about the influence of $PM_{2.5}$ on neurological disorders. We aimed to investigate the effect of long-term $PM_{2.5}$ exposure on development of Parkinson's disease or Alzheimer's disease and related dementias.

Methods We did a longitudinal cohort study in which we constructed a population-based nationwide open cohort including all fee-for-service Medicare beneficiaries (aged ≥65 years) in the contiguous United States (2000–16) with no exclusions. We assigned $PM_{2.5}$ postal code (ie, ZIP code) concentrations based on mean annual predictions from a high-resolution model. To accommodate our very large dataset, we applied Cox-equivalent Poisson models with parallel computing to estimate hazard ratios (HRs) for first hospital admission for Parkinson's disease or Alzheimer's disease and related dementias, adjusting for potential confounders in the health models.

Findings Between Jan 1, 2000, and Dec 31, 2016, of 63 038 019 individuals who were aged 65 years or older during the study period, we identified 1·0 million cases of Parkinson's disease and 3·4 million cases of Alzheimer's disease and related dementias based on primary and secondary diagnosis billing codes. For each 5 μg/m³ increase in annual $PM_{2.5}$ concentrations, the HR was 1·13 (95% CI 1·12–1·14) for first hospital admission for Parkinson's disease and 1·13 (1·12–1·14) for first hospital admission for Alzheimer's disease and related dementias. For both outcomes, there was strong evidence of linearity at $PM_{2.5}$ concentrations less than 16 μg/m³ (95th percentile of the $PM_{2.5}$ distribution), followed by a plateaued association with increasingly larger confidence bands.

Interpretation We provide evidence that exposure to annual mean $PM_{2.5}$ in the USA is significantly associated with an increased hazard of first hospital admission with Parkinson's disease and Alzheimer's disease and related dementias. For the ageing American population, improving air quality to reduce $PM_{2.5}$ concentrations to less than current national standards could yield substantial health benefits by reducing the burden of neurological disorders.

Funding The Health Effects Institute, The National Institute of Environmental Health Sciences, The National Institute on Aging, and the HERCULES Center.

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Lancet Planet Health 2020; 4: e557–65

Published Online October 19, 2020 https://doi.org/10.1016/S2542-5196(20)30227-8

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Introduction

Globally, neurological disorders are the leading group-cause of disability and the second leading group-cause of death, posing an urgent and substantial worldwide public health challenge.[1] Parkinson's disease and Alzheimer's disease and related dementias are the most prevalent neurodegenerative diseases.[2] Worldwide, an estimated 6 million people have Parkinson's disease and 44 million people have Alzheimer's disease and related dementias.[1] The Global Burden of Diseases, Injuries, and Risk Factors Study 2016 analysis estimated that, since 1990, the prevalence of Parkinson's disease has increased by 145% and Alzheimer's disease and related dementias have increased by 117%. The prevalence of these conditions is expected to continue to increase due to lengthening life expectancy.[1] As no cure exists yet for these conditions, the identification of modifiable risk factors, such as environmental exposures, should be a top research priority.

Concern is mounting that air pollution increases the risk for neurological disorders. Emerging evidence has shown that particulate air pollution is associated with impaired cognitive function,[3,4] accelerated cognitive decline,[5,6] Parkinson's disease, Alzheimer's disease, and dementia.[7–9] Research suggests that air pollution might contribute to the potential onset of neurodegeneration via mechanisms such as oxidative stress, systemic inflammation, and neuroinflammation, among others.[10–12] There is also evidence that air pollution might exacerbate disease progression by accelerating these biological pathways or worsening intermediate processes.[13,14] Therefore, the first hospital admission with a relevant diagnosis code is occurring sooner than expected. Previous studies that used hospital admission data to assess the effect of air pollution exposure on progression of Parkinson's disease and Alzheimer's disease and related dementias included populations residing in the southeastern US region,[7,15] the

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Research in context

Evidence before this study

Air pollution is a known risk factor for poorer human health. Concern is mounting that air pollution increases the risk for neurological disorders, the leading group-cause of disability and the second leading group-cause of death according to the Global Burden of Diseases, Injuries, and Risk Factors Study 2016. We searched PubMed and Google Scholar for studies examining associations of air pollution exposure with neurological disorders published from database inception until Aug 25, 2020. We used the keywords: ("PM2.5" OR "fine particulate matter" OR "fine particles" OR "air pollution" OR "air pollutants") AND ("neurological" OR "neurodegeneration" OR "neurodegenerative" OR "cognitive" OR "Parkinson's disease" OR "Alzheimer's disease" OR "dementia"). Although toxicological evidence links long-term $PM_{2.5}$ exposure with adverse effects on the nervous system, the epidemiological evidence remains scarce. Emerging evidence has shown that particulate matter air pollution is associated with impaired cognitive function, accelerated cognitive decline, Parkinson's disease, Alzheimer's disease, and dementia. The studies using hospital admission data to look at the effect of particulate matter air pollution on these conditions generally included populations residing in well monitored urban areas, or in a single region of the USA, or in a province of Canada. To date, no study has been done nationwide in the USA. Previous studies also focused on older data; air pollution concentrations in the USA have been steadily decreasing, so it is essential to establish whether these associations persist even at lower concentrations.

Added value of this study

To our knowledge, this is the first nationwide cohort study of the association between $PM_{2.5}$ exposures and neurodegenerative disease in the USA. Our findings provide strong epidemiological evidence for the association between air pollution and neurological disorders. We showed that long-term $PM_{2.5}$ exposures were significantly associated with an increased risk of first hospital admission with primary or secondary diagnosis codes for Parkinson's disease and Alzheimer's disease and related dementias. In addition, we observed that risk of first hospital admission with a diagnosis code for these conditions, as a proxy for neurodegeneration, linearly increased with increasing $PM_{2.5}$ concentrations less than the current national standards (annual mean 12 $\mu g/m^3$), suggesting that no safe threshold exists for health-harming pollution concentrations. One highlight of this paper is that we are leveraging an unparalleled amount of data compared with any previous air pollution study to our knowledge, to provide robust epidemiological evidence with the highest possible scientific rigour. Another key feature is the use of innovative computational approaches to accommodate our very large datasets, which can be applicable to other epidemiological studies that face similar challenges in the era of big data.

Implications of all the available evidence

Our study adds to the small but emerging evidence base indicating that long-term air pollution exposures are linked to an increased risk of neurological health deterioration, even at $PM_{2.5}$ concentrations less than the current national standards. Our findings suggest that policies that result in further reductions in ambient $PM_{2.5}$ concentrations can yield substantial health benefits in the ageing American population, even for those already exposed to low $PM_{2.5}$ concentrations.

Ontario province of Canada,[8] and well monitored urban areas in the northeastern USA.[9] To the best of our knowledge, no study to date has been done in the whole US population. Previous studies also focused on older data; as air pollution concentrations have been steadily decreasing in the past few decades in the USA although increases have been seen in some regions, it is essential to establish whether these associations persist even at low concentrations. Hence, evidence remains scarce for the health effects of long-term exposure to low amounts of air pollution across the USA, including locations with sparse or no monitoring.

We aimed to investigate the effect of long-term exposure to fine particulate matter ($PM_{2.5}$) on hospital admissions with a Parkinson's disease or an Alzheimer's disease and related dementias diagnosis code. We leveraged a nationwide comprehensive dataset integrating highly accurate and well validated high-resolution $PM_{2.5}$ prediction models and health data for all fee-for-service Medicare beneficiaries across the contiguous United States (2000–16). To address the computational challenges, we applied a novel computationally scalable re-parameterised Cox-equivalent Poisson model.

Methods

Study design and participants

We did a longitudinal cohort study in which we constructed a cohort including all Medicare-fee-for-service beneficiaries who were aged 65 years or older in the USA from Jan 1, 2000, to Dec 31, 2016, using the Medicare part A data. We obtained the Medicare inpatient hospital claims from the Medicare Provider and Analysis Review files, which include one record per hospital admission. People are eligible to enter Medicare after they turn 65 years of age, and for each beneficiary, follow-up started on Jan 1, 2000, or Jan 1 of the year following entry into the cohort, until first admission with diagnosis codes for each outcome separately (ie, Parkinson's disease or Alzheimer's disease and related dementias), death, or the end of the study period, whichever came first. We extracted age, sex, race, postal code (ie, ZIP code) of residence, and Medicaid eligibility for each

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beneficiary in each follow-up year. Medicaid (which is distinct from Medicare) is a joint federal–state insurance programme that provides health and nursing home coverage to Americans of all ages on low incomes or with disabilities. Medicaid eligibility is a proxy for individual-level socioeconomic status—ie, a Medicare beneficiary eligible for Medicaid is likely to have lower socioeconomic status. This study was done under a protocol approved by the Human Subjects Committee of the Harvard T H Chan School of Public Health. Written informed consent of individuals was not required due to the nature of the study.

Procedures

We used International Classification of Diseases (ICD) codes to identify Parkinson's disease (ICD-9: 332; ICD-10: G20, G21·11, G21·19, and G21·8) or Alzheimer's disease and related dementias (ICD-9: 331·0, 290; ICD-10: G30·9, and F05) admissions as principal or secondary diagnoses during the study period (appendix p 3). We observed some overlap in diagnoses for Alzheimer's disease and dementia. We found that 298 461 (24·2%) of 1 233 132 Medicare-fee-for-service beneficiaries with a dementia diagnosis also received an Alzheimer's disease diagnosis, while of 2 490 431 Medicare-fee-for-service beneficiaries with Alzheimer's disease diagnoses, 298 461 (12·0%) also received a dementia diagnosis. This overlap in diagnoses probably reflects different classifications in different medical centres, but not diagnostic misclassification, as routinely collected health data have been shown to achieve high positive predictive values.[15] Therefore, following the literature,[8] we combined Alzheimer's disease and dementia into one outcome for the main analysis and treated them separately as a sensitivity analysis. Thus, separate analyses were done for the two outcomes: Parkinson's disease and Alzheimer's disease and related dementias.

We obtained daily $PM_{2.5}$ predictions at a 1 km² spatial resolution across the contiguous United States from a well validated ensemble model.[16] The model included more than 100 predictor variables from satellite data, land-use and meteorological variables, and chemical transport model simulations. The model was calibrated with daily $PM_{2.5}$ concentrations measured at 2156 monitors—data obtained from the US Environmental Protection Agency's Air Quality System database and IMPROVE monitoring network—and had excellent performance (10-fold cross-validated r^2 of 0·86 for $PM_{2.5}$ predictions across the USA, ranging from 0·77 in the mountainous USA to 0·92 in the eastern Midwestern USA). The technical details, including information on the model validation, have been previously published.[16] Using daily $PM_{2.5}$ predictions at 1 km² grid cells, we calculated the daily mean $PM_{2.5}$ concentration for each postal code, by averaging the predictions at the grid cells whose centroids fell within the boundary of that postal code. Based on these results, we estimated annual postal code means and assigned the postal code-wide annual $PM_{2.5}$ concentration means to Medicare enrollees according to the postal code of residence and calendar year. In the USA, the mean population per postal code is around 7500. Each postal code can cover a small area in cities but can be larger in rural areas. The median land area of a postal code is around 92 km².

Statistical analysis

We collected neighbourhood-level socioeconomic status variables, available at county level or postal code tabulation areas level, which have both been associated with ambient air pollution and implicated in neurological health.[17,18] These variables were derived from the 2000–16 Behavioral Risk Factor Surveillance System, the 2000 and 2010 US Census, and the American Community Survey for each year from 2005 to 2016 (appendix pp 3–4). Region was classified as northeast, southeast, midwest, southwest, and west.

Given the very large dataset, we applied a Cox-equivalent re-parameterised Poisson approach for each of the two outcomes, coupled with parallel computing, to address the computational challenges (eg, inadequate memory size and lengthy computational time) faced by the conventional Cox proportional hazards model. Specifically, we proposed and fit a stratified quasi-Poisson model to estimate associations between the rate of first hospital admissions with neurological-related diagnosis codes (Parkinson's disease or Alzheimer's disease and related dementias) and time-varying annual mean $PM_{2.5}$ concentrations. The dependent variable was the count of outcome-related hospital admissions in each follow-up year, calendar year, and postal code location within strata specified by individual characteristics, using the corresponding total person-time of Medicare-fee-for-service beneficiaries as the offset. By stratifying on individual characteristics—ie, sex, race, Medicaid eligibility, and age at study entry in 2-year categories—we allowed for flexible strata-specific baseline rates. Mathematically, this stratified Poisson model is equivalent to a time-varying Cox proportional hazard model under an Anderson-Gill representation (appendix pp 4–5).[19] Importantly, the Cox-equivalent Poisson models also allowed use of parallel computing techniques that are not available for Cox models, further reducing the computation time. To account for within postal code correlated observations across years, we applied an m-out-n bootstrap method using postal code units to calculate statistically robust CIs.[20]

To adjust for potential confounding, we also included neighbourhood-level socioeconomic status factors in our analyses. To account for potential residual confounding by spatial and temporal trends, we included indicator variables for region and calendar years. We also estimated effects at low concentrations of $PM_{2.5}$, by restricting analyses to the subset of the cohort with annual exposures always lower than the current national standards

See Online for appendix

For the **Environmental Protection Agency's air quality data** see https://www.epa.gov/outdoor-air-quality-data

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(ie, 12 μg/m³) over the study period (low-exposure analysis). Finally, to evaluate any potential deviations from linearity in the concentration–response curves, we included penalised splines for the $PM_{2.5}$ term in the models.

	Full cohort (n=63 038 019)	Low-exposure cohort (n=21 928 573)
Age at entry, years		
65–74	48 784 857 (77·4%)	17 010 757 (77·6%)
75–84	10 550 039 (16·7%)	3 673 343 (16·8%)
85–94	3 327 268 (5·3%)	1 134 507 (5·2%)
95–104	375 708 (0·6%)	109 934 (0·5%)
105–114	147 (<0·1%)	32 (<0·1%)
Mean (SD)	69·9 (7·2)	69·8 (7·1)
Sex		
Men	28 295 987 (44·9%)	10 084 588 (46·0%)
Women	34 742 032 (55·1%)	11 843 985 (54·0%)
Race		
White	53 229 370 (84·4%)	19 776 603 (90·2%)
Black	5 513 530 (8·7%)	663 313 (3·0%)
Other*	4 295 119 (6·8%)	1 488 657 (6·8%)
Medicaid eligibility		
Eligible	7 853 739 (12·5%)	2 405 354 (11·0%)
Ineligible	55 184 280 (87·5%)	19 523 219 (89·0%)
$PM_{2.5}$ concentration, μg/m³	9·7 (3·2)	7·2 (2·3)
Body-mass index, kg/m²	27·5 (1·1)	27·3 (1·0)
Ever smoked, %	47·1 (7·7)	48·1 (7·8)
Hispanic, %	9·2 (16·7)	9·2 (16·3)
Black, %	9·1 (17·3)	2·7 (7·5)
Median household income, US$1000	48·0 (21·7)	47·5 (18·9)
Median home value, $1000	159·0 (141·9)	153·9 (131·8)
Below poverty level, %	11·0 (10·9)	9·7 (10·2)
Not graduated from high school, %	28·7 (18·8)	24·2 (17·1)
Owner-occupied housing, %	71·1 (18·8)	75·2 (14·8)
Population density, people per mile²	1601·2 (5233·1)	595·1 (1595·8)

Data are n (%) or mean (SD). *Other included Asian, Hispanic, American Indian or Alaskan Native, and unknown.

Table 1: Cohort characteristics

	Parkinson's disease	Alzheimer's disease and related dementias
Main analyses		
Number of admissions	1 033 669	3 425 102
Total person-years	478 335 593	473 696 618
Median follow-up year	7	7
HR per 5 μg/m³ $PM_{2.5}$	1·13 (1·12–1·14)	1·13 (1·12–1·14)
Low-exposure analyses (<12 μg/m³)		
Number of admissions	301 227	939 035
Total person-years	156 287 478	155 139 930
Median follow-up year	6	6
HR per 5 μg/m³ $PM_{2.5}$	1·14 (1·12–1·16)	1·18 (1·15–1·21)

Data are n or HR (95% CI). HR=hazard ratio.

Table 2: Cause-specific admissions for Parkinson's disease and Alzheimer's disease and related dementias, 2000–16

To identify subpopulations who might be particularly susceptible, we assessed potential effect modification by sex (men *vs* women), race (white people *vs* Black people *vs* other [Asian, Hispanic, American Indian or Alaskan Native, and unknown]), age (≥80 years *vs* <80 years), Medicaid eligibility (dual *vs* non-dual eligibility) as a surrogate for individual-level socioeconomic status, and urbanicity (quartiles of population density), by including interaction terms between these potential modifiers and $PM_{2.5}$. Specifically, we calculated the effect of $PM_{2.5}$ in each category of the effect modifier and assessed significance of the interaction term. We chose the age of 80 years as a cutoff to distinguish the young and middle-old from the old-old.[21]

We did a series of sensitivity analyses to assess the robustness of our results to confounding, inclusion of prevalent cases, potential outcome misclassification, and exposure time window (appendix pp 5–8). Given that these neurodegenerative diseases are age-dependent, as additional sensitivity analysis we also considered stratification by age at entry using 1-year intervals. To remove potentially prevalent cases, we ran additional analyses excluding anyone who had a first admission for these outcomes in their first 2 years of follow-up and repeated our analyses. As information in Medicare is only available after beneficiaries turn 65 years old, it is possible that some study participants had a Parkinson's disease or Alzheimer's disease and related dementias hospital admission before enrolling to Medicare. This sensitivity analysis—excluding cases with an admission during their first 2 years of enrolment—increases the probability that we are capturing the first admission with a related code. To evaluate whether the associations we observed can be attributed to a different outcome also linked to air pollution, we excluded the subset of Parkinson's disease and Alzheimer's disease and related dementias cases with the most frequent category of primary discharge codes (ie, circulatory system disease [ICD-9: 390–459; ICD-10: I00–I99]) from analyses. The primary discharge code appeared in 392 588 (41·1%) cases of Parkinson's disease and 1 323 044 (45·3%) cases of Alzheimer's disease and related dementias. Additionally, we added a sensitivity analysis restricting cases only to those with primary diagnoses codes for Parkinson's disease or Alzheimer's disease and related dementias. Finally, we considered an alternative exposure window with 1-year lag period (ie, using the annual mean exposure during the year preceding the outcome). Considering that chemical composition of $PM_{2.5}$ mass (and thus relative toxicity) can vary markedly among different regions in the USA, we also did a subgroup analysis by region.

The computations of the analyses of this study were done on the Research Computing Environment, which is supported by the Institute for Quantitative Social Science at Harvard University. We used R software, version 3.3.2 for all analyses.

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Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding author had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Results

Data were analysed for Medicare beneficiaries who were 65 years and older between Jan 1, 2000, and Dec 31, 2016. The full cohort included 63 038 019 individuals living in 39 065 postal codes (table 1). The mean age at entry was 69·9 years (SD 7·2). There were 478·3 million person-years of follow-up for Parkinson's disease and 473·7 million for Alzheimer's disease and related dementias (table 2). The total number of first admissions was 1·0 million for Parkinson's disease and 3·4 million for Alzheimer's disease and related dementias. The median follow-up was 7 years (IQR 8). Of the Parkinson's disease cases, 77 016 (7·5%) of 1 033 669 had Parkinson's disease as the primary discharge diagnosis code and, of the Alzheimer's disease and related dementias cases, 502 565 (14·7%) of 3 425 102 did. For the cases identified with secondary diagnoses of these conditions, we examined the distribution of primary diagnostic codes and found that the primary conditions were predominantly circulatory system diseases (appendix p 8).

The low-exposure cohort subset included 21 928 573 individuals living in 15 775 postal codes, with a mean entry age of 69·8 years (SD 7·1). For Parkinson's disease, the total person-years of follow-up was 156·3 million and for Alzheimer's disease and related dementias, it was 155·1 million. The number of first admissions was 0·3 million for Parkinson's disease and 0·9 million for Alzheimer's disease and related dementias (table 2).

The mean annual $PM_{2.5}$ concentration over the study period was 9·7 μg/m³ (SD 3·2, IQR 4·3, 5th to 95th percentile 5·2–15·9; figure 1A). $PM_{2.5}$ concentrations were generally higher in eastern USA than in western USA (except California). Figures 1B and 1C present the occurrence of first hospital admissions with a Parkinson's disease or an Alzheimer's disease and related dementias diagnosis code, per 100 000 Medicare beneficiaries across the contiguous United States (2000–16).

Overall, long-term exposure to $PM_{2.5}$ was significantly positively associated with both neurodegenerative outcomes in both the entire cohort and the low-exposure subset. Specifically, in the entire cohort we observed a hazard ratio (HR) of 1·13 (95% CI 1·12–1·14) for Parkinson's disease admissions and an HR of 1·13 (1·12–1·14) for Alzheimer's disease and related dementias admissions per 5 μg/m³ increase in annual $PM_{2.5}$ concentrations. In the low-exposure subset, we found a slightly elevated association (HR 1·14, 95% CI 1·12–1·16) for Parkinson's disease and an elevated association (HR 1·18, 1·15–1·21) for Alzheimer's disease and related dementias admissions per 5 μg/m³ $PM_{2.5}$ increase (table 2).

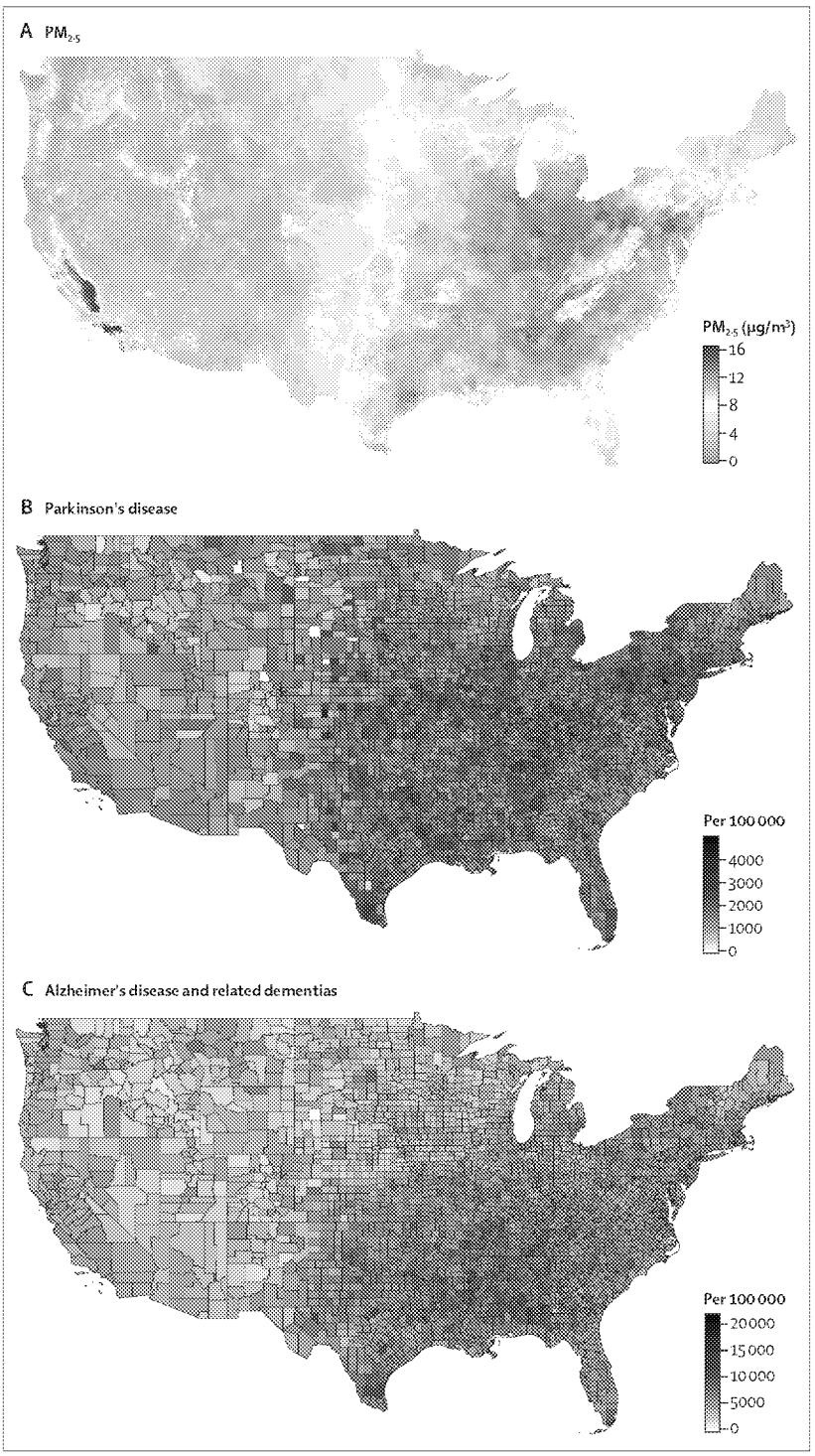

Figure 1: **Nationwide concentrations of $PM_{2.5}$, and occurrences of Parkinson's disease and Alzheimer's disease and related dementias across the contiguous United States**

(A) 17-year mean of annual $PM_{2.5}$ concentrations (μg/m³). (B) Occurrence of first Parkinson's disease hospital admissions per 100 000 Medicare beneficiaries. (C) Occurrence of first Alzheimer's disease and related dementias hospital admissions per 100 000 Medicare beneficiaries (2000–16).

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Figure 2 shows the concentration–response relationships for Parkinson's disease and Alzheimer's disease and related dementias. We observed a strong linear relationship for annual mean $PM_{2·5}$ concentrations less than 16 μg/m³, followed by a plateaued association with increasingly larger confidence bands for both outcomes. However, less than 5% of the distribution of the $PM_{2·5}$ concentrations were greater than 16 μg/m³.

Among the effect modifiers, we found $PM_{2·5}$ effect estimates that were significantly larger in magnitude among individuals in more urban areas versus those in less urban areas (as expressed in quartiles of population density). We also observed higher HRs among those who identified as white than those who identified as Black or Asian, Hispanic, American Indian or Alaskan Native, and unknown, and for women compared with men (figure 3).

For both Parkinson's disease and Alzheimer's disease and related dementias, all sensitivity analyses yielded similar results to the main analyses (appendix pp 5–8). When excluding potentially prevalent cases (ie, excluding those who had a first admission in the first 2 years of follow-up), both effect estimates were slightly elevated. The sensitivity analysis in which Alzheimer's disease and dementia were treated as separate outcomes also yielded significant and positive associations between $PM_{2·5}$ and the two separate outcomes of interest. However, the effect estimates for Alzheimer's disease (HR 1·17, 95% CI 1·16–1·18) were higher than those for dementia (HR 1·06, 1·05–1·07). Our results were robust to confounding adjustment—ie, the results were almost unchanged when we excluded different sets of covariates in alternative models compared with the main one. Additionally, both exclusion of all cases identified through secondary diagnostic codes and exclusion of those secondary diagnostic cases with circulatory system disease as the primary diagnosis code did not change the main results. Finally, our results were robust to the use of a different exposure window. The 1-year lagged exposure analysis (eg, using annual mean $PM_{2·5}$ in 2005 to link the outcome in 2006) yielded results nearly identical to the findings from our main analysis.

All region-specific results consistently suggested a link between $PM_{2·5}$ and first Parkinson's disease and Alzheimer's disease and related dementias hospital admissions, although effect estimates varied by geographical region. In summary, we observed the highest HR for first Parkinson's disease hospital admission among Medicare enrollees in the northeastern USA and for first Alzheimer's disease and related dementias hospital admissions in the midwestern USA.

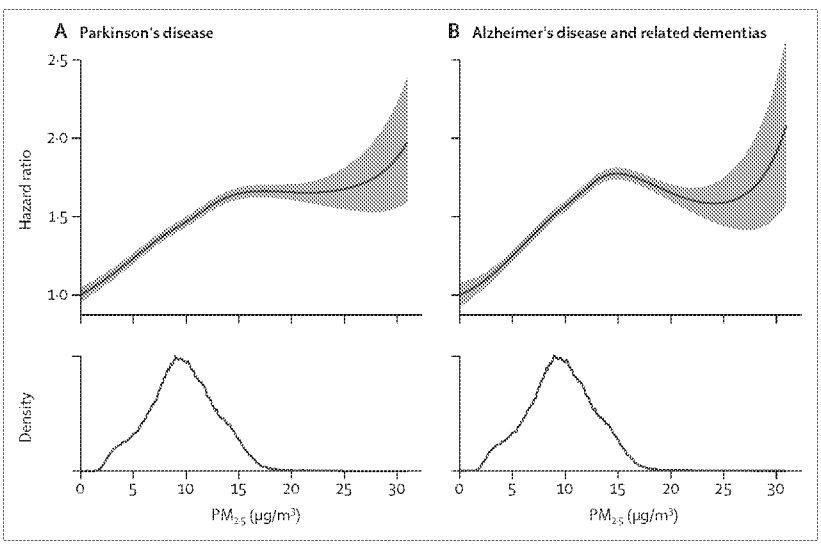

Figure 2: **Concentration–response curves of the association between long-term $PM_{2·5}$ exposure and neurological disorders**
Parkinson's disease (A) and Alzheimer's disease and related dementias (B).

Discussion

In this large, nationwide prospective cohort of all Medicare-fee-for-service beneficiaries, long-term exposure to $PM_{2·5}$, an indicator for the air pollution mixture at each postal code, was associated with an increased risk of first hospital admission with a Parkinson's disease or an Alzheimer's disease and related dementias diagnosis code, even at concentrations less than the current annual national standards (12 μg/m³). We also identified women, white people, and more urbanised populations as particularly susceptible subgroups. These findings suggest that improving air quality, with $PM_{2·5}$ concentrations even lower than current national standards, could yield public health benefits.

The shape of the concentration–response relationship between air pollution and neurodegeneration has rarely been assessed in the literature. Only one previous study simply assessed non-linearity using quartiles and found no evidence of deviation.[9] This result was in agreement with our results, had we used quartiles. Use of splines allowed for a more detailed characterisation of the shape across the $PM_{2·5}$ concentration range. Risk of first hospital admission with a Parkinson's disease or an Alzheimer's disease and related dementias diagnosis code, as a proxy for neurodegeneration progression, linearly increased with increasing $PM_{2·5}$ concentrations less than the current annual standards (12 μg/m³), suggesting no safe threshold for harmful pollution. Although we detected some deviations from linearity at concentrations greater than 16 μg/m³, less than 5% of the observations were higher than that. It is possible that any deviation at such high concentrations could indicate that the flexible penalised splines are sensitive to potential outlying observations with high leverage.

Our findings regarding associations between $PM_{2·5}$ and Alzheimer's disease and related dementias are consistent with previous research, both in terms of direction and magnitude; of these, one was done in Ontario's Canadian population,[8] and the other two were done in regional subpopulations of US Medicare enrollees.[7,9] Mixed results,

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including both positive and null findings, however, were reported for the association between $PM_{2.5}$ and Parkinson's disease in the literature.[9,22,23] It is worth noting that a comprehensive city-level study in 50 northeastern US cities among Medicare enrollees found higher estimates in magnitude for Parkinson's disease and Alzheimer's disease and related dementias than the ones estimated in this study,[9] which matches our finding of significantly higher $PM_{2.5}$ effects among urban dwellers. Other studies also found similar results in the urban populations they investigated.[7,8] The observed associations for the other grouping within race are not clear and more work is needed to understand these results. We note, however, that the percentage of the population aged older than 65 years in the USA who are not white or Black is 6·8%.

Both examined diseases have long insidious onsets and the exact timing of disease onset is not known.[24,25] Furthermore, disease diagnosis probably occurs at a neurologist's office and not during a hospital admission. Therefore, use of an administrative dataset does not allow investigation of the association between $PM_{2.5}$ and onset of these outcomes. That is, with our analysis we cannot examine true onset incidence or incidence of diagnosis. Our analysis estimates incidence of first hospital admission, which can be interpreted as increased susceptibility to hospital admissions among this patient population and accelerated disease progression. In support of our hypothesis and main findings, the sensitivity analysis excluding people that had a first admission in the first 2 years of the cohort (ie, potentially prevalent cases) resulted in larger in magnitude effect estimates.

In our main analysis, 956 653 (92·5%) of the Parkinson's disease cases and 2 922 537 (85·3%) of the Alzheimer's disease and related dementias cases that we identified were based on secondary causes and had a different primary cause of admission. Although this observation was expected, as these outcomes are monitored by neurologists and do not necessarily show up as primary hospital admissions, we were concerned that the observed effect could reflect the signal with the most common primary diagnosis code for these outcomes. Exclusion, however, of Parkinson's disease and Alzheimer's disease and related dementias cases with a primary diagnosis for circulatory system disease did not change our results.

Toxicological studies suggest various potential mechanisms via which air pollution might contribute to neurodegenerative progression. Systemic and brain inflammation, for example, enhance the pathogenic alteration of α-synuclein, accelerating the progression of Parkinson's disease[14] and Alzheimer's disease.[13] Oxidative stress, in addition, is also involved both in initiation and progression, and plays an important role in accelerating Parkinson's disease progression.[26] Air pollution might play a key role in neuroinflammation and further exacerbate or initiate dysfunctional protein handling, in the context of amyloid plaques, tau hyperphosphorylation, and neurofibrillary tangles.[27] Several air pollutants, including $PM_{2.5}$ and ultrafine (<0·1 μm) particulate matter, have been shown to easily cross the blood–brain barrier, providing an important route for air pollutants to interact with the CNS. Indeed, increases in air pollution can elicit increases in the inflammatory response in the prefrontal lobes, with concomitant increases in oxidative damage and amyloid β deposition. The origin of these pathological markers could arise from the direct interaction of air pollutants with microglia in the brain, resulting in a release of pro-inflammatory signals that further facilitate neuronal damage and protein aggregation. Elevation in pro-inflammatory signals can mediate dysfunctional protein handling, in the form of elevations in amyloid β and hyperphosphorylation of tau.[27] Given the pathogenesis of Alzheimer's disease and other neurogenerative diseases that are defined by neuroinflammation, oxidative damage, and protein misfolding, exposure to air pollution might serve as an important risk factor in the development and progression of

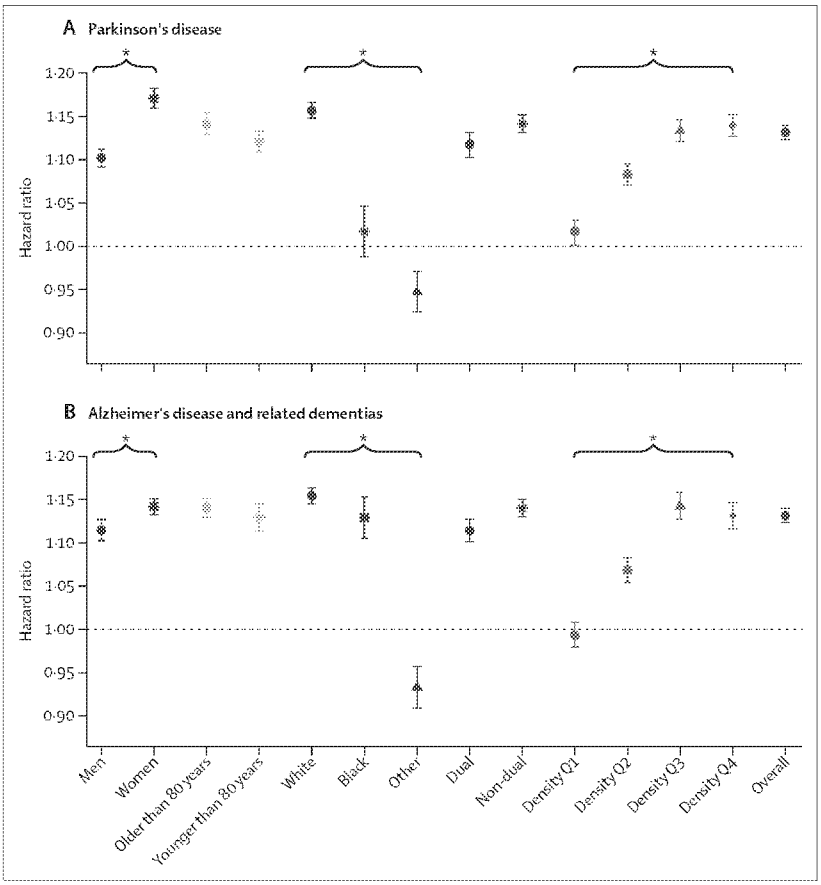

Figure 3: **Identification of vulnerable subpopulations**
Hazard ratios for Parkinson's disease (A) and Alzheimer's disease and related dementias (B) associated with a 5 μg/m³ increase in $PM_{2.5}$ concentrations by study subgroups. The shading represents the estimated main effects for the overall population. Dual or non-dual refers to eligibility for Medicaid. Density Q1–Q4 denote quartiles of population density—ie, low population density, low to medium population density, medium to high population density, and high population density. Other included Asian, Hispanic, American Indian or Alaskan Native, and unknown race. *Significant modification (at α=0·05 level).

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Alzheimer's disease and Parkinson's disease pathology and concomitant neurobehavioural deficits. For all neurological outcomes, we observed significantly higher effects of $PM_{2.5}$ among individuals in urban areas versus rural areas. One possible reason might be the abundance of metal-bearing nanoparticles in the urban atmosphere, which have very small diameters and can access the brain directly.[28] The higher estimates among white people and women could be attributed to a longer life expectancy in these groups—ie, the chance of competing risks among non-white individuals or men is greater, including the probability of death before developing Parkinson's disease or Alzheimer's disease and related dementias.[29]

Our study data and methods have several advantages. First, our study population of all Medicare-fee-for-service beneficiaries in the USA gives us ample power to detect effects. This statistical power is particularly useful in environmental studies in which exposures are highly prevalent but effect estimate sizes are often small. Second, our study assessed the whole of the USA, which has greater generalisability than previous smaller cohort studies that were geographically restricted, although our study might not be generalisable to other countries. Furthermore, the aggregation of data into strata of shared individual characteristics not only allowed us to create a more efficient model but also allowed us to analyse a very large dataset with a far smaller computational burden. Given the increase in the use of very large datasets, this novel analytical approach might be useful in other research as well.

Our findings, however, should be interpreted in light of some potential limitations. First, reliance on an administrative cohort did not allow us to examine the relationship between $PM_{2.5}$ and disease onset. Parkinson's disease and Alzheimer's disease and related dementias are diseases that do not require hospital admission for diagnosis and treatment; usually, hospital admission occurs at more advanced stages of the disease for treating complications or for adjusting the therapeutic plan. Thus, the hospital admission records cannot represent disease incidence and we probably underestimate the case number when using first hospital admission as a proxy for neurodegeneration. In addition, a positive predictive value of 0·65 for Parkinson's disease[30] and about 0·75 for Alzheimer's disease and related dementias[31] has been reported when Medicare claims were used, indicating the under-diagnosed nature of neurological conditions using claims records. Furthermore, our results only represent the Medicare-fee-for-service population, which does not include all Medicare beneficiaries. Specifically, earlier in our study period (eg, in 2003), the Medicare-fee-for-service population covered up to 29 230 838 (84·9%) of 34 423 305 Medicare beneficiaries, while in 2016 it was 30 974 063 (65·8%) of 47 099 370 Medicare beneficiaries. It is possible that Medicare-fee-for-service beneficiaries switched to Medicare-HMO (Medicare managed care plan) and back, potentially resulting in some missed cases in our data, as we have no information on Medicare-HMO claims records. Our findings, thus, might not be generalisable to the entire Medicare population. Second, the use of predicted concentrations for exposure assessment might have resulted in some exposure measurement error. However, the prediction model we used is considered to have excellent predictive accuracy,[16] substantially reducing potential exposure measurement error. In our study, exposure measurement error is likely to be non-differential because the error in the predicted ambient $PM_{2.5}$ concentrations is probably independent of outcome status. Thus, any resulting bias would be towards the null.[32] Third, we cannot exclude the possibility of potential residual confounding bias. We did, however, adjust all our models for multiple neighbourhood-level socioeconomic status variables, and thus any potential residual bias is expected to be very small. Individual-level risk factors for neurological disorders, such as smoking, are not available in Medicare. However, we used postal code mean predicted $PM_{2.5}$ to assign exposures, which could only covary with individual-level factors through postal code-level socioeconomic status,[33] for which we carefully adjusted, thus effectively minimising this potential source of bias. Fourth, our ensemble model predicts total $PM_{2.5}$ mass concentrations, but not all particles have the same toxicity; some studies have shown that traffic-related pollution might be particularly toxic.[34] Future studies should aim to disentangle specific effects of regional versus local particles.

In conclusion, our study provides strong epidemiological evidence that long-term exposure to air pollution is significantly associated with a higher risk of neurological health deterioration, even at concentrations less than the current national standards. Our findings suggest that policies that result in further reductions in ambient $PM_{2.5}$ concentrations can yield substantial health benefits in the ageing US population, even for those already exposed to low $PM_{2.5}$ concentrations.

Contributors

AZ and M-AK designed the research and directed its implementation. MDY, DB, YAA, YWe, YWa, PL, QD, JS, and FD prepared datasets. LS and XW analysed data. LS, XW, and PL made the figures. LS, XW, M-AK, and AZ wrote the paper, and all authors contributed to the revision of the manuscript.

Declaration of interests

We declare no competing interests.

Acknowledgments

We thank Benjamin Sabath for the support with the Research Computing Environment and William Michael Caudle for fruitful discussion. This study was supported by the Health Effects Institute (4953-RFA14-3/16-4), the National Institute of Environmental Health Sciences (NIEHS R01 ES024332, R01 ES028805, R21 ES028472, P30 ES009089, P30 ES000002), the National Institute on Aging (NIA/NIH R01 AG066793-01, P50 AG025688), and the HERCULES Center (P30ES019776). Research described in this Article was done under contract to the Health Effects Institute, an organisation jointly funded by the US Environmental Protection Agency (assistance award number R-83467701) and some motor vehicle and engine manufacturers. The contents of this Article do not necessarily reflect the views of the Health Effects Institute, or its sponsors, nor do they necessarily reflect

EPA-HQ-2021-5551

the views and policies of the US Environmental Protection Agency or motor vehicle and engine manufacturers. The computations in this paper were run on the Research Computing Environment supported by the Institute for Quantitative Social Science in the Faculty of Arts and Sciences at Harvard University.

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Message

From: Culligan, Kevin [Culligan.Kevin@epa.gov]
Sent: 2/3/2021 11:55:12 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]
Subject: Attached is a draft of the letter addressing the ACE decision
Attachments: ACE letter FEb 3 PM version.docx

It has extensive input from OGC staff

Message

From: Millett, John [Millett.John@epa.gov]
Sent: 2/2/2021 10:09:41 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]
CC: Campbell, Ann [Campbell.Ann@epa.gov]; Shaw, Betsy [Shaw.Betsy@epa.gov]; Shoaff, John [Shoaff.John@epa.gov]; Monroe, Scott [Monroe.Scott@epa.gov]; DeLuca, Isabel [DeLuca.Isabel@epa.gov]; Stevens, Katherine [stevens.katherine@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]
Subject: RE: ORIA all hands (Wed. 2/3) -- Agenda, TPs & Q/A
Attachments: draft Potential questions for ORIA All Hands_Feb 2021.docx; draft AA Talking Points for ORIA All Hands_Feb 2021.docx; ORIA All Hands Agenda_Feb 2021.docx

Good evening -- Updating with a final agenda from ORIA and some additional questions (in text below) that came in. Re-attaching the TPs and questions so everything's in the same place.

New ORIA q's:

Ex. 5 Deliberative Process (DP)

From: Millett, John
Sent: Monday, February 01, 2021 4:53 PM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>
Cc: Campbell, Ann <Campbell.Ann@epa.gov>; Betsy Shaw (Shaw.Betsy@epa.gov) <Shaw.Betsy@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>; Scott Monroe <Monroe.Scott@epa.gov>; Isabel DeLuca <DeLuca.Isabel@epa.gov>; Stevens, Katherine <stevens.katherine@epa.gov>
Subject: ORIA all hands (Wed. 2/3) -- Agenda, TPs & Q/A

Good afternoon all, and welcome, Alejandra! – in advance of Wednesday afternoon's all-hands with ORIA – attached please find: the agenda, q/a and talking points – all very much in line with the previous all hands meetings. ORIA did a great job pulling these together.

Thanks –

John

John Millett
Director, OAR Communications
Desk: 202-564-2903
Cell: 202-510-1822

Message

From: Adhar, Radha [Adhar.Radha@epa.gov]
Sent: 2/26/2021 4:16:00 AM
To: Hamilton, Lindsay [Hamilton.Lindsay@epa.gov]; Goffman, Joseph [Goffman.Joseph@epa.gov]; Cassady, Alison [Cassady.Alison@epa.gov]; Utech, Dan [Utech.Dan@epa.gov]
Subject: RE: Hold for Moot
Attachments: McCabe Moot Hearing2.26.docx

Hey y'all,

Attached, please find suggested questions for tomorrow. They focus primarily on her past record as AA and on the Biden Administration's EOs. These are just suggestions and I hope you won't hesitate to raise any issues you think Janet should be prepared to answer.

Please forgive copy editing issues!

Looking forward to it,
Radha

-----Original Appointment-----
From: Adhar, Radha
Sent: Friday, February 12, 2021 10:39 PM
To: Adhar, Radha; janetgmccabe@gmail.com; Hamilton, Lindsay; Goffman, Joseph; Cassady, Alison; Utech, Dan
Cc: McCabe, Janet G
Subject: Hold for Moot
When: Friday, February 26, 2021 9:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

Hey guys, I will add more folks to this calendar invite when I get confirmation from EPW re: Janet's hearing date. Hopefully soon.

Microsoft Teams meeting

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Phone Conference ID: Ex. 6 Personal Privacy (PP)
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Message

From: Agri-Pulse Daybreak [sara@agri-pulse.com]
Sent: 2/23/2021 9:59:30 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Agri-Pulse Daybreak Feb. 23: Vilsack faces long to-do list * Ag climate coalition expands * Biden EPA signals its biofuels approach

Agri-Pulse Daybreak Feb. 23: Vilsack faces long to-do list * Ag climate coalition expands * Biden EPA signals its biofuels approach

Your Agri-Pulse Daybreak for February 23, 2021

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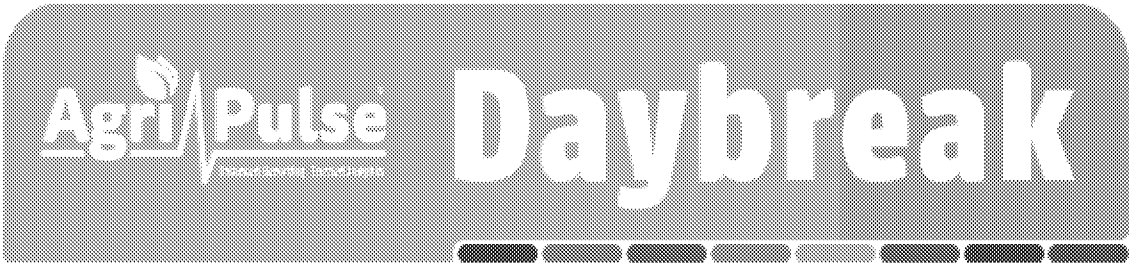

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Vilsack faces long to-do list

The Senate is finally set to vote today on sending Tom Vilsack back to USDA for a new stint as agriculture secretary, more than a month after Joe Biden became president.

Among the first issues he'll have to address when he returns to

the office is what to do about the Coronavirus Food Assistance Program. USDA put CFAP payments on pause after Biden took office so the department's new leaders could review what the outgoing Trump administration had done.

National Farmers Union President Rob Larew says Vilsack also needs to shore up morale among USDA employees. "He's going to want to generate a lot of excitement, buzz, that USDA can be part of the solution here in a number of ways," Larew said.

Vilsack also will have to implement provisions of the new stimulus bill making its way through Congress, plus get the ball rolling on ag climate policy.

Take note: The White House on Monday sent Jewel Bronaugh's nomination as deputy ag secretary to the Senate. The Virginia ag commissioner has been widely praised.

Ag climate coalition expands

The industry coalition formed last fall to shape agricultural climate policy, the Food and Agriculture Climate Alliance, has expanded significantly with the addition of 14 organizations to FACA's steering committee.

The new groups include the American Seed Trade Association, the Association of Equipment Manufacturers, Biotechnology Innovation Organization, Crop Insurance and Reinsurance Bureau

and the Farm Credit Council as well groups representing several commodities, including beef, corn, cotton, milk, sugar and rice.

Keep in mind: Expanding the steering committee gives FACA more reach and lobbying muscle, but it could also make it easier to agree on policy down the road.

Andrew Walmsley, who represents the American Farm Bureau Federation, a founding member of FACA, says there are several working groups focused on different policy aspects, including one on financial incentives and another on the concept of an ag carbon bank. The groups are charged with putting more details on FACA's policy recommendations.

Biden EPA signals its biofuels approach

President Joe Biden's Environmental Protection Agency will have a different approach to waivers from the nation's biofuel mandate.

The EPA announced Monday it agrees with a court ruling that said waivers from the Renewable Fuel Standard should be extended, not granted anew. Refiners are currently appealing the case to the Supreme Court and argue the Clean Air Act allows for Small Refinery Exemptions to be granted at any time.

The coalition of ag and biofuel groups that brought the original case celebrated the decision as a "major step forward by the Biden administration to restore the integrity" of the RFS. But the

Fueling American Jobs Coalition, which represents refinery workers, said EPA's decision was "no surprise. At the end of the day, the EPA will have to abide by the Supreme Court's decision on the case."

Read our story at Agri-Pulse.com.

Biden administration again rejects revival of WTO appeals court

The Biden administration has again blocked the World Trade Organization from resurrecting its appeals court system, which was effectively shut down by the previous administration. Demanding reforms to the appellate system, the Trump administration began blocking nominees to fill appellate judge positions until there were no judges remaining.

Last month, the Biden administration said it was too preoccupied with the transition to commit to a resumption of hiring new appellate judges, but that wasn't the explanation Tuesday. The U.S. is again expressing apprehensions over "systemic concerns with the appellate body," according to a Geneva official.

Officials representing Canada and Norway nevertheless expressed optimism. The Canadians stressed that the Biden administration likely just needs a little more time before allowing the judge positions to be filled.

Organic industry reps will hit Congress, USDA during virtual fly-in

About 20 organic producers will take part virtually in an annual fly-in Tuesday and Wednesday to push for the Organic Trade Association's priorities on Capitol Hill and at USDA, including advancement of organic standards in several areas where the industry has reached agreement.

"In the past 10 years, the industry has advanced 20 consensus recommendations for improvements to the organic standards, yet USDA has not completed rulemaking on a single one of them," OTA says in background material that mentions the lack of a standard for the origin of livestock, aquaculture, pet food, animal welfare, and others.

OTA will be urging USDA to restore the organic and sustainable agriculture policy adviser role at the department, a position that was eliminated during the Trump administration, and will also push USDA to hire more organic experts for its research programs.

Among the participants: a young African-American organic peanut farmer in Georgia and a sixth-generation California cattleman and the founder of the largest grass-fed beef company in the U.S.

Haaland gets backing from tribes in advance of confirmation hearing

Native American leaders have loudly proclaimed their support Rep. Deb Haaland, a member of the Pueblo of Laguna and the Biden administration's Interior secretary nominee, in advance of a confirmation hearing before the Senate Energy and Natural Resources Committee today.

Pushing back against opposition from Montana Republican Sen. Steve Daines, who has vowed to block the nomination because of what he calls Haaland's "radical" views on fossil fuels, groups of tribes including the Rocky Mountain Tribal Leaders Council, the Global Indigenous Council, and the Great Plains Tribal Chairmen's Association declared their "unequivocal support" for her.

With Haaland as Interior secretary, tribal leaders told Daines and other Republicans in a letter they are confident the Bureau of Land Management will "cease to act as a realtor for multinational extractive industry corporations. Public lands are ancestral Indigenous territories, yet the original stakeholders have been omitted from any decision-making process."

Haaland is expected to tell the ENR committee "there's no question that fossil energy does and will continue to play a major role in America for years to come" but the issue of climate change must be addressed, according to The Hill.

Philip Brasher, Spencer Chase and Steve Davies contributed to

this report.

Questions? Tips? Contact Bill Tomson at Bill@Agri-Pulse.com.

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Message

From: Rakosnik, Delaney [rakosnik.delaney@epa.gov]
Sent: 3/16/2021 10:29:55 PM
To: Jessica Bennett [jbennett@ajw-inc.com]; Joseph Goffman (Goffman.Joseph@epamail.epa.gov) [goffman.joseph@epamail.epa.gov]
CC: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: RE: Biogenic CO2 - Time to meet

Thanks, Jessica. We will review and respond very soon.

Thanks again for your note.

Many thanks!

Delaney Rakosnik
Staff Assistant
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5406A, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-0935
Email: rakosnik.delaney@epa.gov

From: Jessica Bennett <jbennett@ajw-inc.com>
Sent: Tuesday, March 16, 2021 5:21 PM
To: Joseph Goffman (Goffman.Joseph@epamail.epa.gov) <goffman.joseph@epamail.epa.gov>
Cc: Goffman, Joseph <Goffman.Joseph@epa.gov>; Rakosnik, Delaney <rakosnik.delaney@epa.gov>
Subject: Biogenic CO2 - Time to meet

Joe,

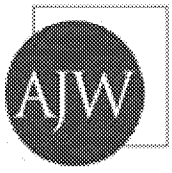
I'm writing on behalf of the Biogenic Carbon Coalition. The coalition consists of a diverse group of stakeholders who represent farmers and agricultural crop processors. We wanted to make you aware of an issue concerning important regulatory clarification that we are hoping can be addressed by the Agency in the near future. To that end we would welcome the opportunity to meet to discuss how this rule change can invigorate the economy while fitting into the essential climate change work EPA will be undertaking. For your reference, I have attached a letter from the Coalition to Administrator Regan, which outlines the issue and will provide additional background.

If you have availability to meet in the near future, we would be happy to accommodate your schedule. Further if you have any questions or provide additional information, please let us know.

Thanks,

Jessica

Jessica Johnson Bennett
Partner, AJW-Inc
Mobile - 202.420.8666
jbennett@ajw-inc.com


AJW

Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/24/2021 8:53:30 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: California environmentalists sue state over fossil fuel permits

California environmentalists sue state over fossil fuel permits

By Colby Bermel

02/24/2021 03:52 PM EST

Environmentalists sued the Newsom administration on Wednesday alleging California is illegally permitting fossil fuel wells, following through on threats to take legal action if the state didn't tighten the practice.

Impact: The complaint, filed against the California Geologic Energy Management Division in Alameda County Superior Court, is a major escalation by the Center for Biological Diversity, which has been criticizing Gov. Gavin Newsom for not taking more aggressive action to rein in oil and gas activity responsible for climate change. The governor is now fighting fossil fuel battles on multiple fronts: In addition to the wells lawsuit, he is feeling political heat on a bill to ban fracking and a regulatory process to consider drilling buffer zones.

Background: Last spring, a state appeals court rejected oil-rich Kern County's blanket blessing of 67,000-plus wells over the next 25 years, finding that the county didn't fully consider the effects of fossil fuel activity. The court set aside the underlying county-issued ordinance and environmental review, which environmentalists highlighted when claiming that CalGEM permit approvals after the decision relied on those disallowed documents.

Then in September, the Center for Biological Diversity sent a letter to the agency notifying it of the group's intent to sue, adding that Newsom's climate rhetoric hasn't squared with CalGEM's continued approvals of oil and gas operations. Two months later, the group sent a final warning letter.

Details: In the Wednesday complaint, the Center for Biological Diversity outlined several ways in which CalGEM is allegedly shirking its responsibilities, which in 2019 were updated to focus more on environmental and public health protection rather than the explicit promotion of fossil fuel extraction.

Environmentalists cite a November audit by Newsom's Department of Finance, which discovered that CalGEM used placeholder information to approve over 200 well permits during a seven-month period in 2019. They also criticize project approvals issued without any publicly available California Environmental Quality Act review documentation since CalGEM's weekly permit summaries have to be manually requested and are often the only way to find out what broad action it has taken.

"The oil and gas projects authorized by CalGEM endanger the health and safety millions of Californians. The cumulative impact of oil and gas activity in the state has a significant impact on California's air, water, climate, wildlife, and health," the complaint states. "The public has been denied the information, analysis, and mitigation measures that could reduce the harms from oil and gas. The public has also been deprived of opportunities to comment on these dangerous projects because of the lack of notice, a commenting period, and hearings on these projects."

CalGEM's position: The California Natural Resources Agency said in a November statement after the Center for Biological Diversity's final warning letter that CalGEM "is required to follow all state laws and regulations

in approving permits. While CalGEM's role is to implement current law, the Newsom Administration has strengthened oversight and bolstered regulatory staff, placed a moratorium on a practice that may be leading to oil leaks, and institutionalized independent scientific and technical review of its processes from Lawrence Livermore National Laboratory."

What's next: The Center for Biological Diversity is asking for the court to declare the agency's current practices unlawful. The group also wants a permanent injunction forcing CalGEM to suspend several practices unless the agency complies with CEQA.

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https://subscriber.politicopro.com/energy/article/2021/02/california-environmentalists-sue-state-over-fossil-fuel-permits-2037229

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Message

From: Bowles, Jack [Bowles.Jack@epa.gov]
Sent: 2/25/2021 4:04:06 PM
Subject: EPA State and Local Weekly Report for February 25, 2021

State & Local Weekly

February 25, 2021

CURRENT and UPCOMING

Upcoming Conferences and Events

- National Governors Association Winter Meeting, Feb. 25. Some Regional Governors Associations may also convene at this time. All are likely virtual.
- National Association of Clean Water Agencies Virtual Event, Feb. 24-25, 2021
- NGA Federal Affairs Directors Meeting, March 1, 2021
- Chesapeake Bay Principals Steering Committee, March 2, 2021
- National League of Cities Virtual Congressional City Conference, March 7-10, 2021
- Environmental Council of States Spring Virtual Meeting, March 16-17, 2021
- National Association of Counties Virtual Legislative Conference, March 8-26, 2021

Meeting with Bloomington-Normal (IL) Economic Development Council

On Wednesday, March 3, the Office of Water will join OIR and Region V in a meeting with the Bloomington-Normal Economic Development Council (BNEDC) to discuss the region's efforts to upgrade its water reclamation facility and groundwater treatment. The Council is part of the One Voice Group – a pro-community campaign that brings together leaders from the City of Bloomington, the Town of Normal, McLean County, labor, local educational institutions and local private businesses. The Annual BNEDC One Voice DC fly-in is virtual this year with briefings for the Congressional delegation and key Federal Agencies from the One Voice delegation and agency personnel. The local city/town/county representatives always appreciate time with EPA during this annual event. They are looking forward to discussing their proposed water projects. *(Contact: M. Arnita Hannon Christmon)*

NLC Congressional City Conference

The National League of Cities will convene its annual Congressional City Conference virtually March 7-10. Over 2,000 NLC members, comprising Mayors, City and Town Council members, and other elected and appointed local officials, are usually in Washington, DC for this conference. Councilmember Kathy Maness (Lexington, SC), President, will preside. Mayors Vince Williams (Union City, GA) and Victoria Woodards (Tacoma, WA) serve as 1st Vice President and 2nd Vice President, respectively.

The Energy, Environment and Natural Resources Committee (EENR) will meet on Sunday, March 7 to discuss advocacy and policy priorities for the year. These priorities will focus mostly on water infrastructure and climate change. Councilmember Ellen Smith (Oak Ridge, TN), EENR Chair, will preside. Councilmembers Cindy Dyballa (Tacoma Park, MD), and Adrian Hernandez (Pearland, TX), are Vice Chairs.
Casey Katims, Deputy Associate Administrator for Intergovernmental Relations (OCIR), Jamie Piziali, and Radhika Fox, Acting Assistant Administrator for Water, have been invited to engage with the

committee. Radhika is requested to bring remarks on EPA's Water Infrastructure priorities. Casey, Radhika, and Jamie are all confirmed.

On Tuesday, March 9, Vicki Arroyo, AA for Policy, Office of Policy, will address a Workshop on Climate Change: From City Leadership to Federal Action. She is asked to discuss the Administration's Climate Change priorities. NLC describes the scope of this workshop with the following narrative: Across the country, cities and local leaders have been forging ahead on climate action and making bold commitments that put their communities at the vanguard in addressing this global crisis. Meanwhile, federal action has been at a standstill. Now, with a new administration and Congress, climate change is back as a top federal priority. In this session, [local leaders] will hear from top agency and congressional representatives on the latest plans and priorities for addressing climate change. In addition, local leaders will share their innovative solutions to this urgent issue and explore how the federal government can be a stronger partner in advancing solutions.

Also on Tuesday, March 9, EPA representatives from the Office of Water and the Office of Brownfields and Land Redevelopment (OBLR) will participate in the Federal Agency Round Robin. Office of Water staff will engage with local leaders on Wastewater and Green Infrastructure Programs. OBLR staff, represented by Daniel Moher, Sahar Rana, and Aimee Storm, will focus on Brownfields Redevelopment and engage in dialogue on successes and any barriers that communities might be facing to full participation in the Brownfields program. With the virtual setting there will be format changes for this session. However, the session will still provide the usual interactive forum that offers federal agencies the opportunity to share federal resources, tools, grants and programs of interest to local governments and local officials as conference attendees switch between breakout rooms in timed rotations. For each room, the federal agency representatives will be able to post resources/documents for all attendees and engage in live discussion. OIR is managing EPA's participation in the conference *(Contact: M. Arnita Hannon Christmon)*

Mayors Water Council March Meetings

The Mayors Water Council, a Task Force under the US Conference of Mayors, plans to host two meetings in March -dates tbd. Mayors David Berger (Lima, OH), and Jill Techel (Napa, CA), serve as Council Co-Chairs. For the first meeting, EPA's Office of Water staff will be invited to speak to the mayors on both Municipal Water Infrastructure, and the WIFIA Program. To date, Jorianne Jernberg, WIFIA Program Director, has confirmed her availability to participate. Michael Deane, Chief, Clean Water SRF Program (Office of Water, Office of Wastewater Management), has been invited to engage with the mayors and is reviewing the request. The second meeting will provide a forum for Office of Water staff to discuss Integrated Planning Permits. The scope of this portion is being developed. OIR is working with Chris Kloss, Director, Water Permits Division (OW), and his team as they determine representation. OIR will continue to coordinate with the Office of Water on the requests for presenters and manage EPA's participation in the meetings. *(Contact: M. Arnita Hannon Christmon)*

Municipal Ombudsman Clean Water Act Corner

Meetings:

- February 25 –National Water Program Resiliency Workgroup (OW)
- March 2 – EPA's CWA Integrated Planning Roundtable for State NPDES Permit Writers (OW)
- March 7 – NLC – Energy, Environment and Natural Resources Committee
- March 9 – NACo - Environment, Energy and Land Use Steering Committee
- March 17-18 – ACWA Mid-Year Meeting

Resources:

- EPA's NEW Innovative Water Infrastructure Workforce Development Grant Program applications due **March 26, 2021**

- DOI's BOR's WaterSmart Grant Programs, upcoming deadlines in April 2021 for Water Marketing Strategy Funding Opportunity and Applied Science Grants.
- Wastewater Technology Clearinghouse - helping communities make informed choices about innovative, alternative, and reuse wastewater technologies
- Enhanced Clearinghouse for Environmental Finance – expanded resources from air and land programs added to OW's Water Finance Clearinghouse platform
- Technical Assistance for CWA Integrated Planning available until **August 2021**: For state NPDES permitting authorities reviewing a CWA integrated plan or municipalities in the process of alternatives analysis. See flyer for more details

Webcasts:

- February 24, 1-2:30pm ET: EPA's Do's and Don'ts in Operating an NPDES Laboratory: Common Mistakes and Ways to Improve Results
- February 24, 2-3 pm ET: EPA's ORD Water Research Webinar: Fit-for-Purpose Water Updates and Life Cycle Comparisons of Non-Potable Water Reuse Scenarios
- February 25, 12:30pm-2:30pm ET: USACE's: Transforming Cities: Nature-based solutions, infrastructure, and equity
- March 2, 4, 9, 23: EPA's Creating Resilient Water Utilities initiative, is providing free virtual training sessions for the **Northeast climate region of the country** on its Climate Resilience Evaluation and Awareness Tool (CREAT): Register now!
- March 3, 1-2 PM ET: EPA's Community-Based Water Resilience Case Study
- March 11, 2-3 PM ET: EPA's WaterSense: Benefits of Soil Moisture Sensors
- March 17, 12-1 PM ET: Introducing EPA's Benchmarking & Building Performance Standards Policy Toolkit
- April 1, 12-1:30pm ET: EPA's Creating the Water Workforce of the Future – Cultivating a Positive Workforce Culture From Apprenticeship to Career

(Contact: Jamie Piziali, Municipal Ombudsman)

Other Events, Meetings, & Interactions with State & Local Officials

National Association of Clean Air Agencies (NACAA)
Next week, Acting Assistant Administrator, Joe Goffman, will speak at the NACAA Winter Board & Committee Chairs Virtual Winter Meeting. Founded in 1980, NACAA is the nationwide organization of state and local air pollution control agencies dedicated to addressing air emissions that harm public health and create environmental damage.

Association of Air Pollution Control Agencies (AAPCA)
Next week, Acting Assistant Administrator, Joe Goffman, will speak to AAPCA's Air Directors meeting. AAPCA is a national, non-profit, consensus-driven organization founded in 2012 to assist state and local air quality agencies and personnel with implementation and technical issues associated with the federal Clean Air Act. Senior officials from 22 state environmental agencies sit on the AAPCA Board of Directors

Meeting with Water Associations
On February 17 and 18 Office of Water Acting Assistant Administrator is meeting with a variety of intergovernmental and water industry associations.

LOCAL GOVERNMENT ADVISORY COMMITTEE and SMALL COMMUNITIES ADVISORY SUBCOMMITTEE

The 2021 solicitation process for new members and reappointments to LGAC and SCAS will begin soon, with an announcement expected to publish in the Federal Register in the next week or two. EPA leadership is encouraged to send suggestions or recommendations for local/tribal/territorial leaders at this time, so that we can ensure they are notified of the application process once it begins. Please send name, title and email address for any recommendations to Paige Lieberman (Lieberman.Paige@epa.gov).

In 2021 members of the LGAC and SCAS will be asked to provide advice and recommendations on a broad range of issues, which may include: advancing environmental justice; ensuring access to clean air and water; reducing greenhouse gas emissions; bolstering resilience to the impacts of climate change; and limiting exposure to dangerous chemicals and pesticides.

To be considered for 2021 appointments, nominations should be submitted by April 16, 2021. Candidates must be current elected or appointed officials representing local, state, tribal or territorial governments. EPA expressly values diversity, equity, and inclusion, and encourages the nominations of individuals from diverse backgrounds, so that the LGAC and SCAS look like America and reflect the country's rich diversity.

More information on the LGAC is available here: https://www.epa.gov/ocir/local-government-advisory-committee-lgac.

RECAP

USCM Winter Leadership Meeting

The US Conference of Mayors hosted its Annual Winter Leadership Meeting virtually on February 18 and 19. The current leadership, Mayor Greg Fischer (Louisville, KY), President, Mayor Nan Whaley (Dayton, OH), Vice President, and Mayor Francis X. Suarez (Miami, FL), Second Vice President, presided as Policy Committees leadership and Board members conduct business. Administrator-designate Regan was invited to speak to the mayors on his priorities. He was unable to join the mayors as he awaits confirmation, but looks forward to future such opportunities for meaningful engagement with the mayors. *(Contact: M. Arnita Hannon Christmon)*

Jack Bowles
Director of State & Local Relations
U.S. Environmental Protection Agency
202-564-3657 (office) | 202-306-5196 (mobile)

Message

From: Millett, John [Millett.John@epa.gov]
Sent: 3/3/2021 10:06:38 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]
CC: DeLuca, Isabel [DeLuca.Isabel@epa.gov]; Stevens, Katherine [stevens.katherine@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]
Subject: REVIEW— Comms Materials for CSAPR Update
Attachments: OAR Communications Plan_Final Revised CSAPR Update DRAFT.docx; Press Release for Final RCU_DRAFT_ks2.docx

Hi all — attached for review are the CSAPR update materials, with thanks to Kati and CAMD for moving these along nicely in advance of the 15th.

Thanks for taking a look!

John

Message

From: Hyde, David [david.hyde@aia-aerospace.org]
Sent: 3/17/2021 6:44:49 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Young, Nancy [NYoung@airlines.org]
CC: Pohle, Timothy [TPohle@airlines.org]; Peter Pagano [peter.a.pagano@boeing.com]; Dunham, Sarah [Dunham.Sarah@epa.gov]; Rakosnik, Delaney [rakosnik.delaney@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]
Subject: Thank you letter from AIA and A4A
Attachments: Thank You - EPA Goffman - March 2021 - AIAA4A.pdf

Dear Mr. Goffman:

Please find attached a letter from the Aerospace Industries Association and Airlines for America following our meeting with you on aviation emissions standards last week. We very much appreciated the opportunity to discuss these issues with you and look forward to continuing the dialogue with you and the EPA going forward.

Kind regards,

David (and Nancy)

David Hyde | *Director, Environmental Policy*
AIA | 1000 Wilson Boulevard, Suite 1700, Arlington, VA 22209
T: 703.358.1085 | C: 202.909.6792 | david.hyde@aia-aerospace.org
aia-aerospace.org

AIA
AEROSPACE INDUSTRIES ASSOCIATION

Airlines for America®
We Connect the World

March 17, 2021

Mr. Joseph Goffman
Principal Deputy Assistant Administrator, Office of Air and Radiation
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dear Mr. Goffman,

On behalf of the Aerospace Industries Association (AIA) and Airlines for America (A4A), we thank you for taking the time to meet with us on March 11. We appreciated the opportunity to speak to you about our sector's efforts to reduce the environmental impacts associated with aviation and the importance of international coordination – including the harmonization of aircraft and engine standards across countries – for continuing the progress we have made to date on these issues.

These standards are developed and adopted at the international level through the United Nation's International Civil Aviation Organization (ICAO) Committee on Aviation Environmental Protection (CAEP), where the U.S. exercises strong leadership and provides considerable resources. The rigorous process ICAO follows when developing these standards ensures that the standards, in addition to continuing to drive environmental progress in the aviation sector, are based upon proven technologies that will maintain the high level of safety throughout the worldwide aviation system – consistent with the requirements for aircraft standards under the Clean Air Act. Timely finalization of domestic rulemakings to incorporate these international standards into U.S. law is essential for U.S. aircraft and engine manufacturers to certify their products and compete with international manufacturers and for airlines to acquire, at market-driven prices, aircraft and aircraft engines that can be operated throughout the world.

We were pleased to hear that work is underway to implement domestic non-volatile Particulate Matter (nvPM) regulations to incorporate the nvPM standards agreed by ICAO/CAEP in 2019 into U.S. law. To better understand how the Environmental Protection Agency (EPA) plans to consider some of the unique complexities associated with the implementation of these standards, AIA would welcome the opportunity to meet with staff from the EPA's Office of Transportation and Air Quality.

We also greatly appreciated the opportunity to focus on the EPA's review of the recently finalized rule on *Control of Air Pollution from Airplanes and Airplane Engines: GHG Emission Standards and Test Procedures*. We reaffirm our strong support for the existing rule, which adopts the ICAO CO_2 standard negotiated by the Obama Administration and delivers on the bipartisan legislation signed by President Obama in 2012 to pursue a worldwide approach to addressing aircraft greenhouse gas emissions.

The ICAO CO_2 standard is an important component of the aviation industry's efforts to reduce our climate change impacts. The improvements this standard will drive in future

aircraft fuel efficiency will complement other measures, such as the use of sustainable aviation fuels, modernization of the air traffic management system, airport operational improvements, and market-based measures such as ICAO's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), to reduce emissions across the entire fleet – including existing aircraft.

We look forward to continuing to work with EPA, the Administration, and the international community to realize the full potential of these measures.

Thank you again for the opportunity to speak with you on these issues.

Sincerely,

David Hyde
Director, Environmental Policy
Aerospace Industries Association

Nancy N. Young
Vice President, Environmental Affairs
Airlines for America

Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/9/2021 3:49:01 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: EPA nominee Regan clears committee

EPA nominee Regan clears committee

By Alex Guillén

02/09/2021 10:48 AM EST

The Senate Environment and Public Works Committee on Tuesday advanced Michael Regan's nomination to be EPA administrator by a 14-6 margin, with several Republicans praising Regan but voting against him to protest the Biden administration's environmental agenda.

Details: Regan was expected to secure some bipartisan support in committee after multiple Republicans complimented him during his confirmation hearing for his achievements while running the North Carolina Department of Environmental Quality and for vowing to listen to all sides before making regulatory decisions at EPA.

"I believe Michael Regan can help unite us in common purpose. That's what he did in North Carolina," said Chair Tom Carper (D-Del.).

But the panel's ranking member, Sen. Shelley Moore Capito (R-W.Va.) said that while Regan is a "good man" and "great public servant," she felt that EPA's agenda ultimately would be controlled by National Climate Adviser Gina McCarthy and EPA deputy nominee Janet McCabe.

"It is unclear whether Secretary Regan, if confirmed, would have the authority to stop the regulatory march towards the Green New Deal," Capito said.

She acknowledged Regan promised to visit West Virginia and other states that said they felt neglected by the Obama administration, but faulted him for not promising that EPA will not adopt a climate rule similar to the Clean Power Plan and for not promising to maintain the Trump-era Navigable Waters Protection rule (Reg. 2040-AF75).

"Without clear commitments to oppose some policies that would economically devastate my state, I cannot support him," Capito said.

The vote: The committee's full slate of Democrats voted in favor of Regan, as did Republican Sens. Lindsey Graham of South Carolina, Dan Sullivan of Alaska, Roger Wicker of Mississippi and Kevin Cramer of North Dakota.

Capito and Republican Sens. Jim Inhofe of Oklahoma, John Boozman of Arkansas, Joni Ernst of Iowa, Cynthia Lummis of Wyoming and Richard Shelby of Alabama voted against Regan.

What's next: It is not yet clear when the full Senate will vote on Regan's confirmation.

To view online:
https://subscriber.politicopro.com/energy/article/2021/02/epa-nominee-regan-clears-committee-2034174

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Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/10/2021 5:56:16 PM
To: Grundler, Christopher [grundler.christopher@epa.gov]; Dunham, Sarah [Dunham.Sarah@epa.gov]; Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Edwards, Jonathan [Edwards.Jonathan@epa.gov]
CC: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]; Shaw, Betsy [Shaw.Betsy@epa.gov]; Koerber, Mike [Koerber.Mike@epa.gov]; Kocchi, Suzanne [Kocchi.Suzanne@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Cherepy, Andrea [Cherepy.Andrea@epa.gov]
Subject: URGENT! Action: Cabinet Report Input
Attachments: REVISED Template_Agency Weekly Report.docx

All, we've been asked to provide input in to the new Cabinet Affairs Report. I have attached the format for your awareness. There are 5 sections though I imagine we will mostly be dealing with the section below. Our input is due by noon Wednesday, and should reflect actions happening today through next Wednesday. For TODAY, I am thinking perhaps we could include something Vehicles (re the working group) and SCC?

Thank you in advance for your input for today's tight turnaround. I am working to get things streamlined.

++++++++++++++++++++++++++

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

Message

From: Keri N Powell [kpowell@powellenvironmentallaw.com]
Sent: 3/18/2021 1:34:07 PM
To: Regan, Michael [Regan.Michael@epa.gov]; Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Blevins, John [Blevins.John@epa.gov]; Goffman, Joseph [Goffman.Joseph@epa.gov]; carbonnell.tomas@epa.gov; Freeman, Caroline [Freeman.Caroline@epa.gov]
CC: Richard Dunn [richard.dunn@dnr.ga.gov]; Hays, Karen [Karen.Hays@dnr.ga.gov]; Eric Cornwell [eric.cornwell@dnr.ga.gov]; Rubini, Suzanne [Rubini.Suzanne@epa.gov]; Nowell, Valerie [Nowell.Valerie@epa.gov]; Fortin, Kelly [Fortin.Kelly@epa.gov]
Subject: Petition Seeking EPA Orders Requiring Georgia to Comply with Public Participation Requirements for Air Permitting
Attachments: Final Petition Seeking EPA Orders Requiring Public Comment on Draft Minor Source Air Permits RBG 3_18_21.pdf; Attachment D_Final RBG SIP Construction Permit issued 1_28_21.pdf; Attachment C_ NARRATIVE for RBG SIP construction permit.pdf

Dear Administrator Regan:

Attached please find a petition from Concerned Citizens of Cook County, Dr. Treva Gear, Dr. Victoria Meredith, Environmental Integrity Project, Dogwood Alliance, Georgia Interfaith Power and Light, Forest Keeper, Mothers & Others for Clean Air, and Sierra Club Georgia Chapter seeking EPA to take prompt action to address Georgia's refusal to provide an opportunity for public comment on draft Clean Air Act permits authorizing construction and operation of purportedly "minor" sources, including permits establishing limits designed to enable sources to avoid otherwise applicable Clean Air Act control requirements.

This petition is especially urgent because on January 28, 2021, the Georgia Environmental Protection Division issued a final permit for a proposed wood pellet manufacturing plant in Adel, Georgia after refusing a request by Adel residents and allied environmental organizations for an opportunity to comment on the facility's draft permit. Petitioners request that EPA take prompt action to require Georgia EPD to revoke the permit before the company commences construction. In addition, Petitioners request that EPA issue orders instructing Georgia EPD to cease violating its state implementation plan by issuing air permits establishing "synthetic minor" emission limits without providing an opportunity for public comment on draft permits, and also to require Georgia to correct the defective minor New Source Review public participation requirements in its state implementation plan.

The attachments to this petition are too big to attach to this email, so we will be providing attachments by mail on a CD. For your convenience, however, we are attaching the final Adel, GA permit and Georgia EPD's narrative for that permit.

Please feel free to contact me with any questions, or if you would like for me to arrange to provide the petition attachments in an additional way.

Sincerely,
Keri Powell
Of Counsel, Environmental Integrity Project
(917) 573-8853

Concerned Citizens of Cook County
Dr. Treva Gear
Dr. Victoria Meredith
Environmental Integrity Project
Dogwood Alliance
Georgia Interfaith Power and Light
Forest Keeper
Mothers & Others for Clean Air
Sierra Club Georgia Chapter

March 18, 2021

Via Certified Mail and Email (Regan.Michael@epa.gov)
Administrator Michael Regan
U.S. Environmental Protection Agency
Mail Code 1101A
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Petition to (1) Require Compliance with Georgia's Clean Air Act State Implementation Plan Requirement That the Public Have an Opportunity to Comment for on Draft Synthetic Minor Permits and (2) Find Inadequate and Correct Georgia's Deficient Minor New Source Review Rules

In the State of Georgia, the public has no opportunity to comment on a draft air permit authorizing the construction and operation of a new "minor" air pollution source, even under circumstances where the proposed facility has the capacity to emit air pollution above the Clean Air Act's major source thresholds but is classified as minor based on its commitment to comply with supposedly enforceable emission limits set forth in its permit ("synthetic minor" limits). Recently, a coalition of local residents and allied environmental organizations requested that the Environmental Protection Division of the Georgia Department of Natural Resources ("Georgia EPD") provide them with an opportunity to comment on the draft synthetic minor permit authorizing Renewable Biomass Group ("RBG") to construct and operate a new industrial-scale wood pellet manufacturing plant in Adel, Georgia.[1] On January 28, 2021, Georgia EPD denied the coalition's request, declaring that under Georgia's air quality rules, a public comment opportunity is available only with respect to "major" source permits, i.e., a Clean Air Act Title V operating permit or a major New Source Review ("NSR") permit.[2] Thus, Georgia EPD issued RBG's final permit without providing an opportunity for public comment on the adequacy of the synthetic minor emission limitations set forth therein.[3] Though the facility will be major for Title V purposes—emitting nearly 800 tons of regulated air pollutants each year, including nearly 100 tons of fine particulate matter ($PM_{2.5}$), 250 tons of nitrogen oxides ("NO_x"), and 216 tons of

[1] Environmental Integrity Project, *et al.*, Public Comments on Air Permit Application No. 27595 for Renewable Biomass Group, dated Aug. 21, 2020 (Att. B).
[2] Georgia EPD, Permit Narrative for Renewable Biomass Group—Adel Plant, dated Jan. 19, 2021, at 14 (Att. C).
[3] Georgia EPD, Air Quality Permit No. 2499-075-0027-E-01-0 issued to Renewable Biomass Group – Adel Facility on Jan. 28, 2021 (Att. D).

volatile organic compounds ("VOCs")[4]—the opportunity for public comment on the facility's Title V permit will not arise until long after the facility is constructed and operating.

As demonstrated below, Georgia EPD's failure to provide an opportunity for public comment on RBG's draft permit (and more broadly, its failure to provide for public comment on any draft permits for synthetic minor sources) violates Georgia's federally approved Clean Air Act state implementation plan ("SIP"), which requires an opportunity for public comment on draft synthetic minor permits. Furthermore, Georgia's failure to provide for public comment on minor NSR construction permits, generally (including those without synthetic minor limits), contravenes federal regulations establishing the minimum criteria for state minor NSR permit programs.

Pursuant to the Clean Air Act, 42 U.S.C. § 7401, *et seq.* ("CAA" or "the Act"), the Administrative Procedure Act, 5 U.S.C. § 551, *et seq.*, and the Environmental Protection Agency's Clean Air Act implementing regulations, Concerned Citizens of Cook County, Dr. Treva Gear, Dr. Victoria Meredith, Environmental Integrity Project, Dogwood Alliance, Georgia Interfaith Power and Light, Forest Keeper, Mothers & Others for Clean Air, and Sierra Club Georgia Chapter (the "Petitioners") hereby petition the Administrator of the Environmental Protection Agency ("EPA") to take the following actions to address Georgia's failure to provide an opportunity for public comment on draft synthetic minor air permits, both in general and in particular with respect to the RBG permit.

1) **Order Georgia EPD to Comply with the SIP and Revoke the RBG Permit.** Pursuant to 42 U.S.C. § 7413(a)(1)(A), EPA should issue an order requiring Georgia EPD to revoke RBG's air construction permit (No. 2499-075-0027-E-01-0) which was finalized on January 28, 2021 without any opportunity for the public to comment on a draft permit and the effectiveness of the limits on the facility's "potential to emit" set forth therein, in violation of Georgia's federally approved SIP.

2) **Prohibit Renewable Biomass Georgia from Constructing its Adel Facility Without Complying with the Act's New Source Review ("NSR") Requirements.** Pursuant to 42 U.S.C. § 7413(a)(5), EPA should issue an order prohibiting RBG from constructing its Adel wood pellet manufacturing plant without either (1) complying with the Prevention of Significant Deterioration NSR requirements set forth in Georgia's SIP at Rule 391-3-1.02(7), or (2) obtaining federally enforceable synthetic minor limits as required by Georgia's SIP, which can be issued only after an opportunity for public comment on the draft synthetic minor permit.

3) **Order Georgia EPD to Cease Issuing Synthetic Minor Permits Without Providing for Public Comment.** Pursuant to 42 U.S.C. § 7413(a)(2)(A), EPA should issue an order directing Georgia EPD to cease issuing synthetic minor permits that establish "potential to emit" limits designed to enable new sources to avoid applicability of federal air pollution control requirements for major sources without

[4] Renewable Biomass Group, Adel, GA, Air Construction Permit Application, Greenfield Wood Pellet Manufacturing Facility (July 2020) (Att. E), at 3-5.

providing for an opportunity for public comment on draft versions of such permits in accordance with Georgia's SIP.

4) **Require Georgia to Correct its Deficient Minor NSR Permitting Requirements.** Pursuant to 42 U.S.C. § 7410(k)(5), EPA should require Georgia to revise its SIP to bring it into compliance with federal minor New Source Review ("minor NSR") regulations at 40 C.F.R. §§ 51.160-51.166, which require, among other things, that a state's minor NSR program provide a for a 30-day public comment period on drafts of all minor NSR construction permits. 40 CFR §§ 51.161(a) and (b)(2).

The legal and factual basis for EPA to take the above actions to remedy Georgia's deficient public participation procedures is set forth below.

I. PETITIONERS

Concerned Citizens of Cook County ("4C") is a non-profit organization that seeks to be a positive force for change in Cook County, promoting equity and advocating for social and environmental justice. In fulfilling this purpose, 4C provides support and information designed to lift people up and give access to people who feel excluded from their communities. 4C members are particularly concerned about the negative health and environmental impacts of an array of industrial facilities on their predominantly African-American communities in Adel, GA and Cecil, GA. They feel that their already overburdened communities cannot bear the additional air and noise pollution and safety risks that would result from construction of RBG's proposed wood pellet manufacturing facility.

Environmental Integrity Project ("EIP") is a non-profit, non-partisan watchdog organization that advocates for effective enforcement of environmental laws. EIP has three goals: (1) to illustrate through objective facts and figures how the failure to enforce and implement environmental laws increases pollution and harms public health; (2) to hold federal and state agencies, as well as individual corporations accountable for failing to enforce or comply with environmental laws; and (3) to help communities obtain protections guaranteed by environmental laws. Since 2017, EIP has been heavily involved in air permit proceedings for biomass facilities in Georgia and across the U.S. South. In 2018, EIP published a report detailing how industrial wood pellet manufacturing plants were unlawfully evading applicability of major NSR requirements, primarily based on synthetic minor limits that failed to come anywhere close to restricting actual facility emissions below the major source threshold.

Dogwood Alliance is a nonprofit environmental organization based in the Southern U.S. For more than 20 years, Dogwood Alliance has worked with diverse communities, partner organizations and decision-makers to protect Southern forests across 14 states. Dogwood Alliance's Our Forests Aren't Fuel campaign is part of an international coalition opposing the industrial-scale burning of trees to produce energy.

Dr. Treva Gear is an Army veteran, educator, and community organizer who is a native of Adel, Georgia. She grew up in Adel and received her K-12 schooling there. Dr. Gear has many family members and friends who reside in the Adel-Cook County area. She has been an educator for 16 years and she currently is an instructional coach at Lowndes High School in Valdosta, Georgia. Dr. Gear is concerned about the immediate and long-term negative impact that the

wood pellet plant will have on air quality and the health and wellness of the residents, especially in combination with other active environmental issues that exist in the area. Dr. Gear is a co-founder of Concerned Citizens of Cook County. A statement from Dr. Gear concerning the facility is attached as Attachment A.

Dr Victoria Meredith is a practicing physician, local Cook county farmer, Air Force veteran, and health as well as environmental advocate. Growing up in a traveling job situation, she lived around the country and later the world experiencing firsthand a variety of sociopolitical and economic situations, and witnessing the environmental, community and health impacts resulting. Settling in Cook county Georgia in 2005 was a conscious decision based on climate, soil, population, and land use research of the southeast U.S. She is currently the acting director of the EdenArk project—a long term scientific and educational study focused on the correlation between local ecosystems and human health and wellbeing on several levels. Dr Meredith has serious medical and scientifically based concerns about the short term (1-100 yrs) human health implications, ecosystem destruction and local community disintegration as well as the long term (generational >100yrs) health consequences and environmental damage that will result from a wood pellet plant as well as other unchecked heavy industry development. Public outcry against this development has been largely ignored by city officials, who instead appear to be focused on annexing county land to circumvent community protections and pollution restrictions/ordinances that exist for the area.

Forest Keeper is focused on protecting national forests, public lands, and other forests in the Eastern U.S. Forest Keeper works as watchdogs and advocates for national forests and the rare species, watersheds, and biological diversity they protect.

Georgia Interfaith Power and Light is a non-profit organization headquartered in Decatur, Georgia. GIPL represents the interests of communities of faith in promoting energy conservation, energy efficiency, renewable energy, and related sustainable practices. GIPL inspires and equips faith communities to engage in faithful environmental action and environmental justice initiatives. GIPL is growing with more than 300 member congregations representing a variety of faiths across the state of Georgia.

Mothers & Others for Clean Air is a nonprofit organization dedicated to protecting children's health by reducing the impacts of air pollution and climate change throughout the Southeast. It creates partnerships between scientists, healthcare providers, parents, teachers, youth, and organizations to facilitate collective learning and action across a 10-state region: Virginia, North Carolina, Tennessee, Arkansas, Louisiana, Mississippi, Alabama, Georgia, South Carolina, and Florida.

Sierra Club is a national grassroots environmental organization dedicated to exploring, enjoying, and protecting the wild places of the earth; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. Sierra Club's Georgia Chapter, with 75,000 members and supporters, is the largest grassroots environmental organization in the state of Georgia. The chapter has active committees working on forest and coastal protection, transportation, and clean energy.

II. LEGAL AND FACTUAL BACKGROUND

A. Synthetic Minor Permitting Under the Clean Air Act

The Clean Air Act requires new "major" stationary sources of air pollution to comply with stringent air pollution control requirements. Whether a proposed new facility qualifies as a "major" source depends on whether it actually emits, or has the potential to emit, certain air pollutants in an amount that equals or exceeds a specified emission threshold (the "major source threshold"). A facility's potential to emit is measured at the facility's full capacity, unless the facility accepts an enforceable limit that restricts its emissions to below the major source threshold. A source that avoids major source requirements by accepting an enforceable limit on its emissions is referred to as a "synthetic minor" source.

There are several Clean Air Act programs that apply to facilities that qualify as "major" sources, and each program has its own major source thresholds. For a new wood pellet manufacturing plant like the one proposed by RBG, Georgia EPD must evaluate the applicability of three different sets of requirements: hazardous air pollutant ("HAP") requirements under Clean Air Act section 112, the Title V operating permit program, and the major New Source Review ("major NSR") preconstruction permitting program.

HAPs, also known as air toxics, are those substances which are known or suspected to cause cancer, or other serious health problems such as birth defects. Specifically, HAPs are pollutants that the U.S. Congress has listed as toxic or carcinogenic even in small quantities.[5] HAPs emitted from wood pellet processing facilities include acetaldehyde, acrolein, formaldehyde, hydrochloric acid, methanol, phenol, and propionaldehyde. Under Clean Air Act section 112, major sources of HAP must reduce their HAP emissions to the maximum degree achievable.[6] A source is considered a major source of HAP if it emits or has the potential to emit 10 tons per year or more of any individual HAP, or 25 tons per year or more of all HAP.[7] If a source's "potential to emit" HAPs falls below these threshold, the source is considered an "area" source and may be subject to an area source standard if EPA has established one for that source category.[8] EPA has not established an area source standard for the wood pellet manufacturing industry, so sources in that category that became "area" sources based on their agreement to restrict their emissions to below the major source threshold for HAPs are not subject to any section 112 HAP limits. Thus, because the RBG plant's air permit contains HAP limits intended to restrict the plant's HAP emissions below the major source threshold, the final RBG air permit does not contain any section 112 HAP control requirements applicable to its wood pellet manufacturing operations.[9]

Under the Title V program, all major sources (and some smaller sources) must obtain an operating permit that identifies all of the Clean Air Act requirements that apply to the source along with monitoring, recordkeeping, reporting, and compliance certification requirements

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[5] HAPs regulated under Clean Air Act § 112 are listed at Clean Air Act § 112(b), 42 U.S.C. § 7412(b).
[6] Clean Air Act § 112(d)(2), 42 U.S.C. § 7412(d)(2).
[7] Clean Air Act § 112(a)(1), 42 U.S.C. § 7412(a)(1).
[8] Clean Air Act § 112(a)(2), 42 U.S.C. § 7412(a)(2) (defining "area source"); [8] Clean Air Act § 112(d)(3), 42 U.S.C. § 7412(d)(3) (alternative control standard for listed categories of area sources).
[9] The RBG permit does contain HAP requirements for its reciprocating internal combustion engines. *See* Final RBG Permit at 3, Permit Condition 2.15.

sufficient to assure the source's compliance. The Title V major source threshold varies depending upon the pollutant emitted and whether the area in which the source is located is attaining the federal ambient air quality standards. A source that is considered "minor" or "area" for other Clean Air Act programs may still be considered "major" for Title V purposes. Most industrial-scale wood pellet manufacturing facilities are large enough to be required to obtain a Title V permit. However, in most cases, a source is not required to apply for a Title V permit until after it is already constructed and operating. Thus, while Title V provides extensive public participation opportunities, these opportunities typically do not enable members of the public to engage prior to a facility's construction to ensure that the limits taken to allow the facility to avoid otherwise applicable major source control requirements are accurate and enforceable. This is the case for the proposed RBG plant; though it is classified as "major" for Title V purposes, RBG is not required to apply for a Title V permit until after the plant is constructed and operating.

Finally, under the major New Source Review ("major NSR") preconstruction permitting program, a proposed new major source of NSR-regulated air pollutants, including criteria pollutants like PM, NO_x, VOCs, sulfur dioxide and carbon monoxide, cannot be constructed without a permit requiring the facility to utilize up-to-date air pollution controls and ensuring that the facility will not adversely impact ambient air quality. Major NSR actually consists of two different sets of pre-construction permitting requirements: "Nonattainment New Source Review" requirements set forth in Part D of Clean Air Act Title I apply to a source's emission of air pollutants for which an area is not meeting federal ambient standards, whereas "Prevention of Significant Deterioration" ("PSD") requirements set forth in Part C of Clean Air Act Title I apply to a source's emission of air pollutants for which the area is meeting federal ambient standards. For the wood pellet manufacturing industry, the NSR major source threshold is 250 tons per year of any NSR-regulated air pollutant. A proposed new source with potential emissions that are below this threshold (either based on its total capacity or based on a synthetic minor limit) is instead subject to "minor NSR." The term "minor NSR" does not appear in the Clean Air Act, but minor NSR requirements are based on the requirement in Clean Air Act § 110(a)(2)(C) that state implementation plans "include a program to provide for … regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved."[10] EPA's regulatory requirements for state minor NSR programs at 40 C.F.R. §§ 51.160-51.164 are likewise sparse, providing states with "broad discretion to determine the scope of their minor NSR programs as needed to attain and maintain the [national ambient air quality standards]."[11]

As EIP documented in a 2018 report, many industrial-scale wood pellet manufacturing facilities like the proposed RBG plant have been constructed as "minor" sources based on their agreement to comply with synthetic minor emission limits, but subsequently were found to be emitting nearly four times the agreed-upon amount.[12] In most cases, these violations were revealed only after persistent advocacy efforts by EIP and its partners. For example, EIP and others informed the State of Mississippi in 2017 that the Drax Amite BioEnergy Plant was emitting air pollutants at a rate that far exceeded its synthetic minor permit limits and the major

[10] 42 U.S.C. § 7410(a)(2)(C).
[11] 78 Fed. Reg. 35,184, 35,187 (June 12, 2013).
[12] Dirty Deception: How the Wood Biomass Industry Skirts the Clean Air Act, Environmental Integrity Project (Apr. 26, 2018), https://environmentalintegrity.org/wp-content/uploads/2017/02/Biomass-Report.pdf

NSR threshold. EIP subsequently filed two additional sets of comments explaining why Drax's emission calculations were flawed. Finally, in November 2020, Mississippi issued a final order requiring Drax Amite to install a new regenerative catalytic oxidizer to reduce its emissions and fining Drax $2.5 million for its Clean Air Act violations.[13] Similar synthetic minor permit violations have been discovered and addressed at wood pellet facilities across the U.S. South.[14]

B. Georgia EPD's Refusal to Provide Public Comment on the Draft Synthetic Minor Permit Authorizing RBG to Construct and Operate its Proposed Wood Pellet Manufacturing Plant.

RBG's proposed Adel, Georgia wood pellet manufacturing plant would process more than a million tons of trees and wood into nearly 500,000 tons of wood pellets per year, making it one of the largest pellet plants in Georgia.[15] It would be capable of operating 24 hours per day, 365 days per year, producing wood pellets for export overseas to be burned for electricity. As shown in RBG's permit application, the plant would emit nearly 800 tons of regulated air pollutants per year, including nearly 100 tons of fine particulates (linked to premature death, heart disease, aggravated asthma, and other health issues, nearly 250 tons of NOx (which causes smog and acid rain), 216 tons of VOCs (which causes smog), and thousands of pounds of HAPs, which are especially toxic or carcinogenic even in low quantities.[16]

The air pollution, truck traffic, and noise generated by industrial-scale wood pellet plants have plagued communities across the U.S. South ever since the biomass industry began expanding about a decade ago to meet European demand for supposedly "clean" biomass energy.[17] There is no reason to believe that the proposed RBG plant would be any different from existing facilities. In addition to the air pollution described above, the RBG plant will inevitably generate large amounts of truck traffic, further degrading air quality and worsening the quality of life of nearby residents. While RBG has not provided detailed information regarding anticipated truck traffic, based on similar existing pellet plants, the facility will likely receive around 250 trucks per day, or nearly 100,000 trucks per year.[18] That equates to a truck trip once every six minutes, 24 hours per day, seven days per week. Likewise, neighboring residents of similar

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[13] Mississippi Commission on Environmental Quality v. Amite BioEnergy, Agreed Order dated Nov. 4, 2020 (Att. F).

[14] Another example is the Drax Morehouse BioEnergy plant in Bastrop, Louisiana. EIP and other advocacy organizations successfully demonstrated in 2018 that though the plant had been operating as a synthetic minor source since its construction in 2012, its VOC emissions far exceeded the PSD major source threshold. See LDEQ Response to Comments on draft Morehouse BioEnergy Title V permit (Att. G). After subsequent testing revealed that the facility's VOC emissions at permitted operating levels was 1,150 tons per year, and Drax agreed to install new controls designed to reduce VOCs and HAPs by 95% or more. Morehouse BioEnergy, BACT Analysis for VOC Emissions PSD Application, May 1, 2019) (Att. H).

[15] Renewable Biomass Group, Adel, GA, Air Construction Permit Application, Greenfield Wood Pellet Manufacturing Facility (July 2020) (Att. E), at 2-1.

[16] *Id.* at 3-5.

[17] *See, e.g.,* Rachel Carson Council, "Clear Cut: Wood Pellet Production, the Destruction of Forests, and the Case for Environmental Justice," available at https://www.sec.gov/rules/petitions/2019/ptn4-741-exb.pdf and https://rachelcarsoncouncil.org/clear-cut/.

[18] For example, the Enviva Southampton wood pellet plant in Virginia calculated it receives 405 truck trips per day while producing 781,255 tons of pellets per year. See Application for Modification of a Stationary Source Permit for Increased Softwood Utilization and Installation of Emission Controls, Enviva Pellets Southampton, LLC, dated Sept. 28, 2018, Appendix C, Table C-30 (p. 45) (relevant excerpts in Att. I).

plants located elsewhere have used noise monitors to document noise levels above 80 decibels far beyond the facility's fence line, equivalent to standing next to a lawnmower.

Understandably, individuals residing near the site of the proposed plant are concerned about how the plant would impact public health and welfare in their communities. As explained in the attached statement by Dr. Treva Gear, Co-Founder of Concerned Citizens of Cook County, people residing near the site of the proposed RBG plant already face an array of environmental hazards.[19] In fact, the downwind community of Adel is a particularly vulnerable environmental justice community. The census block within Adel closest to the facility, 2.2 miles downwind and with a total population of 798 individuals, is 91% minority and 80% low income; Adel as a whole is 59% minority population and 53% low income according to EPA's EJ Screen.[20] Further, Cook County ranks 107th out of the state's 159 counties in health outcomes.[21] Due to their concern regarding the additional environmental burden that RBG's proposed wood pellet manufacturing plant would place on the local community, Dr. Gear and others sought to persuade the Adel City Council not to annex and rezone (to heavy industrial use) the property on which RBG wished to build its plant.[22] In addition to testifying at the City Council hearing[23], they publicly protested the action beforehand. Despite their efforts, the City Council voted 3-2 in favor of the annexation and rezoning.

Adel residents protesting outside Adel City Council hearing prior to the Council's consideration of whether to annex and rezone property on which RBG proposes to construct a wood pellet manufacturing plant. (Image from WALB News 10).

[19] Statement from Dr. Gear attached as Att. A.
[20] EPA, EJ Screen Demographic Index for Blockgroup No. 130759604003 (Accessed Mar. 17, 2021) (Att. J); EPA, EJ Screen Report for approximate Adel city limits (Accessed Mar. 17, 2021) (Att. K)
[21] Robert Wood Johnson Foundation, County Health Rankings & Roadmaps, available at: https://www.countyhealthrankings.org/app/georgia/2020/rankings/cook/county/outcomes/overall/snapshot.
[22] WALB News 10, "Concerns raised over plant possibly coming to Adel," reported by Jim Wallace, Sept. 21, 2020, https://www.walb.com/2020/09/21/concerns-raised-over-plant-possibly-coming-adel/
[23] A video of Dr. Gear's presentation to the Adel City Council is available at https://www.youtube.com/watch?v=G5TpTvhoTuM

On July 20, 2020, Georgia EPD issued a notice announcing that it would accept public comment on RBG's *application* for a synthetic minor permit authorizing it to construct its proposed Adel wood pellet manufacturing plant.[24] RBG's permit application revealed that RBG was requesting synthetic minor limits to enable the facility to avoid major source control requirements, including the requirement to control NO_x, PM, and VOCs using the best available control technology, and the requirement to utilize maximum achievable control technology to reduce hazardous air pollutants. Even with the proposed limits, however, the facility would still emit 773 tons of criteria pollutants per year and thousands of pounds of hazardous air pollutants. Moreover, RBG's application indicated that even with the proposed operating limits, RBG calculated that its potential to emit NOx would be just 0.52 tons per year shy of the 250 ton per year major NSR applicability threshold.[25]

Especially given how close the RBG plant's potential emissions would be to the NSR major source threshold, it is essential that the synthetic minor limits designed to ensure that the RBG plant's emissions do not exceed that threshold be extremely accurate and enforceable, both legally and as a practical matter. Unfortunately, the opportunity to comment on RBG's permit application did not include an opportunity to scrutinize the actual permit conditions that RBG would need to comply with to ensure that its emissions remain below the threshold. Nor did the comment opportunity include an opportunity to comment on Georgia EPD's evaluation of RBG's application and the facility's anticipated impact on ambient air quality, or even on Georgia EPD's proposed action in response to RBG's application. Rather, the only material available for public comment was RBG's application.

A coalition of Adel residents and environmental advocacy organizations did file comments on the RBG permit application, but their ability to provide effective comments on whether the proposed facility would legitimately qualify as a synthetic minor source was severely limited by the fact that they did not have the opportunity to comment on the proposed synthetic minor limits. [26] Thus, in their comments, they called upon Georgia EPD to provide them with an opportunity to comment on the draft permit prior to final permit issuance. They explained that Georgia EPD's apparent intention not to provide for public comment on the draft permit was "problematic because RBG calculates that its potential to emit ("PTE") nitrogen oxides ("NOx) is 249.48 tpy [tons per year], which is just shy of the 250 tpy prevention of significant deterioration ("PSD") program's applicability threshold."[27] The comments further explained that "[g]iven the extremely narrow margin between estimated emissions and the PSD major-source threshold, it is vital that the facility's permit be written in a way that is enforceable and that requires adequate monitoring, recordkeeping, and reporting sufficient to document the facility's ongoing compliance with these PTE limits."[28] Finally, the commenters informed Georgia EPD that while their comments on the permit application identified compliance assurance requirements that should be included in RBG's permit, "EPA should not consider these comments to be a substitute for an opportunity to comment on a draft permit."[29] The

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[24] EPD Public Advisory for the Week of July 20, 2020 (PA0720-4) (Att. L).
[25] Renewable Biomass Group, Adel, GA, Air Construction Permit Application, Greenfield Wood Pellet Manufacturing Facility, at Appendix C, Table C-1 (July 2020) (Att. E).
[26] Public Comments on Air Permit Application No. 27595 for Renewable Biomass Group dated Aug. 21, 2020 (Att. B).
[27] *Id.* at 1.
[28] *Id.* at 2.
[29] *Id.*

commenters noted that if Georgia EPD gave them an opportunity to comment on the draft permit, they would be able to submit much more detailed and precise comments on Georgia EPD's selected compliance assurance approach.[30]

On January 28, 2021, Georgia EPD denied the coalition's request, declaring that under Georgia's air quality rules, a public comment opportunity is available only with respect to "major" source permits, i.e., a Clean Air Act Title V operating permit or a major New Source Review ("NSR") permit.[31] Thus, Georgia EPD issued RBG's final permit without providing an opportunity for public comment on the adequacy of the synthetic minor emission limitations set forth therein.[32]

If Georgia EPD had granted the request for a public comment period on RBG's draft synthetic minor permit, Petitioners would have raised concerns that they could not have raised in their comments on RBG's permit application. For example, based on our review of the final permit ultimately issued by Georgia EPD, Petitioners would have, among other things, pressed Georgia EPD to investigate whether the planned facility will utilize bypass stacks. Though the final permit does not mention the presence of such stacks at the planned RBG facility, in our experience, we have found that most, if not all, wood pellet plants utilize bypass stacks. In fact, Sierra Club is currently pursuing a citizen suit against a similar wood pellet plant in Woodville Texas that regularly bypasses its controls, emitting large amounts of PM, VOCs, HAPs, NO_x, CO, SO_2, smoke and soot directly into the atmosphere.[33] Use of such bypass stacks could cause RBG's facility to exceed its synthetic minor limits. Another example of an issue that Petitioners would have raised pertains to the final permit conditions designed to ensure RBG's compliance with its NO_x emission limit. Although the final permit requires RBG to monitor NO_x emissions via an equation, this equation is deficient in that it is based on the amount of wood processed in the dryer (a process that does not directly emit NO_x) rather than the heat input or fuel consumption of the furnaces. Because NO_x emissions are a result of combustion in the furnace, monitoring the wood throughput of the dryer may underestimate NO_x emissions. For instance, the facility may combust fuel in the furnace at times when no wood is processed in the dryer, thereby emitting NO_x that is not accounted for in the equation. The NO_x limit is therefore insufficient to restrict the facility's potential emissions to below the 250 ton-per-year major source threshold.

C. Georgia EPD's History of Issuing Synthetic Minor Construction and Operating Permits Without Providing an Opportunity for Public Comment on Draft Permits, Even When Members of the Public Specifically Request Such Opportunity.

Georgia EPD's refusal to provide for public comment on the draft RBG permit is not unique to that permitting action. Rather, Georgia EPD systematically issues all of its synthetic minor permits without allowing for public comment on draft permits, even under circumstances where members of the public request that a draft permit be released for public comment. For example, in 2017, several of the groups that are now involved in this Petition requested that

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[30] *Id.*

[31] Georgia EPD, Permit Narrative for Renewable Biomass Group—Adel Plant, dated Jan. 19, 2021, at 14.

[32] Georgia EPD, Air Quality Permit No. 2499-075-0027-E-01-0 issued to Renewable Biomass Group – Adel Facility on Jan. 28, 2021.

[33] First Amended Complaint in *Sierra Club v. Woodville Pellets*, Civ. Act. No. 9:20-cv-00178, E.D. Tex. (Att. P).

Georgia EPD give them an opportunity to comment on a draft permit for the Bord na Mona wood pellet manufacturing facility, proposed to be located in Washington, Georgia.[34] Like the RBG permit, the Bord na Mona permit included an array of permit conditions designed to restrict the facility's potential to emit such that the facility would qualify as a "synthetic minor" source and avoid PSD and Section 112 requirements. And, as with respect to the RBG permit, Georgia EPD rejected the groups' request for a public comment opportunity, declaring: "Georgia Air Quality Rules do not require public review of the draft permits for non Title V and non PSD sources. The air quality permit proposed to be issued by EPD is a SIP permit and not a Title V permit. Hence, EIP's request to comment on draft permit is not granted."[35]

A review of Georgia EPD's website reveals numerous synthetic minor permits issued without an opportunity for public comment on a draft permit. The public notices for these permits clearly state that public comment is solicited only with respect to the permit *application* and that comments received "will be considered by the Division in making its final decision to issue the permit." Recent examples of such permits include:

> **Dean Baldwin Painting, LLC:** Construction and operation of a new aerospace/aircraft surface coating/painting facility in Macon, GA. Permit contained synthetic minor permit limits for VOC and HAP.[36]
>
> **Enchem America, LLC:** Construction and operation of a facility for mixing and purification of chemicals related to electronic vehicle batteries to be located in Commerce, GA. Synthetic minor limit on VOC emissions to avoid Title V and PSD.[37]
>
> **Metro Green 3**: Construction and operation of a construction and demolition waste recycling facility. Synthetic minor limit for PM.[38]
>
> **Novalis US LLC:** construction of a vinyl tile manufacturing facility in Dalton, GA. Title V synthetic minor limits for VOC and PM.[39]
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> **C.W. Matthews Contracting Company, Inc. – Plant 48 Macon:** construction and operation of a new 400 ton per hour drum mix asphalt plant capable of firing natural gas,

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[34] Environmental Integrity Project, et al., Comments on the Notice of Permit Application for the Bord na Mona Wood Pellet Manufacturing Plant (June 1, 2017) (Att. M).

[35] Georgia EPD, Permit Narrative for Bord na Mona Permit dated June 15, 2017, at 7 (Att. N).

[36] Permit narrative at https://permitsearch.gaepd.org/permit.aspx?id=PDF-ON-27732. Final permit at https://permitsearch.gaepd.org/permit.aspx?id=PDF-OP-27732. Public advisory at https://epd.georgia.gov/document/document/pa1120-1/download. Comments were due on permit application by December 4, 2020.

[37] Permit narrative at https://permitsearch.gaepd.org/permit.aspx?id=PDF-ON-27599. Final permit at https://permitsearch.gaepd.org/permit.aspx?id=PDF-OP-27599. Public notice at https://epd.georgia.gov/document/document/pa0820-2/download. Comments were due on permit application by September 11, 2020.

[38] Permit narrative at https://permitsearch.gaepd.org/permit.aspx?id=PDF-ON-27589. Final permit at https://permitsearch.gaepd.org/permit.aspx?id=PDF-OP-27589. Public Advisory at https://epd.georgia.gov/document/document/pa0720-3/download. Comments due on permit application by August 14, 2020.

[39] Permit narrative at https://permitsearch.gaepd.org/permit.aspx?id=PDF-ON-27525. Final permit at https://permitsearch.gaepd.org/permit.aspx?id=PDF-OP-27525. Public notice at https://epd.georgia.gov/document/document/pa0520-3/download. Public comments were due on permit application by June 19, 2020.

fuel oil, or recycled fuel oil to be located in Juliette, GA. Synthetic minor for CO and SO_2.[40]

Ecolab Savannah – Gulfstream Road Fumigation Facility: Construction and operation of a commodity fumigation facility in Savannah, GA that will use methyl bromide, phosphine. Synthetic minor for HAP.[41]

MAS ASB Cogen, LLC CHP Facility: application to remove pollution controls from an Atlanta cogeneration facility and increase the facility's NOx synthetic minor limit from 24.9 tons per year to 99 tons per year, based on a new synthetic minor limit (and a determination that the facility is no longer considered part of the co-located Coca-Cola production facility).[42]

In light of the above examples and Georgia EPD's prior refusal to provide an opportunity for public comment on the draft Bord na Mona synthetic minor permit, Georgia EPD's refusal to provide for public comment on the RBG permit is obviously not an isolated incident. Rather, Georgia's EPD's failure to provide for public comment on the draft RBG permit reflects the state's widespread failure to provide an opportunity for public comment on draft synthetic minor permits.

III. GEORGIA'S FAILURE TO PROVIDE FOR PUBLIC COMMENT ON DRAFT PERMITS VIOLATES CLEAN AIR ACT REQUIREMENTS GOVERNING MINOR SOURCE PERMITTING.

A. Georgia EPD's Refusal to Provide an Opportunity for Public Comment on Draft Synthetic Minor Permits Violates its Federally Approved SIP and its Hazardous Air Pollutant Program Approved under Clean Air Act Section 112(l).

Georgia's refusal to provide an opportunity for public comment on draft synthetic minor permits, including the recently issued RBG permit, violates public participation requirements set forth in state regulations that EPA has approved as part of Georgia's SIP and also pursuant to its authority under Clean Air Act section 112(l). Specifically, under Georgia's EPA-approved regulations, a limit taken by a source to reduce its potential to emit to below a major source threshold (thereby making the facility a "synthetic minor" source) will only be effective if "the limitation or effect it would have on emissions is federally enforceable." Georgia SIP Rule 391-

[40] Final permit at https://permitsearch.gaepd.org/permit.aspx?id=PDF-OP-27494. Permit narrative at https://permitsearch.gaepd.org/permit.aspx?id=PDF-ON-27494. Public advisory at https://epd.georgia.gov/document/document/pa0420-3/download. Comments were due on permit application by May 15, 2020.

[41] Permit Narrative at https://permitsearch.gaepd.org/permit.aspx?id=PDF-ON-27447. Final permit at https://permitsearch.gaepd.org/permit.aspx?id=PDF-OP-27447. Public advisory at https://epd.georgia.gov/document/document/pa0320-1/download. Comments were due on permit application by April 3, 2020.

[42] Permit Narrative at https://permitsearch.gaepd.org/permit.aspx?id=PDF-ON-27398. Final permit at https://permitsearch.gaepd.org/permit.aspx?id=PDF-OP-27398. Public advisory at https://epd.georgia.gov/document/document/pa0120-5/download. Comments were due on permit application by February 28, 2020.

3-1-.01(ddd) (approved at 60 Fed. Reg. 12,688, Mar. 8, 1995) (defining "potential to emit").[43] Likewise, Georgia's SIP defines "Synthetic Minor Permit" to mean a permit "which imposes federally enforceable limits to restrict potential emissions." *Id.* (cccc). In accordance with Georgia SIP Rule 391-3-1-.03, subsections (2)(i) and (12)(c), prior to the issuance of any Federally enforceable operating permit, EPA and the public will be notified and given a chance for public comment on the draft permit.

The above-referenced provisions are all part of Georgia's Federally Enforceable State Operating Permits ("FESOP") Program, which EPA approved in 1995.[44] In the notice announcing EPA's approval, EPA explained that Georgia's rules were approved both as a revision to Georgia's federally enforceable SIP (governing criteria pollutants) and under Clean Air Act section 112(l) (governing hazardous air pollutants ("HAPs")).[45] EPA further explained that its approval of the FESOP program enabled Georgia to establish Federally enforceable limits on a source's potential to emit, which "can affect a source's applicability to Federal regulations such as title V operating permits, New Source Review (NSR) preconstruction permits, Prevention of Significant Deterioration (PSD) preconstruction permits for criterial pollutants and Federal air toxics requirements mandated under section 112 of the [Clean Air Act]."[46] In granting its approval, EPA observed: "Rule 391-3-1-.03, subsections (2)(i) and (12)(c), states that prior to the issuance of any Federally enforceable operating permit, EPA and the public will be notified and given a *chance for comment on the draft permit*."[47] EPA declared that "any permit which has not gone through an opportunity for public comment and EPA review under the Georgia FESOP program will not be Federally enforceable."[48] This is consistent with the definition of "federally enforceable" in federal regulations at 40 C.F.R. § 63.2, which provides that limitations and conditions that are part of an operating permit are federally enforceable if, among other things, "[t]he permit in question was issued only after adequate and timely notice and opportunity for comment for EPA and the public."

The final air quality permit issued by Georgia EPD for RGB's planned Adel facility establishes synthetic minor limits intended to restrict the facility's potential to emit to below the applicability thresholds for the Clean Air Act's PSD and Section 112 major source requirements and is therefore subject to the regulatory requirements described above. The cover page to the final permit declares that Georgia EPD issued the permit pursuant to "Chapter 391-3-1" of Georgia's air quality rules, and the permit authorizes both the construction and the "operation" of RBG's proposed Adel wood pellet manufacturing facility. Permit Condition 2.1, labeled "Avoidance of 40 CFR 52.21" (the federal Prevention of Significant Deterioration requirements for major sources), declares that the permittee may not allow the facility to emit PM, VOC, CO, or NOx "in an amount exceeding 249 tons during any twelve consecutive months." Likewise, Permit Condition 2.2, labeled "Title V Avoidance for Single and Combined HAP," restricts the permittee from allowing the facility to emit "any single hazardous air pollutant (HAP) in an amount equal to or exceeding 10 tons during any twelve consecutive months, or any combination

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[43] The federally approved version of Georgia Rule 391-3-1-.01 is available on EPA's website at https://www.epa.gov/sites/production/files/2017-12/documents/391-3-1.01-2017.pdf (last visited 1/26/21)
[44] 60 Fed. Reg. 45,048 (August 30, 1995).
[45] *Id.* at 45,048.
[46] *Id.* at 45,049.
[47] *Id.* (emphasis added).
[48] *Id.*

of such listed HAP in an amount equal to or exceeding 25 tons during any twelve consecutive months."[49] The permit contains various other conditions designed to ensure that the facility's emissions remain below these thresholds.

In denying the recent request for an opportunity for public comment on the draft RBG synthetic minor permit, Georgia EPD does not appear to have been applying the EPA-approved synthetic minor permitting requirements described above. Instead, Georgia EPD was applying revised state regulations which have not been approved by EPA as a revision to Georgia's SIP. Specifically, Georgia's current, unapproved regulations now define "potential to emit" in a way that eliminates the requirement that a synthetic minor limit be "federally enforceable" and instead allows such limits to be merely "legally and practically enforceable."[50] Likewise, the state's current regulatory definition of "synthetic minor permit" allows a synthetic minor limit to be either "federally enforceable or enforceable as a practical matter."[51] Thus, while the current EPA-approved Georgia rules still require that the public be provided an opportunity to comment on a draft of a "federally enforceable operating permit,"[52] Georgia EPD apparently believes that it need not offer an opportunity for public comment on a draft of a synthetic minor permit because such permits (and limits) no longer need to be federally enforceable under Georgia's current rules.

To the extent that Georgia EPD believes that it no longer needs to apply the version of the state's regulations that have been approved by EPA as part of Georgia's SIP, EPD is mistaken. Until such time as EPA approves a revision to Georgia's SIP, Georgia's SIP rules remain enforceable and continue to govern the state's administration of Clean Air Act requirements.[53] Furthermore, in accordance with Georgia's EPA-approved synthetic minor permitting requirements described above, Georgia EPD's failure to provide the public with an opportunity to comment on RBG's draft permit prevents RBG from relying on its final permit limits to avoid otherwise applicable PSD and Section 112 major source requirements.

B. Georgia SIP is Deficient Because it Fails to Provide an Opportunity for Public Comment on Draft Minor NSR Permits as Required by Federal Regulations Establishing the Minimum Requirements for State Minor NSR Programs.

While Georgia's SIP requires that the public be given an opportunity to comment on draft permits establishing synthetic minor limits, the SIP does not appear to require public comment on draft permits for sources that do not need federally enforceable emission limits to qualify as minor ("natural minors"). Specifically, Georgia's SIP provisions governing the issuance of a

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[49] This limit is designed to restrict the facility's HAP emissions below the major source threshold under Clean Air Act § 112, thereby exempting the source from the requirement to reduce HAP using maximum achievable control technology. The permit likely refers to the limit as a "Title V Avoidance" limit because a facility that is a major source under Clean Air Act section 112 is also considered a major source under Title V. However, this plant is already considered a major source for Title V due to its emissions of other pollutants.

[50] Ga. Rules and Regulations, Rule 391-3-1-.01(ddd) (defining "potential to emit").

[51] Ga. Rules and Regulations, Rule 391-3-1-.01(cccc) (defining "synthetic minor permit").

[52] Ga. Rules and Regulations, Rule 391-3-1-.03 subsections (2)(i) and (12)(c)

[53] 40 CFR 51.105 ("Revisions of a plan, or any portion thereof, will not be considered part of an applicable plan until such revisions have been approved by the Administrator in accordance with this part."). *See also, e.g., General Motors v. US*, 496 U.S. 530, 540 (1990) ("There can be little or no doubt that the existing SIP remains the "applicable implementation plan" even after the State has submitted a proposed revision.").

"*construction*" permit for a minor source omits any mention of public-notice-and-comment requirements.[54] Georgia's failure to provide for public comment on all draft minor source "construction" permits contravenes the federal regulations at 40 CFR § 51.160-66., which establish the minimum for state "minor NSR" programs. Pursuant to 40 CFR § 51.161(a), these minimum requirements include an opportunity for public comment on "the agency's analysis of the effect of construction or modification on ambient air quality, including the agency's proposed approval or disapproval."[55] The regulation goes on to specify that the "opportunity for public comment shall include, as a minimum … A 30-day period for submittal of comment." 40 C.F.R. § 51.161(b)(2). Where a state implements minor NSR requirements by issuing individual permits authorizing a source's construction or modification, EPA has long interpreted 40 CFR § 51.161's language to mean that the public must be provided an opportunity to comment on a draft minor NSR permit before it is issued as final.[56]

1. The Opportunity for Public Comment on Permit Applications Does Not Satisfy Federal Minor NSR Public Participation Requirements.

Although Georgia EPD offers the public an opportunity to comment on minor NSR permit *applications*, this is insufficient to satisfy 40 CFR § 51.161's public participation requirements. An opportunity to comment on application materials submitted by the permit applicant does not constitute an opportunity to comment on "the agency's analysis of the effect of construction or modification on ambient air quality, including the agency's proposed approval or disapproval" as is required by § 51.161(a).

2. The Requirement in Georgia's SIP for a Public Comment Opportunity on Draft Synthetic Minor Operating Permits Does Not Satisfy Federal Minor NSR Public Participation Requirements Because It Does Not Cover All Minor NSR Permits, Is No Longer in Georgia's Current Rules, and Is Not Being Implemented by Georgia EPD.

Likewise, the requirement in Georgia's SIP that the public be given an opportunity to comment on draft synthetic minor permits is insufficient to satisfy 40 CFR § 51.161. At the outset, it must be acknowledged that even if comment on only those preconstruction permits that establish synthetic minor limits was sufficient to satisfy § 51.161, Georgia's current rules do not require comment on synthetic minor permits and despite the SIP requirement to do so, Georgia EPD has not provided an opportunity for public comment on draft synthetic minor permits for years. Thus, insofar as EPA has been relying on Georgia to provide for public comment on

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[54] Georgia SIP Rule 391-3-1.03(1) (available at https://www.epa.gov/sites/production/files/2017-12/documents/391-3-1.03-2017.pdf).

[55] In full, 40 CFR § 51.161(a) states:

> The legally enforceable procedures in § 51.160 must also require the State or local agency to provide opportunity for public comment on information submitted by owners and operators. The public information must include the agency's analysis of the effect of construction or modification on ambient air quality, including the agency's proposed approval or disapproval.

[56] *See, e.g.,* Response Brief filed by U.S. EPA on Nov. 7, 2019 in *Sierra Club v. EPA*, Case No. 18-9507 (10th Cir.), at 8 (citing § 51.161 for the proposition that "Each SIP must also provide for public notice and an opportunity for comment on proposed preconstruction permits in its preconstruction permit program."), at 45 (contending that under § 51.161, "EPA's implementing regulations require notice-and-comment proceedings on preconstruction permits") (relevant excerpts in Att. O).

synthetic minor permits as a way to comply with § 51.161, such reliance is obviously unwarranted. Furthermore, even if Georgia EPD did comply with the SIP and provide for public comment on synthetic minor permits, EPA has never found that Georgia's procedures for commenting on synthetic minor permits are, by themselves, sufficient to satisfy § 51.161. Nor is such finding warranted.

Certainly, it is especially important for the public to have an opportunity to comment on those construction permits that establish synthetic minor limits. By accepting a synthetic minor limit, a source that would otherwise be required to utilize the most up-to-date pollution controls available may not have to install any air pollution controls whatsoever. Moreover—and sometimes more importantly—synthetic minor limits allowing a permit applicant to avoid major NSR enables the applicant to escape having to model the impact of their proposed facility's air pollution on ambient air quality. Thus, ensuring that synthetic minor limits are both accurate and enforceable is critical to ensuring that the public receives the full health and environmental protections promised by the Clean Air Act.[57]

But even under circumstances where a new or modified source is not relying on a synthetic minor limit to avoid major source requirements, the public should have an opportunity to scrutinize the permitting authority's evaluation of the proposed facility and its proposed permitting decision. First, especially under circumstances where minor sources are clustered together in the same area, a minor source may in fact have a deleterious impact on local air quality. That is particularly true under circumstances where the source in question would emit HAPs, for which the major source threshold is very high considering the highly toxic nature of many HAP. As EPA acknowledges, many communities suffer from an unfair burden of polluting facilities. The principles of environmental justice require that at a minimum, that these communities be granted an opportunity to comment on permit applications for new sources and modifications claiming to be "minor."

Furthermore, just as a source may incorrectly calculate its emissions and conclude that it can operate as a "synthetic minor," the same miscalculation can result in a "major" source being misclassified as a "natural minor"—meaning that it is classified as minor without any enforceable emission limitations. This has occurred on several occasions with respect to wood pellet manufacturing facilities. For example, Drax's Morehouse BioEnergy plant in Louisiana was initially permitted on the basis that the plant would emit just 33 tons of VOCs per year, and therefore the initial construction permit did not contain any enforceable VOC limits for PSD avoidance. Testing at the plant later showed the facility emitted around 1,100 tpy of VOCs. Likewise, when Georgia permitted the Georgia Biomass pellet mill, the initial permit lacked a facility-wide PTE limit for VOCs for PSD avoidance, and again testing later showed the plant had a PTE exceeding 1,000 tpy. Finally, MRE Crossville in Alabama attempted to be permitted

[57] *See, e.g.*, 59 Fed. Reg. 44,460 (Aug. 29, 1994) (EPA explaining, "in light of the role of minor NSR in creating synthetic minors, the integrity of minor NSR programs is linked to the integrity of the major NSR program. Underscoring the importance of both programs is EPA's regulatory requirement that State or local permitting authorities provide an opportunity for public participation in major and minor NSR permitting (40 CFR 51.160, 161, 165, and 166)").

as a true minor for both Title V and PSD purposes, but testing showed VOC emissions were well over 200 tpy, necessitating both a Title V permit and synthetic minor limits for PSD avoidance.

3. EPA Must Take Quick Action to Require Georgia to Correct its Deficient SIP Provisions to Provide the Public with An Opportunity to Comment on Draft Minor NSR Permits.

In sum, the Georgia's SIP's failure to provide for public comment on draft minor NSR permits means that the state's minor NSR program does not satisfy the minimum federal criteria set forth at Georgia's SIP at 40 CFR § 51.160-66. While EPA previously approved Georgia's request to incorporate these defective state regulations into Georgia's SIP, it does not appear that EPA ever specifically approved of Georgia's failure to provide for public comment on draft minor NSR permits. Georgia's revision of its state rules to also eliminate public comment on synthetic minor permits has exacerbated the situation by eliminating public comment on *all* draft permits for non-major sources. Petitioners urge EPA to take quick action to require Georgia EPD to correct this SIP deficiency and ensure that Georgia residents (and affected residents of adjacent states) have a fair opportunity to participate in government decision-making regarding the permitting of new and modified "minor" sources that may in fact have a big impact on air quality and public health.

IV. REQUESTED RELIEF

A. EPA Should Issue an Order Directing Georgia EPD to Revoke the RBG Permit and to Only Issue a New Permit After Following Required Public-Notice-and-Comment Procedures.

Under 42 U.S.C. § 7413(a)(1)(A), EPA may issue orders to comply with a SIP "[w]henever, on the basis available to the Administrator, the Administrator finds that any person has violated or is in violation of any requirement or prohibition of an applicable implementation plan." The Clean Air Act defines "person" to include states. 42 U.S.C. § 7602(c). As explained above, Georgia EPD's issuance of RBG's air construction permit (No. 2499-075-0027-E-01-0) on January 28, 2021 without any opportunity for the public to comment on a draft permit and the effectiveness of the limits on the facility's "potential to emit" set forth therein violated the Georgia SIP requirements found at Georgia SIP Rules 391-3-1-.01(ddd) and (cccc) and SIP Rule 391-3-1-.03, subsections (2)(i) and (12)(c). Pursuant to its authority under 42 U.S.C. § 7413(a)(1)(A), EPA should issue an order instructing Georgia EPD to revoke RBG's air permit and not to issue another permit to RBG without first providing an opportunity for public comment on a draft permit.

B. EPA Should Issue an Order Prohibiting RBG from Constructing its Adel Facility Without Complying with the Act's NSR Requirements.

Under 42 U.S.C. § 7413(a)(5), EPA has authority to address NSR violations "[w]henever the Administrator . . . finds that a State is not acting in compliance with any requirement or prohibition . . . relating to the construction of new sources." In accordance with Georgia's SIP, a synthetic minor limit does not restrict a facility's potential to emit unless it is federally enforceable, which it can only be if, among other things, the public is provided with an opportunity to comment on a draft permit. Because Georgia EPD issued RBG's synthetic minor

permit without providing an opportunity for public comment, RBG cannot rely on those limits for purposes of calculating its potential to emit. Without those limits, RBG's planned Adel wood pellet manufacturing plant is a major source for purposes of the Act's NSR requirements.[58] Accordingly, RBG's construction of the plant without first obtaining a major NSR permit would violate the Act.[59]

Pursuant to 42 U.S.C. § 7413(a)(5), EPA should issue an order prohibiting RBG from constructing its Adel wood pellet manufacturing plant without either (1) complying with the Prevention of Significant Deterioration NSR requirements set forth in Georgia's SIP at Rule 391-3-1.02(7), or (2) obtaining federally enforceable synthetic minor limits as required by Georgia's SIP, which can be issued only after an opportunity for public comment on the draft synthetic minor permit.

C. EPA Should Order Georgia EPD to Cease Issuing Synthetic Minor Permits Without Providing for Public Comment.

Whereas 42 U.S.C. § 7413(a)(1) primarily addresses individual instances of SIP noncompliance, Section (a)(2) addresses SIP violations that "are so widespread that such violations appear to result from a failure of the State in which the plan … applies to enforce the plan … effectively." 42 U.S.C. § 7413(a)(2). Such is the case here with respect to Georgia's failure to provide an opportunity for public comment on draft synthetic minor permits. As shown above, Georgia systematically ignores the plain terms of its Georgia SIP Rules 391-3-1-.01(ddd) and (cccc) and SIP Rule 391-3-1-.03, subsections (2)(i) and (12)(c), and issues synthetic minor permits without providing an opportunity for comment on draft permits.

Pursuant to 42 U.S.C. § 7413(a)(2)(A), EPA should issue an order directing Georgia EPD to cease issuing synthetic minor permits that establish "potential to emit" limits designed to enable new sources to avoid applicability of federal air pollution control requirements for major sources without providing for an opportunity for public comment on draft versions of such permits in accordance with Georgia's SIP.

D. Require Georgia to Correct its Deficient Minor NSR Permitting Requirements.

Finally, under 42 U.S.C. § 7410(k)(5), whenever the EPA administrator finds that a SIP fails to "comply with any requirement" of the Act, "the Administrator shall require the State to revise the plan as necessary to correct such inadequacies." As shown above, Georgia's SIP does not meet the minimum requirements for approvability of state minor NSR permit programs at 40 C.F.R. §§ 51.161 due to the lack of an opportunity for public comment on draft "construction" permits.[60] EPA should use its § 7410(k)(5) authority to require Georgia to correct this SIP

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[58] This is especially evident with respect to NOx. At the plant's proposed production rate of 497,000 tons per year, RBG calculates that the facility emits 249.48 tpy of NOx. This means that at a production rate of 498,035—just 0.2% higher than nameplate capacity—the facility's NOx emissions will exceed the major source PSD threshold. Further, nothing in RBG's permit record suggests the facility is not capable of producing the extra 0.2% of pellets per year. Renewable Biomass Group, Adel, GA, Air Construction Permit Application, Greenfield Wood Pellet Manufacturing Facility, at Appendix C, Table C-1 (July 2020) (Att. E)

[59] 42 U.S.C. § 7475(a).

[60] Georgia SIP Rule 391-3-1.03(1), https://www.epa.gov/sites/production/files/2017-12/documents/391-3-1.03-2017.pdf.

deficiency. This correction is especially urgent due to Georgia's apparent decision to cease offering an opportunity for public comment on synthetic minor permits, possibly making Georgia the only state in the nation to exclude all draft minor NSR permits from public-notice-and-comment requirements.

CONCLUSION

Under Georgia's federally approved SIP and EPA's minor NSR regulations, members of the public have the right to an opportunity for public comment on air permits for proposed new and modified air pollution sources in their communities, even if such sources are classified as "minor." Especially when considered together with other environmental hazards present in already overburdened communities, minor sources can have a significant adverse impact on public health and welfare. When a minor source permit is used to establish synthetic minor limits that enable the source to avoid stringent Clean Air Act requirements that would otherwise be applicable, it is especially important for the public to have an opportunity to scrutinize such limits to ensure that they are accurate and enforceable as a legal and practical matter.

In refusing to provide an opportunity for public comment on the draft permit for RBG's proposed Adel, Georgia wood pellet manufacturing plant, Georgia EPD violated Georgia's SIP and denied impacted members of the public the right to ensure that the permit conditions are sufficient to protect their health and that of their families. Petitioners urge EPA to take prompt action to correct Georgia EPD's failure to follow the law when issuing RBG's air permit and to prevent RBG from constructing its plant in violation of NSR requirements. In addition, Petitioners ask EPA to correct Georgia's longstanding and widespread failure to comply with the public participation requirements of its SIP statewide, and to order Georgia to revise its SIP to bring it into compliance with the minimum criteria for approvability of state minor NSR programs set forth at 40 C.F.R. § 51.161.

Please note that because Georgia EPD issued RBG's final air permit on January 28, 2021, time is of the essence in responding to this petition. If you have any questions about this petition or would like to schedule a meeting to discuss it, please contact Keri Powell by telephone at (678) 902-4450 or by email at kpowell@powellenvironmentallaw.com.

Respectfully submitted,

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Patrick Anderson, Of Counsel
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director@mothersandothersforcleanair.org

Attachments: A through P.

cc (by Email (without attachments), and USPS Priority Mail (with attachments)):
Peter Tsirigotis, EPA Office of Air Quality Planning and Standards, Director, Tsirigotis.Peter@epa.gov
John Blevins, EPA Region 4, Acting Regional Administrator, Blevins.John@epa.gov

cc (by Email, without attachments):
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Tomas Carbonell, EPA Office of Air and Radiation, Deputy Assistant Administrator for Stationary Sources, Carbonell.Tomas@epa.gov
Caroline Freeman, EPA Region 4, Air Division Director, Freeman.Caroline@epa.gov
Richard Dunn, Georgia EPD, Director, Richard.Dunn@dnr.ga.gov
Karen Hays, Georgia EPD, Air Protection Branch, Branch Chief, Karen.Hays@dnr.ga.gov
Eric Cornwell, Georgia EPD, Air Protection Branch, Stationary Source Permitting, Eric.Cornwell@dnr.ga.gov

Message

From: Rich Innes [richinnes@merid.org]
Sent: 2/5/2021 3:05:53 PM
To: Utech, Dan [Utech.Dan@epa.gov]; Adhar, Radha [Adhar.Radha@epa.gov]; Fox, Radhika [Fox.Radhika@epa.gov]; Goffman, Joseph [Goffman.Joseph@epa.gov]; Arroyo, Victoria [Arroyo.Victoria@epa.gov]; Cassady, Alison [Cassady.Alison@epa.gov]; Katims, Casey [Katims.Casey@epa.gov]; Best-Wong, Benita [Best-Wong.Benita@epa.gov]; Wall, Tom [Wall.Tom@epa.gov]; Goodin, John [Goodin.John@epa.gov]; Eisenberg, Mindy [Eisenberg.Mindy@epa.gov]; Benson, Robert [Benson.Robert@epa.gov]; Frazer, Brian [Frazer.Brian@epa.gov]; Lexie Bell [lbell@mbnep.org]; Rob Pirani [rob@hudsonriver.org]
Subject: Timely Recommendation for EPA Budget Request?
Attachments: ANEP 2 Pager 2021.pdf; ANEP final draft stimulus letter Pam.docx

Dear Dan, Radhika and the new senior team at EPA.

Hearty congratulations. The Directors of the National Estuary Program are ecstatic to have you at the helm of the Agency. We very much look forward to partnering with you as you reconstitute and build back better the agency charged with such a critical, public health mission for the country.

As you formulate the EPA President's Budget Request for FY 2022, ***we ask you to consider asking for full funding of $50 million for the NEP,*** consistent with the brand new reauthorization recently approved by wide, bipartisan margins in the Congress. https://www.congress.gov/bill/116th-congress/house-bill/4044

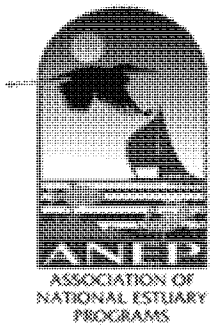
With a President and Administration firmly committed to tackling the climate crisis, funding invested in the NEPs would immediately enable coastal communities to equitably adapt to and mitigate the impacts of a rapidly changing climate. We also will ask that program support within the Office of Water be strengthened and adequately supported. The NEP Directors enjoy a close and very productive working relationship with EPA partners in HQ and the regions, but in recent years staff and other resources have been depleted and we hope this can be rectified by the new Administration.

The NEPs have a proven ability to be a prime delivery mechanism for many Clean Water Act priorities including:

- Comprehensive community driven plans to address resilience in communities vulnerable to the impacts of climate change
- A track record on addressing nutrient loadings
- Comprehensive actions in support of stormwater and infrastructure projects;
- Seagrass and shellfish restoration, and natural infrastructure such as living shorelines,
- Science and monitoring to guide decision-making;

Attaching some background on the NEP, and a letter sent to Congress regarding stimulus funding, FYI.

Thanks so much for considering this. We would be glad to discuss further and please let us know if we can provide further background or help in any way.



Rich Innes
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THE ASSOCIATION OF National Estuary Programs

Investing in a Strong, Resilient and Vibrant U.S. Coastal Economy

Innovative Congressional Vision
30 Years of Proven Success

The National Estuary Program (NEP) was created by the U.S. Congress in Section 320 of the Clean Water Act (1987.) The foundation for program success is the Congressional vision for NEP Management Conferences: non-regulatory, science-based, consensus-driven, stakeholder-engaged and outcome-focused. Program and fiscal oversight is strong.

Twenty-eight individual estuaries and watersheds have been designated as "Estuaries of National Significance" within the National Estuary Program. The NEP network represents 29 states in the continental U.S. and San Juan Bay, Puerto Rico.

Together, NEPs represent billions of dollars in economic value and deliver future opportunities for economic growth and diversification.

NEPs guide responsible stewardship of both natural assets and human-built infrastructure to ensure that America's estuaries are healthy, prosperous, and more resilient, today and for future generations.

Congressional Funding Needs

THANK YOU 116th Congress

$50 M Congressional Authorization

Expanded and focused funding for EPA competitive Watershed Grants Program

APPROPRIATION NEED

Appropriation of a minimum $1 M per program annually

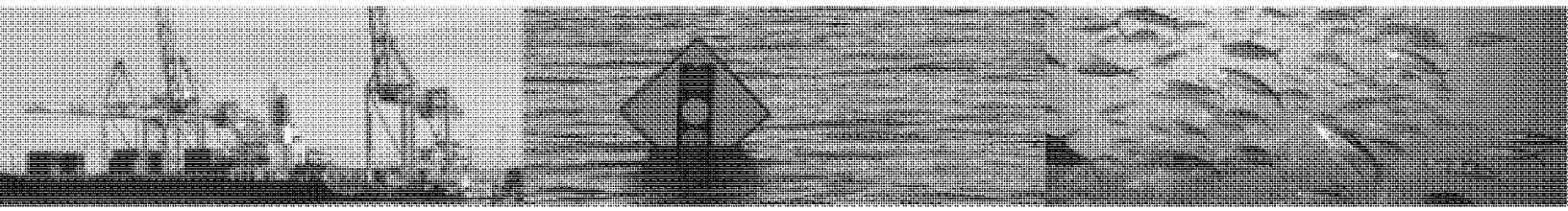
RETURN ON INVESTMENT

On average, the NEP leverages $22 in local, state and private-sector investment for every $1 of federal funds appropriated to the program (EPA 2020)

Contact: Association of National Estuary Programs · Rich Innes, Senior Policy Director
202-236-7171 · richinnes@merid.org · https://nationalestuaries.org/

Taking Action – Delivering Results

Annual Congressional budget appropriations provide essential federal funding for NEPs to work with their local, state and private-sector investment partners to implement the actions recommended and adopted in Comprehensive Conservation and Management Plans for each watershed.



Recover & Grow Resilient Economies

The COVID-19 pandemic has delivered a historic economic challenge to our nation.

Coastal and ocean industry sectors like tourism, commercial fishing, aquaculture, ports and the cruise industry have been heavily impacted.

Coastal communities and small businesses will play an important role in recovery.

NEPs work together with local businesses and industry to encourage responsible economic development for all people and all communities in our watersheds

Build Resilient Communities

Millions of Americans and businesses are vulnerable to East Coast and Gulf Coast hurricanes and other storm events.

As sea levels rise, erosion increases, coastal wetlands are lost and the vulnerability of our growing coastal populations and infrastructure are at increased risk.

America's coasts are battered by increasing storm intensity and frequency, driven by climate change.

NEPs work with federal, state and local partners to identify vulnerabilities, recommend actions and seek innovative solutions to protect life, property and commerce from sea level rise, flooding, storm surge and drought.

Protect Natural Ecosystems Services

Tangible economic and social benefits are delivered by strong and healthy ecosystems:

- Clean air and water
- Flood and storm surge protection
- Food
- Cultural and historic connections
- Wellness and quality of life benefits for people

Natural ecosystems are essential to our health, well-being and prosperity. Wildlife and wild places are important to the heritage, culture, and heart of America.

These are national legacy gifts that we protect and endow to enrich the lives of our children and future generations.

Reducing Nutrients And Pollutants To Surface And Groundwater

Years of inaction have allowed American infrastructure to degrade into a state of disrepair. In 2016, the American Society of Civil Engineers estimated that failing to meet U.S. infrastructure needs will result in $3.9 trillion in losses to GDP, $7 trillion in lost business sales, and 2.5 million lost jobs by 2025. Restoration and protection of clean and healthy surface and groundwater will require significant improvements to America's wastewater and stormwater infrastructure.

NEPs work with state and local governments and private-sector partners to reduce nutrients and other pollutants in their watersheds. NEPs provide a framework for enhanced communication, consensus-building among stakeholders and coordinated action. NEPs invest in infrastructure projects and water quality monitoring to track and reduce nutrients and other pollutant loads from impairing surface and ground waters that discharge to our estuaries.

Understand, Monitor And Respond To Harmful Algal Blooms (HABs)

HABs threaten local economies, wildlife, human health and quality of life. Shellfish closures, wild or farmed fish mortalities and HAB events create consumer concerns that can impact food supply chains. The fishing industry loses as much as $34M a year in sales when seafood is contaminated with toxins from HABs (CDC 2019). Researchers estimate $22M is lost annually in medical costs and lost workdays during HAB events (FL Dept. of Health, 2019).

Nutrient pollution drives HABs. NEPs work to reduce nutrient pollution entering our waters from all sources. NEPs deliver a comprehensive approach to monitor water quality, conserve coastal habitats that remove pollution, and improve stormwater and wastewater infrastructure to reduce environmental and human-health risks from HABs.

Message

From: Culligan, Kevin [Culligan.Kevin@epa.gov]
Sent: 2/3/2021 11:52:40 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]
Subject: Power plant power point
Attachments: EGU strategy - v3.pptx

Was reviewed by Peter and reflects input from CAMD. I am around and will have my work phone close. Don't hesitate to call.

- Kevin Ex. 6 Personal Privacy (PP)

Message

From: Kabanda, Thierry [Kabanda.Thierry@epa.gov]
Sent: 2/2/2021 10:01:14 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]
CC: Campbell, Ann [Campbell.Ann@epa.gov]; Rakosnik, Delaney [rakosnik.delaney@epa.gov]
Subject: FW: Meeting Materials for the EJ Pre-Meeting on 2/3 from 12-12:45pm...
Attachments: OAR and EJ Background_Final.docx

Good evening,

Please see attached material for tomorrow's noon meeting.

Thierry Kabanda, MBA
Staff Assistant
EPA/Office of Air and Radiation
Office: (202)-564-8604
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From: Whitehurst, Shanika <whitehurst.shanika@epa.gov>
Sent: Tuesday, February 2, 2021 4:55 PM
To: Rakosnik, Delaney <rakosnik.delaney@epa.gov>; Campbell, Ann <Campbell.Ann@epa.gov>; OAR Briefings <OAR_Briefings@epa.gov>
Cc: Lubetsky, Jonathan <Lubetsky.Jonathan@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>; Shaw, Betsy <Shaw.Betsy@epa.gov>
Subject: Meeting Materials for the EJ Pre-Meeting on 2/3 from 12-12:45pm...

Good afternoon...

Attached you will find the meeting materials for the EJ Pre-Meeting scheduled from 12-12:45pm tomorrow with Joe and Tomas. Please let me know if you have any questions.

Thank you....

Shanika

Shanika T. Whitehurst
Environmental Justice Coordinator
Office of Air and Radiation
Office of Air Policy and Program Support
202-564-8235

Message

From: Hingeley, Maureen [Hingeley.Maureen@epa.gov]
on behalf of Grifo, Francesca [Grifo.Francesca@epa.gov]
Sent: 2/24/2021 8:50:07 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]; Dunham, Sarah [Dunham.Sarah@epa.gov]; Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Edwards, Jonathan [Edwards.Jonathan@epa.gov]; Shaw, Betsy [Shaw.Betsy@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]; Koerber, Mike [Koerber.Mike@epa.gov]; Shoaff, John [Shoaff.John@epa.gov]; Grifo, Francesca [Grifo.Francesca@epa.gov]
Subject: RE: Air Issues - SI
Attachments: OAR SI BRIEFING_2.24.21.pdf

All,

Good afternoon. Please find attached the scientific integrity briefing slides. We added a disclaimer to note the information is internal to the agency.

Thanks!

-----Original Appointment-----
From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Tuesday, February 16, 2021 11:38 AM
To: Goffman, Joseph; Campbell, Ann; Dunham, Sarah; Tsirigotis, Peter; Grundler, Christopher; Edwards, Jonathan; Shaw, Betsy; Carbonell, Tomas; Nunez, Alejandra; Kim, Eun; Koerber, Mike; Shoaff, John; Grifo, Francesca
Subject: Air Issues - SI
When: Wednesday, February 24, 2021 9:15 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

Microsoft Teams meeting

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Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/2/2021 1:22:27 AM
To: Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Edwards, Jonathan [Edwards.Jonathan@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Dunham, Sarah [Dunham.Sarah@epa.gov]
CC: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Shaw, Betsy [Shaw.Betsy@epa.gov]
Subject: ACTION: EO Lookback
Attachments: OAR lookback 020120.xlsx

Good evening all. Attached please find everyone's response to the lookback called for in the EO. Many of the actions have been identified as needing a briefing. In some instances those briefings are already moving forward. Please look again at the list and let me know if any of your actions need a briefing this week in order to determine whether it should be included in the first cut of OAR's response due to OP on Friday. If so, we will prioritize getting those actions on to the calendar this week.

Thank you,

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

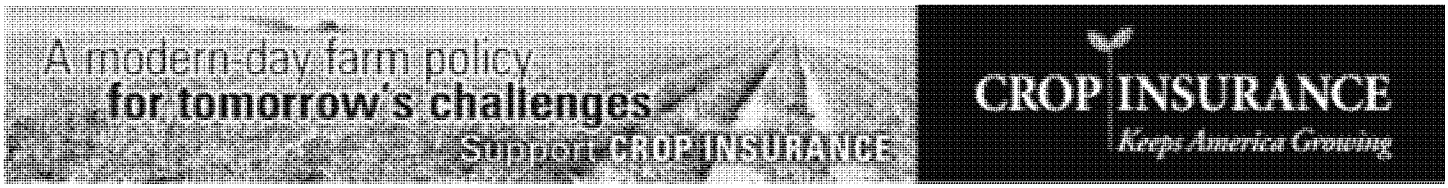
Message

From: Agri-Pulse Daily Harvest [sara@agri-pulse.com]
Sent: 2/8/2021 10:59:27 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Agri-Pulse Daily Harvest 2/8/2021

Agri-Pulse Daily Harvest 2/8/2021

Agri-Pulse Daily Harvest -- 2/8/2021

Here's your daily summary of top news from www.Agri-Pulse.com and regional headlines from across the country. Do you know someone who should also be on our list? Please ask them to click here.



FARM & RURAL POLICY

Agri-Pulse: Daybreak for February 8, 2021

Link - (Audio) Direct payments down this year * Booming demand for H-2A * US dairy exports set record high in 2020.

Agri-Pulse: DriveTime: February 5, 2021

Link - (Audio) USDA is out with its latest farm income forecast, and the figures have some good news and bad news for producers. That and a look at the top priorities of a new Ag Committee member.

Agri-Pulse:Washington Week Ahead: Biden pushes for budget deal as impeachment trial begins

Link - The Senate begins its impeachment trial for former President Donald Trump this week even as his successor pushes lawmakers to meet his demands for a $1.9 trillion package of coronavirus relief measures.

Agri-Pulse: Open Mic: Chuck Conner, NCFC

Link - (Audio) This week's Open Mic guest is Chuck Conner, president and CEO of the National Council of Farmer Cooperatives. The group's annual meeting will be virtual this week with no shortage of topics to embrace for the new year. Conner says the group is hopeful the Biden administration will reconsider tax changes offered in the last hour by the previous administration and that legislators will be willing to embrace much-needed changes to immigration reform. Conner expects antagonists to use the upcoming climate debate to attack livestock producers but believes agriculture has enough positive evidence to win the day. Conner offers comments on using the USDA's Commodity Credit Corporation to facilitate a carbon bank and the need for global market diversification.

Agri-Pulse: USDA extends CRP signup to close enrollment gap

Link - USDA's Farm Service Agency is extending the general signup period for the Conservation Reserve Program so it can look at ways to close an approximately 3-million-acre gap between the amount enrolled for 2021 and the CRP cap of 25 million acres.

Agri-Pulse: USDA: Farm income to slip in 2021 despite market surge

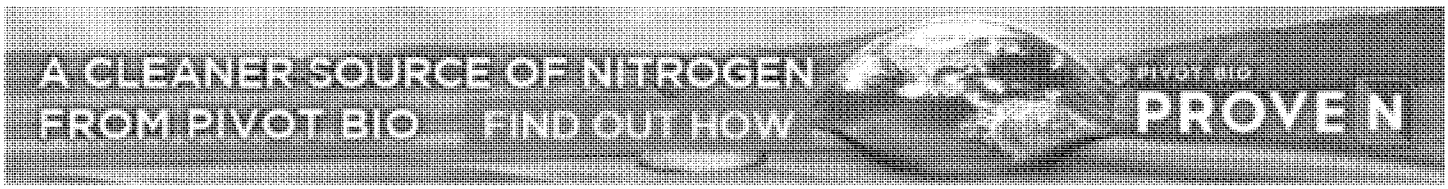
Link - Farm earnings are broadly expected to ease this year, although USDA's latest farm income forecast projects skyrocketing prices for key commodities will help offset a steep drop in government payments and increases in production costs.

Minneapolis Star Tribune: A 'giant' in DFL politics, Collin Peterson reflects on three decades in Congress

Link - He was a Blue Dog Coalition founding member, but work on agriculture will be his legacy

Milwaukee Journal Sentinel: Evers to include $43 million in biennial budget to support agriculture, farm families in Wisconsin

Link - Gov. Tony Evers will include more than $43 million in the 2021-23 budget to support agriculture and farm families in Wisconsin.



ENERGY

Agri-Pulse: China pumps up imports of US ethanol

Link - The Renewable Fuels Association announced Friday that China imported about 13 million gallons of U.S. ethanol in December, raising hopes that imports from the Asian powerhouse will continue in 2021.

Norfolk Daily News: Ethanol plant near Mead ordered to shut down

Link - A troubled ethanol plant near Mead that uses chemically treated seed corn has been ordered to shut down until it can dispose of excess, contaminated wastewater generated by the facility.

KCBD: Energy companies urge familiarity with policy as solar energy popularity increases on the South Plains

Link - As the sunny South Plains prompts more property owners to invest in solar energy production, companies like Xcel Energy are encouraging customers to contact their utility company.

Upstream Online: Total buys huge Texas solar pipeline to turn US power supply green

Link - French group adds 3GW PV and storage portfolio and will sign deal covering supply to all American industrial sites

Maine Public: Maine Solar Projects Upended After CMP Calls For More System Upgrades

Link - Maine's energy world is in an uproar over a finding by Central Maine Power that it must revise its analysis of costly system upgrades needed to serve a boom in new solar power projects.

The Wall Street Journal: Offshore Wind Farms, Big in Europe, Could Boom in U.S. Under Biden

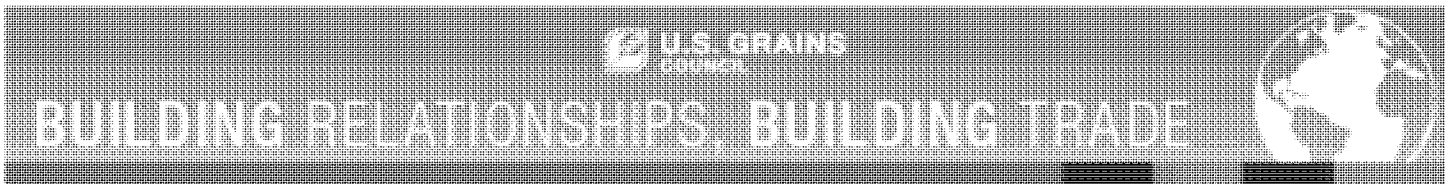
Link - Wind project developers are pressing the administration to ease bureaucratic hurdles to building giant turbines off the U.S. Atlantic coast.

KOB: Sandia National Labs researches ways to improve efficiency of wind energy

Link - As the country shifts toward more renewable sources of energy, researchers at Sandia National Labs are trying to solve some of the problems that can come with it.

The Wall Street Journal: Floating Wind Turbines Buoy Hopes of Expanding Renewable Energy

Link - Offshore wind farms that don't need to be embedded in the seafloor could open up new areas to clean-power generation.



FOOD & NUTRITION

New Jersey 101.5 FM Radio: Warehouse becoming vertical farms — and they're feeding New Jersey

Link - New Jersey's vertical farms are transforming agriculture by helping farmers meet growing food demand.

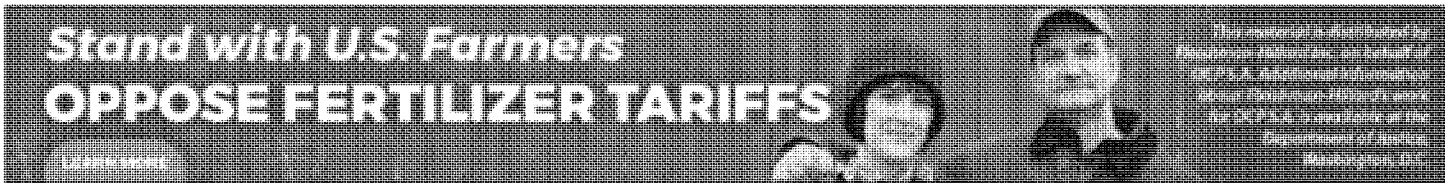
NBC News: Food banks struggling to feed hungry during Covid look forward to Biden's fixes to SNAP program

Link - During Covid-19, food banks have been swamped, serving people who don't get SNAP benefits and millions more whose SNAP benefits don't provide enough food.

Food Navigator: Heavy metals in baby food: How should the food industry respond?

Link - Headlines about 'toxins' in baby food are the ultimate PR nightmare, but how do we assess if

the levels of heavy metals highlighted in a recent congressional committee report mean are "dangerously high" in the absence of federally mandated thresholds for lead, mercury and cadmium, and how should the food industry respond?



TRADE & INTERNATIONAL

Agri-Pulse: USDA: New record for ag exports to China in 2020

Link - The U.S. exported $26.4 billion worth of agricultural goods to China in calendar year 2020, setting a new record, according to the latest USDA trade numbers that came out Friday.

Reuters: Indian protests against agriculture reforms attract new supporters

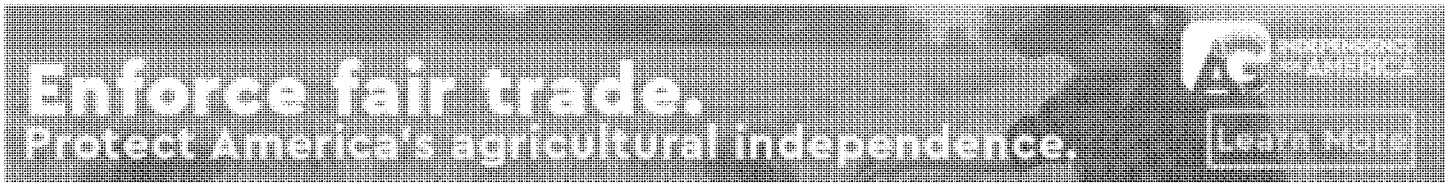
Link - Thousands of farmers in a politically important Indian state on Friday rallied in opposition to new agricultural laws, signalling growing support for a months-long campaign to have the government reforms scrapped.

Press and Journal: New project to measure sustainability of Scottish farms

Link - A project that measures the sustainability of farming activity in Scotland is to launch after nearly five years of research and planning.

Bloomberg: President Threatens to Raise Taxes on Farm Exports in Argentina

Link - President Alberto Fernandez of Argentina, one of the world's powerhouse food suppliers, is threatening farmers with a tax hike.



LABOR & IMMIGRATION

The Mercury News: Food and farm workers wait for vaccine as California prioritizes elders
Link - Frustrated, food and agricultural businesses — whose 3.4 million high-risk "essential workers" thought they were near the front of the line to receive a vaccine, right after medical workers and people in nursing homes — now don't know when it'll be their turn.

Associated Press: Wisconsin's Mink Farming Industry Now Seen at Risk of COVID
Link - what appeared in the two Taylor County, Wisconsin, mink farms that saw outbreaks in October was not flu, which tends to sicken the weakest animals. This took out the strongest mink, the mature adult females.

NPR: Rep. Ruiz: Vaccinating Food And Farm Workers Requires An 'Active, Concerted Effort'
Link - The Congressional Hispanic Caucus is calling on governors to follow guidance from the Centers for Disease Control and Prevention to prioritize food and agriculture workers in the vaccine rollout.

Fort Morgan Times: Work program brings new career opportunities to farm workers in Colorado
Link - The Farm Worker Jobs Program seeks to give farm workers an avenue to find employment in other industries.

Cleveland Scene: Ohio Labor Group Calls for End to Farm Contractor Abuses
Link - A legal victory in North Carolina could open the door to reforms that would protect farm workers in the Buckeye State as well.

CONSERVATION & WILDLIFE

Agri-Pulse: Senate narrowly backs Trump WOTUS, OKs budget resolution
Link - The Senate approves a budget resolution that provides a path for President Biden's $1.9 trillion stimulus package, but Republicans first force Democrats to take stands on numerous issues, including the reach of the Clean Water Act.

Bloomberg: AI Is Becoming a New Weapon in the Battle Against Crop Pests
Link - Artificial intelligence already is making strides in the development of new drugs, and now the pesticide industry wants in on the action.

The Wall Street Journal: The Environmental Upside of Modern Farming
Link - New methods rooted in low-impact, precision techniques require less land, less energy and fewer chemicals than traditional agriculture

Reuters: Court order delays construction at ConocoPhillips' Alaska project
Link - A weekend court ruling has temporarily blocked winter construction at a huge ConocoPhillips oil project on Alaska's North Slope.

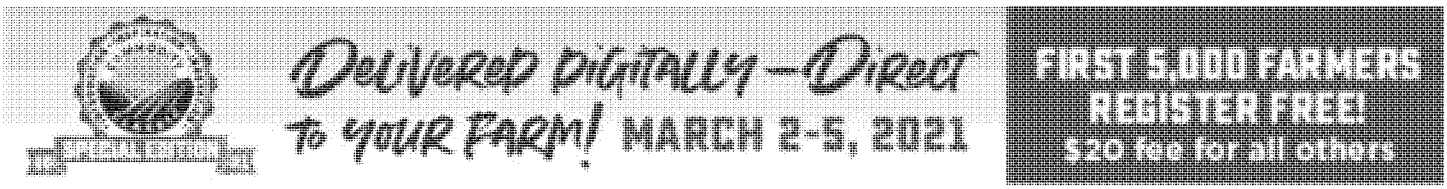
Idaho Statesman: This GOP congressman wants to remove 4 dams to save Idaho's salmon. It'll cost billions.
Link - An Idaho Republican congressman wants to end the salmon wars by removing select hydroelectric dams, replacing the electricity lost, paying communities and businesses, and giving American Indian tribes more power.

CBS News: In search of a humongous fungus
Link - Armillaria stretches underground in several massive sections found throughout the forest. It's one of the largest living organisms on Earth.

FoxBusiness: Biden climate actions to jolt electricity prices
Link - Electricity prices are set to "skyrocket" as President Biden steers the U.S. economy toward a green-energy agenda, according to experts.

Minnesota Public Radio News: A 'carbon bank' could mean extra cash for Midwest farmers

Link - A well-known Minnesota agribusiness hopes to turn climate change concern into cash for farmers.



MISCELLANEOUS

Agri-Pulse: Opinion: Carbon can be the next American cash crop – if we plant trust first
Link - In this opinion piece, Nutrien's CEO Chuck Margo, calls on partners from across the agriculture industry and other sectors to support US-grown carbon credits.

The Washington Post: Trump left behind a damaged government. Here's what Biden faces as he rebuilds it.
Link - More than 18 months after the Agriculture Department relocated two research agencies from Washington to Kansas City, Mo., prompting a major exodus from both divisions, the agencies are still struggling to regain their strength.

The Daily Herald: Data-driven farming: New tech 'changes agriculture'
Link - In a new program funded by the CARES Act, computers are helping Snohomish County farmers grow efficiently.

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Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 3/18/2021 10:48:58 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Rakosnik, Delaney [rakosnik.delaney@epa.gov]
Subject: Re: Request for Meeting

They were part of our outreach group. We must just be working with different contacts. Delaney and I will figure it out tomorrow and help them connect with one another within their organization.

Ann (Campbell) Ferrio
Chief of Staff
Office of Air and Radiation
(202) 566-1370

> On Mar 18, 2021, at 6:47 PM, Goffman, Joseph <Goffman.Joseph@epa.gov> wrote:
>
> Thanks.
>
> Joseph Goffman
> Acting Assistant Administrator
> Office of Air and Radiation
> U.S. Environmental Protection Agency
>
> **From:** Campbell, Ann <Campbell.Ann@epa.gov>
> **Sent:** Thursday, March 18, 2021 6:46 PM
> **To:** Goffman, Joseph <Goffman.Joseph@epa.gov>
> **Cc:** Rakosnik, Delaney <rakosnik.delaney@epa.gov>
> **Subject:** Re: Request for Meeting
>
> My mistake, they are on for March 31.
>
> Ann (Campbell) Ferrio
> Chief of Staff
> Office of Air and Radiation
> (202) 566-1370
>
> > On Mar 18, 2021, at 6:43 PM, Campbell, Ann <Campbell.Ann@epa.gov> wrote:
> >
> > They are on the calendar for next Wednesday, aren't they?
> >
> > Ann (Campbell) Ferrio
> > Chief of Staff
> > Office of Air and Radiation
> > (202) 566-1370

On Mar 18, 2021, at 6:39 PM, Goffman, Joseph <Goffman.Joseph@epa.gov> wrote:

Yet, again...

Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency

From: Shane Karr <roger.karr@stellantis.com>
Sent: Thursday, March 18, 2021 10:47 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: Re: Request for Meeting

Good morning:

Just checking in. Know you are extremely busy so just wanted to re-surface our request. Feel free to bump me over to whomever handles your schedule. Thank you.

Shane

On Mon, Mar 1, 2021 at 2:13 PM Shane Karr <roger.karr@stellantis.com> wrote:

> Hi Joe:
>
> Following last week's auto industry/labor meeting with Directors McCarthy and Deese, I wanted to reach out and see about getting on your schedule to discuss Stellantis' prospective electrified product portfolio and how we move forward constructively in reducing GHG emissions from autos.
>
> You may already be aware that we did a deep dive with the OTAQ team on January 20. I expect your time is limited, so we could do the short version of that meeting or cover whatever is of interest to you? In addition to myself, we would include our Head of Compliance and his key team, who are well known to your technical folks.
>
> Please let us know a time(s) that works for you and we will make something work on our end.
>
> Shane
>
> On Mon, Feb 1, 2021 at 7:49 PM Goffman, Joseph <Goffman.Joseph@epa.gov> wrote:

Again, Shane, this is excellent news. I appreciate both the outcome and the heads-up. Looking forward to making progress with you on this. Thank you.

Joseph Goffman

Acting Assistant Administrator

Office of Air and Radiation

U.S. Environmental Protection Agency

From: Shane Karr <roger.karr@stellantis.com>
Sent: Monday, February 1, 2021 7:46 PM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: EMBARGOED: CSAR Statement

Hi Joe:

Per our conversation, the below statement will be released at 7 am tomorrow by the Coalition. Wanted you to have it in advance but please embargo until the release time. Thank you.

Shane

"The Coalition for Sustainable Automotive Regulation (CSAR) chose to intervene in a lawsuit between California and the federal government to support a unified fuel economy and greenhouse gas (GHG) program. We are aligned with the Biden Administration's goals to achieve year-over-year improvements in fuel economy standards that provide meaningful climate and national energy security benefits, reduce GHG emissions and promote advanced technologies. In a gesture of good faith and to find a constructive path forward, the CSAR has decided to withdraw from this lawsuit in order to unify the auto industry behind a single national program, with ambitious, achievable standards."

--

Shane Karr
Mobile: 202-360-1187
shane.karr@stellantis.com

Message

From: Srinivasan, Gautam [Srinivasan.Gautam@epa.gov]
Sent: 2/11/2021 10:46:36 PM
To: Koerber, Mike [Koerber.Mike@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]
CC: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: RE: O3 SIP requirements rule case

Yes, thanks much Tomas.

++++++++++++++++++++++++++++++
(202) 564-5647 (o)
(202) 695-6287 (c)

From: Koerber, Mike <Koerber.Mike@epa.gov>
Sent: Thursday, February 11, 2021 5:44 PM
To: Carbonell, Tomas <Carbonell.Tomas@epa.gov>
Cc: Goffman, Joseph <Goffman.Joseph@epa.gov>; Srinivasan, Gautam <Srinivasan.Gautam@epa.gov>
Subject: Re: O3 SIP requirements rule case

Thank you, Tomas

On Feb 11, 2021, at 5:37 PM, Carbonell, Tomas <Carbonell.Tomas@epa.gov> wrote:

Hi Mike,

Ex. 5 Deliberative Process (DP)

Tomás

From: Koerber, Mike <Koerber.Mike@epa.gov>
Sent: Thursday, February 11, 2021 4:29 PM
To: Carbonell, Tomas <Carbonell.Tomas@epa.gov>
Subject: FW: O3 SIP requirements rule case

Ex. 5 Deliberative Process (DP)

to not seek rehearing. Attached is a pager with more detail. Sorry for the short notice. Please let me know if you have any questions.

Mike

From: Srinivasan, Gautam <Srinivasan.Gautam@epa.gov>
Sent: Thursday, February 11, 2021 12:00 PM
To: Koerber, Mike <Koerber.Mike@epa.gov>

Cc: Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>
Subject: O3 SIP requirements rule case

Hi Mike- I think your folks have been in touch with you about our need to make a decision on

Ex. 5 Deliberative Process (DP)

discuss.

Thanks much.

++++++++++++++++++++++++++++
(202) 564-5647 (o)
(202) 695-6287 (c)

Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/18/2021 5:52:10 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Glick calls on Congress to 'rethink' Texas go-it-alone grid status

Glick calls on Congress to 'rethink' Texas go-it-alone grid status

By Eric Wolff

02/18/2021 12:50 PM EST

FERC Chair Rich Glick on Thursday called on Congress and state officials to reconsider Texas' unique grid-island status to avoid catastrophic power failures like the one that hit the state this week.

The details: Glick expressed sympathy for the millions of Texans who have been in the dark for days in freezing temperatures, but he questioned whether Texas' isolated grid — which keeps the vast majority of its power system out of FERC jurisdiction — is doing more harm than good.

"I believe both Congress and the state government need to rethink Texas' go-it-alone approach to much of the central electric grid," he said in his opening remarks at FERC's monthly open meeting. "Does it make sense to isolate yourself and limit your ability to get power from neighboring regions, just to keep FERC at bay? It is the proverbial cutting off your nose to spite your face."

Glick's remarks come after former Energy Secretary and Texas Gov. Rick Perry said Texans should be willing to sacrifice and go days without power in order to keep the federal regulator out of the state's power grid. And he warned that because of the outages, "those watching on the left may see the situation in Texas as an opportunity to expand their top-down, radical proposals."

Glick also said he would back new mandatory standards from the North American Electric Reliability Corp. "to make sure that electric generators and others are better prepared when weather strikes next time."

"And there will be a next time. Climate changes unfortunately have already begun having a dramatic impact on our weather," he said.

FERC and NERC have already announced a joint investigation into the massive power failures in the Midwest and Texas this week. A similar action took place after a winter power failure in Texas in 2011, but Glick promised to act on whatever emerged from the report.

"We also need to ensure that the results of the inquiry don't just sit on the shelf gathering dust," he said. "And then we don't do what happened after the 2011 event in Texas and Arizona and rely on voluntary guidance to protect the public," he added.

To view online:
https://subscriber.politicopro.com/energy/whiteboard/2021/02/glick-calls-on-congress-to-rethink-texas-go-it-alone-grid-status-3987085

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USA

California Communities Against Toxics ▫ Earthjustice
Natural Resources Defense Council ▫ Sierra Club
Union of Concerned Scientists

February 19, 2021

By Email and First-Class Mail

Acting Administrator Jane Nishida
U.S. Environmental Protection Agency
1101A EPA Headquarters
William Jefferson Clinton Building
1200 Pennsylvania Ave., NW
Washington, D.C. 20460
Nishida.Jane@epa.gov

Re: Petition to Stay, Reconsider, and Repeal the Trump Administration's Unlawful Effort to Mandate Cost-Benefit Analysis during All Significant Clean Air Act Rulemakings (85 Fed. Reg. 84,130)

Dear Acting Administrator Nishida:

On December 23, 2020, the Trump Administration finalized an onerous and unlawful regulation that will impede the Environmental Protection Agency's efforts to limit harmful air pollution and protect public health.[1] Under the rule, the EPA will be required to prepare a lengthy "assessment of all benefits and costs" for an array of "regulatory options" before proposing or finalizing any "significant" Clean Air Act protections.[2] Remarkably, the regulation's requirements will even apply to rulemakings in which the agency is statutorily prohibited from considering costs.[3]

As proposed, the Trump Administration's cost-benefit rule was an arbitrary and unlawful threat to public health. As promulgated, the regulation's worse. In the

[1] Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process, 85 Fed. Reg. 84,130 (Dec. 23, 2020) (EPA-HQ-OAR-2020-0044).

[2] *Id.* at 84,155 (40 C.F.R. §§ 83.2(a), 83.3(a)(1)).

[3] *Id.* at 84,134, 84,135, 84,141, 84,155.

text of its final rule, the prior administration made clear that the required cost-benefit calculations are designed to "ignor[e] distributional effects"—a striking and unlawful departure from the EPA's longstanding commitment to environmental justice.[4] The administration further declared that its final regulation is intended to be "enforceable against the Agency"—a statement that promises to saddle the EPA with meritless challenges to legally required air-quality protections.[5] And the final rule, finally, established a new and burdensome set of scientific requirements that have no statutory basis or justification.

In order to ensure that the EPA is able to implement the Clean Air Act fully and without delay, the Trump Administration's unlawful cost-benefit rule must be repealed. On behalf of our many members and supporters, California Communities Against Toxics, Earthjustice, Natural Resources Defense Council, Sierra Club, and the Union of Concerned Scientists accordingly ask the agency to reconsider the regulation and to stay it during the reconsideration proceeding.

I. The prior administration's cost-benefit rule should be reconsidered and stayed.

Under the Clean Air Act, the EPA is required to "convene a proceeding for reconsideration" whenever an objection "of central relevance to the outcome of … [a] rule" arises "after the period for public comment (but within the time specified for judicial review)" or was "impracticable" to raise during the comment period.[6] During such a proceeding, the effectiveness of the regulation being reconsidered "may be stayed … by the Administrator … for a period not to exceed three months."[7] Because the Trump Administration's final cost-benefit rule gave rise to a number of important objections that meet the requirements for reconsideration, the EPA should grant reconsideration. And because the rule will illegally, arbitrarily, and dangerously impair and delay the EPA's efforts to protect human health and the

[4] *Id.* at 84,154 (40 C.F.R. § 83.1).

[5] *Id.* at 84,138.

[6] 42 U.S.C. § 7607(d)(7)(B); *Chesapeake Climate Action Network v. EPA*, 952 F.3d 310, 319 (D.C. Cir. 2020) (noting that "[t]he … impracticability prong … is met 'when the final rule was not a logical outgrowth of the proposed rule'").

[7] 42 U.S.C. § 7607(d)(7)(B).

environment, the agency should stay the effectiveness of the rule pending reconsideration.[8]

First, in responding to comments "asking for clarification as to whether the procedures in th[e] final rule are enforceable against the Agency[,]" the prior administration declared—for the first time, in its final preamble—that they would be.[9] The administration argued, too, that the enforceability of its final rule was not enough to render the action "substantive"—despite the fact that opponents of air-quality protections will now have a new right to challenge them in court.[10] These eleventh-hour assertions raised further objections to the Trump Administration's claim of authority to establish its cost-benefit requirements as "internal agency procedures."[11] Given that the EPA cannot act without statutory authority, these objections were of "central relevance to the outcome" of the rulemaking.[12] It would have been "impracticable" to raise the objections, moreover, before the

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[8] The provisions of Section 307(d) apply to a broad set of rulemakings, including those that "pertain[] to" or arise "under" many of the Clean Air Act's programs. *Id.* § 7607(d)(1)(A)-(U) (extending Section 307(d)'s requirements to "the promulgation or revision of any regulation pertaining to any fuel or fuel additive under section 7545[,]" the "promulgation or revision of regulations under part C of subchapter I (relating to prevention of significant deterioration of air quality and protection of visibility)," the "promulgation or revision of any regulation pertaining to urban buses or the clean-fuel vehicle, clean-fuel fleet, and clean fuel programs under part C of subchapter II," and many other actions). Because the Trump Administration's cost-benefit requirements pertain to—and will unlawfully govern—every significant action taken by the EPA under the Clean Air Act, they are subject to Section 307(d). *Id. See also id.* § 7607(d)(1)(V) (noting that Section 307(d) can also be applied to "such other actions as the Administrator may determine").

[9] 85 Fed. Reg. at 84,138.

[10] *Id.* at 84,138-39.

[11] *Id.*

[12] 42 U.S.C. § 7607(d)(7)(B); *Chesapeake Climate Action Network*, 952 F.3d at 322 (noting that objections that "go to the very legality" of an EPA rule are clearly of "central relevance" to the challenged rulemaking). *See also, e.g.*, *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 208 (1988) ("It is axiomatic that an administrative agency's power to promulgate legislative regulations is limited to the authority delegated by Congress.").

administration made its new assertions in the final rule.[13] The EPA should accordingly grant reconsideration and a stay.

Second, the Trump Administration announced in its final rule that the economic analysis the regulation requires is designed to disregard the environmental-justice implications of the EPA's decisions. According to the rule's revised text, when "benefits and costs can be quantified and expressed in monetary units," the required "[b]enefit-cost analysis" will "provide[] decision makers with a clear indication of the most economically efficient alternative, that is, the alternative that generates the largest net benefits to society (*ignoring distributional effects*)."[14] Under Executive Order 12,898, however, the EPA is obligated to identify and address "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations[.]"[15] And with Executive Order 14,008, President Biden has affirmed the federal government's commitment to "deliver[ing] environmental justice in communities all across America."[16] The prior administration's declaration that "distributional effects" should be "ignor[ed]" in the EPA's analyses was accordingly arbitrary and unlawful—raising another objection of "central relevance to the outcome" of the administration's rulemaking that would have been "impracticable" to address during the comment period.[17] In light of President Biden's mandate that "all agencies … immediately review all existing regulations … promulgated … between January 20, 2017, and January 20, 2021, that are or may be inconsistent with" the advancement of environmental justice, the EPA should stay the cost-benefit rule and grant reconsideration.[18]

Third, with its final regulation, the Trump Administration unveiled a new process for "selecting and quantifying human health benefit endpoints" that will further—and arbitrarily—delay the EPA's establishment of important public-health protections.[19] Under the rule, the agency will now be obligated to use a "systematic review process" in "evaluat[ing] … hazard data for the purposes of determining

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[13] 42 U.S.C. § 7607(d)(7)(B).

[14] 85 Fed. Reg. at 84,154 (40 C.F.R. § 83.1) (emphasis added).

[15] Exec. Order No. 12,898, § 1-101, 59 Fed. Reg. 7,629 (Feb. 11, 1994).

[16] Exec. Order No. 14,008, § 201, 86 Fed. Reg. 7,619 (Jan. 27, 2021).

[17] 85 Fed. Reg. at 84,154 (40 C.F.R. § 83.1); 42 U.S.C. § 7607(d)(7)(B).

[18] Exec. Order No. 13,990, §§ 1-2, 86 Fed. Reg. 7,037 (Jan. 20, 2021).

[19] 85 Fed. Reg. at 84,155 (40 C.F.R. § 83.3(a)(9)).

which [human-health] endpoints to include in a … [cost-benefit analysis] and what concentration-response functions to use to quantify changes in these endpoints."[20] According to the regulation, "systematic review" is a "process for evaluating the scientific literature that includes" four elements:

> (1) Identification of the specific question to be addressed in the review; (2) Pre-specified methods used to address the question, making these methods and the review process transparent) [*sic*]; (3) A search strategy written into the protocol that explicitly states the inclusion and exclusion criteria for studies; and (4) A description of the structured approach used to draw conclusions considering all appropriate and available lines of evidence, including epidemiologic, toxicologic, and mechanistic lines of evidence.[21]

In addition to mandating "systematic review," the final rule declared new standards for evaluating scientific studies that might be used by the EPA in a cost-benefit analysis. According to the regulation:

> The studies or analyses used to quantify the concentration-response relationships … should be: (A) Based upon human data when available; (B) Specific to the exposure route, duration, and levels, with preference given to those studies assessing exposure similar to those experienced by the general population; (C) Employ [*sic*] a design or analysis that adequately addresses relevant sources of potential critical confounding; (D) Consider [*sic*] how exposure is measured, particularly those that provide measurements at the level of the individual and that provide actual measurements of exposure; and (E) Reliably distinguish [*sic*] the presence or absence (or degree of severity) of health outcomes.[22]

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[20] *Id.* (40 C.F.R. § 83.3(a)(9)(ii)).

[21] *Id.* at 84,154-55 (40 C.F.R. § 83.1).

[22] *Id.* at 84,155-56 (40 C.F.R. § 83.3(a)(9)(iii)).

These requirements promise to increase the EPA's burdens in complying with the cost-benefit rule—burdens that will likely lead to unlawful delays in the establishment of essential air-quality protections. The requirements are also arbitrary and unlawful, imposing vague scientific standards that are divorced from the agency's statutory obligation to rely on the best available research.[23] As a result, while "impracticable" to raise during the comment period, an objection to the final rule's new scientific requirements was also of "central relevance to the outcome" of the rulemaking.[24] The regulation should accordingly be stayed and reconsidered.[25]

II. The EPA should repeal the prior administration's cost-benefit rule as expeditiously as possible.

Once the EPA has initiated a proceeding for reconsidering the Trump Administration's cost-benefit rule, it should move expeditiously to repeal the regulation. As detailed above and in the attached comments, the rule is an arbitrary and unjust effort to undermine the protections of the Clean Air Act.[26] It's also an action the EPA lacked authority to take.

When implementing the Clean Air Act, the EPA is bound by the judgments that have been made by Congress.[27] As the D.C. Circuit has explained, the "EPA is

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[23] *See, e.g.*, *Physicians for Social Responsibility v. Wheeler*, 956 F.3d 634, 647 (D.C. Cir. 2020) (noting that the "EPA operates pursuant to multiple statutory mandates requiring that its decisions rest on various formulations of 'the best available science'").

[24] 42 U.S.C. § 7607(d)(7)(B).

[25] *See, e.g.*, *Chesapeake Climate Action Network*, 952 F.3d at 319, 321 (concluding that it would have been "impracticable" to raise objections to an EPA rule during the comment period as members of the public "were not given the opportunity to comment on, propose revisions to, or otherwise challenge" language that was "first unveiled" in the final rule).

[26] *See* Earthjustice, California Communities Against Toxics, and Sierra Club, Comments on the June 11, 2020 Proposed Rule: Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process (Aug. 3, 2020) (EPA-HQ-OAR-2020-0044-0663) (attached); Comments of Public Health and Environmental Organizations (Aug. 3, 2020) (EPA-HQ-OAR-2020-0044-0472) (attached).

[27] *See, e.g.*, *Lead Indus. Ass'n, Inc. v. EPA*, 647 F.2d 1130, 1150 (D.C. Cir. 1980) (noting that "[a] policy choice such as … [whether the EPA may consider costs] is one which only Congress, not the courts and not EPA, can make").

a federal agency—a creature of statute. It has no constitutional or common law existence or authority, but only those authorities conferred upon it by Congress."[28] Given the limits of the EPA's powers, "when Congress directs … [the] agency to consider only certain factors in reaching an administrative decision, the agency is not free to trespass beyond the bounds of its statutory authority by taking other factors into account."[29]

The EPA's lack of authority to consider factors that haven't been mentioned by Congress includes the question of regulatory costs. The Supreme Court itself has "refused to find implicit in ambiguous sections of the … [Clean Air Act] an authorization to consider costs that has elsewhere, and so often, been expressly granted."[30] In order to adopt its cost-benefit rule, in other words, the prior administration had to identify "a textual commitment of authority to the EPA to consider costs" in every "significant" Clean Air Act rulemaking.[31] It couldn't do so. As the Congressional Research Service has noted, while "[t]he act requires or authorizes the … Administrator to promulgate regulations or set standards in more than 60 sections or subsections[,] … [i]n 25 of these sections or subsections, cost is not mentioned or implied as a factor to be considered."[32] And even where costs are mentioned, the statute often doesn't authorize the exhaustive assessment of costs, benefits, and regulatory alternatives that will be required under the rule.[33]

The unlawfulness of the Trump Administration's cost-benefit mandate is most evident in light of the Clean Air Act provisions that prohibit the EPA from considering costs. In Section 109 of statute, for example, Congress directed the EPA

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[28] *Michigan v. EPA*, 268 F.3d 1075, 1081 (D.C. Cir. 2001).

[29] *Lead Indus. Ass'n*, 647 F.2d at 1150. *See also Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (noting that "an agency rule would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider").

[30] *Whitman v. Am. Trucking Ass'ns, Inc.*, 531 U.S. 457, 467-68 (2001).

[31] *See id.*

[32] Cong. Research Serv., Cost and Benefit Considerations in Clean Air Act Regulations (May 5, 2017) (Rep. No. R44840, Version 4), at 1. The report's list of authorizing provisions that do not mention costs includes Sections 109(a), 109(b), 110(c)(1), 112(d)(2) and (3), 112(d)(2) and (3), 112(d)(8), 112(f), 112(k), 126(c), 129(a)(2), 166, 202(a), 202(j), 202(m), 211(i), 211(o), 219(c), 243, 328, 407(b)(1), 604(c), 605(c), 609, 610, and 615. *Id.* at 6-7.

[33] *Id.* at 2-5.

to establish "[n]ational primary ambient air quality standards" for criteria pollutants at levels that "are requisite to protect the public health" with "an adequate margin of safety[.]"[34] As the Supreme Court observed, this language "'is absolute.'"[35] Under it,

> [t]he EPA, "based on" the information about health effects contained in the technical "criteria" documents compiled under § 108(a)(2), … is to identify the maximum airborne concentration of a pollutant that the public health can tolerate, decrease the concentration to provide an "adequate" margin of safety, and set the standard at that level. Nowhere are the costs of achieving such a standard made part of that initial calculation.[36]

"The text of § 109(b)," in short, "interpreted in its statutory and historical context and with appreciation for its importance to the … [Clean Air Act] as a whole, unambiguously bars cost considerations from the NAAQS-setting process[.]"[37]

Given the critical importance of placing limits on hazardous air pollutants, Congress established additional restrictions on the consideration of costs in Section 112 of the Clean Air Act. Under Section 112(d), standards for new and existing sources are generally required to provide for "the maximum degree of reduction in emissions of … hazardous air pollutants … that the Administrator … determines is achievable" after "taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements[.]"[38] The statute, however, sets a floor: under Section 112(d)(3), the EPA's standards may "not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Administrator."[39] "Cost," in other words, "may be taken into account only in

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[34] 42 U.S.C. § 7409(b)(1).

[35] *Whitman*, 531 U.S. at 465 (quoting D. Currie, Air Pollution: Federal Law and Analysis 4-15 (1981)).

[36] *Id.*

[37] *Id.* at 471; *id.* at 471 n.3 (concluding that the EPA is similarly barred from "consider[ing] implementation costs in setting the secondary NAAQS").

[38] 42 U.S.C. § 7412(d)(2).

[39] *Id.* § 7412(d)(3).

considering beyond-the-floor emissions limitations"; it "may not influence the determination of … [the] floor, which depends exclusively upon the emissions reductions achieved by the best-performing sources."[40]

Congress knows, of course, what cost-benefit analysis is—and it knows how to require such an analysis when it wants one. With Section 812 of the Clean Air Act, for example, Congress directed the EPA to prepare "a comprehensive analysis of the [statute's] impact … on the public health, economy, and environment of the United States"—an analysis that "consider[ed] the costs, benefits and other effects" of the statute's various standards.[41] Congress further specified what it meant by "costs" and "benefits."[42] With respect to benefits, Section 812 declared that the EPA should consider:

> all of the economic, public health, and environmental benefits of efforts to comply with … [the Clean Air Act's] standard[s]. In any case where numerical values [we]re assigned to such benefits, a default assumption of zero value … [was] not [to] be assigned … unless supported by specific data. The … [agency was also required to] assess how benefits … [were] measured in order to assure that damage to human health and the environment … [was] more accurately measured and taken into account.[43]

As to costs, Congress directed the EPA to "consider the effects of … [the statute's] standard[s] on employment, productivity, cost of living, economic growth, and the

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[40] *Nat'l Lime Ass'n v. EPA*, 233 F.3d 625, 640 (D.C. Cir. 2000), *as amended on denial of reh'g* (Feb. 14, 2001). Additional examples of Clean Air Act provisions that prohibit or limit the consideration of costs can be found in the attached comment letters.

[41] 42 U.S.C. § 7612(a). *See also, e.g.*, *id.* § 7403(j)(3)(B)(iii) (calling for an "analysis of the costs, benefits, and effectiveness of the acid deposition control program"); *id.* § 7545(c)(2)(B) (providing that "[n]o fuel or fuel additive may be controlled or prohibited … except after consideration of available scientific and economic data, including a cost benefit analysis comparing emission control devices or systems which are or will be in general use").

[42] *Id.* §§ 7612(b)-(c).

[43] *Id.* § 7612(b).

overall economy of the United States."[44] Ultimately, Section 812 required the EPA to "submit a report to … Congress" that addressed "all costs incurred previous to November 15, 1990, in the effort to comply" with the Clean Air Act's standards, and "all benefits that have accrued to the United States as a result of such costs."[45]

The design of Section 812's cost-benefit requirements underscores the remarkable—and unlawful—overreach of the Trump Administration's cost-benefit rule. Under Section 812, the EPA was obligated to provide Congress with a report analyzing the costs and benefits of the Clean Air Act—a report that Congress could use in reevaluating, as a matter of policy, what protections the statute should afford.[46] Under the prior administration's rule, in contrast, the EPA will be required to engage in cost-benefit analysis so as to decide for itself, during each and every "significant" rulemaking, whether there is a "compelling need for federal government intervention in the market[,]" and whether the benefits of various "regulatory options" justify their costs.[47] This goes too far. Where the Clean Air Act requires the EPA to regulate with only limited consideration of costs—or with no consideration at all—Congress has already made the decision that "federal government intervention in the market" is necessary to abate air pollution and protect the public's well-being.[48] As the EPA has no authority to second-guess Congress's judgment in these instances, the cost-benefit rule must be repealed.

In attempting to evade the Clean Air Act's limits on cost-benefit analysis, the Trump Administration argued that the EPA could somehow analyze costs without considering them. According to the administration, "while certain statutory provisions may prohibit reliance on … [cost-benefit analysis] or other methods of cost consideration in decision-making, such provisions do not preclude the Agency from providing additional information regarding the impacts of a proposed or final

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[44] *Id.* § 7612(c).

[45] *Id.* § 7612(d). The EPA concluded its retrospective report regarding the Clean Air Act's costs and benefits on October 15, 1997; two prospective studies were later published on November 15, 1999 and March 1, 2011. *See* EPA, Benefits and Costs of the Clean Air Act, *available at* https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act.

[46] *See* 42 U.S.C. § 7612(d).

[47] 85 Fed. Reg. at 84,142.

[48] *See id.*

rule to the public."[49] The notion, however, that the EPA can engage in cost-benefit analysis without unlawfully considering costs cannot be taken seriously. It also disregards the design of the administration's regulation. Under the rule, the EPA will be required to assess a range of "regulatory options" on the basis of their calculated costs and benefits—even when the relevant statutory provision prohibits the consideration of costs.[50] The agency will then have to present a summary of its analysis—"including total benefits, costs, and net benefits"—"in the preamble" of its proposed and final rules.[51] The results of the agency's economic assessments, in other words, will have to be incorporated into the text of actions for which costs cannot be considered. It is difficult to imagine more open defiance of the Clean Air Act's mandates.[52]

III. Conclusion

The Trump Administration's cost-benefit rule is arbitrary, unlawful, and unjust. It should accordingly be reconsidered, stayed, and repealed by the EPA as expeditiously as possible.

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[49] *Id.* at 84,134.

[50] *Id.* at 84,155 (40 C.F.R. § 83.3).

[51] *Id.* at 84,156 (40 C.F.R. § 83.4(a)).

[52] *See Whitman*, 531 U.S. at 471 n.4 (noting that even a concealed act of defiance—"secretly considering … costs … without telling anyone"—"would be grounds for vacating" an air-quality standard, "because the Administrator had not followed the law").

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Attachment

Earthjustice, California Communities Against Toxics, and Sierra Club, Comments on the June 11, 2020 Proposed Rule: Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process (Aug. 3, 2020) (EPA-HQ-OAR-2020-0044-0663)

EPA-HQ-2021-5551

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Comments on the June 11, 2020 Proposed Rule: Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process

Docket ID No. EPA-HQ-OAR-2020-00044
Submitted via Regulations.gov

Earthjustice, California Communities Against Toxics, and Sierra Club

August 3, 2020

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I. Introduction

With the Clean Air Act, Congress established a comprehensive program with the "broad" and "unequivocal" purpose of "protect[ing] and enhanc[ing] the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population[.]"[1] All told, the statute includes more than sixty provisions that authorize or require the EPA to adopt air-quality standards, emissions limits, and other kinds of regulatory protections.[2] These provisions differ, of course, in many respects—including their approach to costs. While some sections of the statute direct the EPA to engage in an examination of regulatory costs and benefits, others call for a more limited assessment of costs along with other factors.[3] And as both the Supreme Court and the D.C. Circuit have recognized, still other provisions prohibit the EPA from considering costs altogether.[4]

In proposing a regulation that would require extensive cost-benefit analysis during all significant Clean Air Act rulemakings, the Administrator has defied the

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[1] 42 U.S.C. § 7401(b)(1); *Gen. Motors Corp. v. Ruckelshaus*, 742 F.2d 1561, 1571 (D.C. Cir. 1984); *Chrysler Corp. v. EPA*, 631 F.2d 865, 888 (D.C. Cir. 1980).

[2] Cong. Research Serv., Cost and Benefit Considerations in Clean Air Act Regulations (May 5, 2017) (Rep. No. R44840, Version 4) ("CRS Report") (attached), at 1, 3-7 (cataloguing the statute's authorizing provisions).

[3] *See, e.g.*, 42 U.S.C. § 7612(a) (requiring the EPA to undertake "a comprehensive analysis of the impact of … [the statute] on the public health, economy, and environment of the United States[,]" including an assessment of "the costs, benefits and other effects associated" with implementing specified sections of the statute); 42 U.S.C. § 7585(b)(1) (authorizing the EPA to "promulgate a revised less stringent standard for … [heavy-duty clean-fuel] vehicles or engines … if the Administrator determines that the 50 percent reduction [otherwise] required … is not technologically feasible for clean diesel-fueled vehicles and engines, taking into account durability, costs, lead time, safety, and other relevant factors").

[4] *See, e.g.*, *Whitman v. Am. Trucking Ass'ns, Inc.*, 531 U.S. 457, 471 (2001) (holding that "[t]he text of § 109(b), interpreted in its statutory and historical context and with appreciation for its importance to the … [statute] as a whole, unambiguously bars cost considerations from the NAAQS-setting process"); *Nat'l Lime Ass'n v. EPA*, 233 F.3d 625, 640 (D.C. Cir. 2000), *as amended on denial of reh'g* (Feb. 14, 2001) (noting that "cost may not influence the determination of a MACT floor" under Section 112, "which depends exclusively upon the emissions reductions achieved by the best-performing sources").

distinct mandates Congress set forth in the statute regarding the consideration (or not) of costs.[5] Under the proposed rule, the EPA would be obligated to prepare a lengthy "assessment of all benefits and costs" for an array of "regulatory options" before proposing or finalizing any air-quality regulation the Administrator deems "significant."[6] As the agency has acknowledged, the rule's requirements would even apply to actions in which the EPA is statutorily prohibited from taking economics into account.[7] This is unlawful. While the agency may prefer "that information regarding the benefits and costs of regulatory decisions is provided and considered in a consistent … manner[,]" the Supreme Court has rightly held that the EPA's "'preference for symmetry cannot trump an asymmetrical statute.'"[8]

The proposed rule is also arbitrary. In insisting that the "strength of scientific evidence should be strongest when … benefits are estimated[,]" as opposed to costs, the proposal promises to arbitrarily understate the importance of Clean Air Act protections and deny members of the public the protective "margin of safety" they are owed under the statute.[9] In relying on a "willingness to pay" approach to calculating benefits, the proposal threatens to further marginalize frontline communities that lack resources equal to their desire for air that's safe to breath.[10] And in focusing on the "net benefits" of air-quality regulations—their "potential to improve the aggregate well-being of society"—the proposal fails to consider whether benefits and burdens would be distributed in an equitable manner.[11]

In short, the proposed regulation is arbitrary, unjust, and unlawful. On behalf of our members and supporters, Earthjustice, California Communities Against Toxics, and Sierra Club urge the EPA to abandon it.

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[5] EPA, Notice of Proposed Rulemaking: Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process, 85 Fed. Reg. 35,612 (June 11, 2020).

[6] *Id.* at 35,612, 35,625-26 (proposed rule sections 83.1 and 83.3).

[7] *Id.* at 35,615.

[8] *Id.* at 35,612; *Michigan v. EPA*, 135 S. Ct. 2699, 2710 (2015) (quoting *CSX Transp., Inc. v. Ala. Dep't of Revenue,* 562 U.S. 277, 296 (2011)).

[9] Proposed Rule, 85 Fed. Reg. at 35,620; 42 U.S.C. § 7409(b)(1) (requiring that primary air-quality standards include "an adequate margin of safety").

[10] Proposed Rule, 85 Fed. Reg. at 35,619.

[11] *Id.* at 35,613-14.

II. The EPA does not have the authority to require cost-benefit analysis during all significant Clean Air Act rulemakings.

When implementing the Clean Air Act, the EPA is bound by the judgments that have been made by Congress.[12] As the D.C. Circuit has explained, the "EPA is a federal agency—a creature of statute. It has no constitutional or common law existence or authority, but only those authorities conferred upon it by Congress."[13] Given the limits of the EPA's powers, "when Congress directs … [the] agency to consider only certain factors in reaching an administrative decision, the agency is not free to trespass beyond the bounds of its statutory authority by taking other factors into account."[14]

Despite the proposed rule's suggestions to the contrary, the EPA's lack of authority to consider factors that weren't mentioned by Congress includes the question of regulatory costs.[15] Indeed, the Supreme Court itself has "refused to find implicit in ambiguous sections of the … [Clean Air Act] an authorization to consider costs that has elsewhere, and so often, been expressly granted."[16] In order to move forward with the proposed rule, then, the agency "must show a textual commitment of authority to the EPA to consider costs" in every Clean Air Act rulemaking the Administrator deems significant.[17] It cannot do so. As the Congressional Research

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[12] *See, e.g.*, *Lead Indus. Ass'n, Inc. v. EPA*, 647 F.2d 1130, 1150 (D.C. Cir. 1980) (noting that "[a] policy choice such as … [whether the EPA may consider costs] is one which only Congress, not the courts and not EPA, can make"). *See also, e.g.*, *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 208 (1988) ("It is axiomatic that an administrative agency's power to promulgate legislative regulations is limited to the authority delegated by Congress.").

[13] *Michigan v. EPA*, 268 F.3d 1075, 1081 (D.C. Cir. 2001).

[14] *Lead Indus. Ass'n*, 647 F.2d at 1150. *See also Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (noting that "an agency rule would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider").

[15] *See, e.g.*, Proposed Rule, 85 Fed. Reg. at 35,615 (asserting that "while certain statutory provisions may prohibit reliance on BCA or other methods of cost consideration in decision making, such provisions do not preclude the Agency from providing additional information regarding a proposed or final rule to the public").

[16] *Whitman*, 531 U.S. at 467-68.

[17] *See id.*

Service has noted, while "[t]he act requires or authorizes the … Administrator to promulgate regulations or set standards in more than 60 sections or subsections[,] … [i]n 25 of these sections or subsections, cost is not mentioned or implied as a factor to be considered."[18] And even where costs are mentioned, the statute often doesn't authorize the exhaustive assessment of costs, benefits, and regulatory alternatives that would be required under the proposed rule.[19]

The EPA has not even attempted to show how its proposal is authorized by, or consistent with, the language and purpose of each of the many statutory provisions onto which it would graft its cost-benefit mandate. Indeed, aside from a few of the Act's provisions, the EPA's proposal does not even mention any of the specific sections of the statute that the proposed rule would apply to, much less explain how its extensive cost-benefit analytical scheme is authorized by and consistent with each and every one of them. The proposal is completely untethered from the Clean Air Act's specific directives and expressions of congressional intent. As a result, the proposal is unlawful and arbitrary.[20]

A. The Clean Air Act prohibits the EPA from considering costs under numerous provisions that would be subject to the proposed rule.

The requirements of the proposed rule are irreconcilable with the Clean Air Act's provisions that prohibit the consideration of costs. In Section 109, for example, Congress directed the EPA to establish "[n]ational primary ambient air quality

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[18] CRS Report, *supra* note 2, at 1. The report's list of authorizing provisions that do not mention costs includes Sections 109(a), 109(b), 110(c)(1), 112(d)(2) and (3), 112(d)(2) and (3), 112(d)(8), 112(f), 112(k), 126(c), 129(a)(2), 166, 202(a), 202(j), 202(m), 211(i), 211(o), 219(c), 243, 328, 407(b)(1), 604(c), 605(c), 609, 610, and 615. *Id.* at 6-7.

[19] *See* Section II.B, *infra*.

[20] *Massachusetts v. EPA*, 549 U.S. 497, 532-33 (2007) (holding that the EPA's "reasons for action or inaction must conform to the authorizing statute[,]" and the agency cannot rely on reasoning "divorced from the statutory text"); *Cal. Cosmetology Coal. v. Riley*, 110 F.3d 1454, 1460 (9th Cir. 1997) (noting that a "regulation may not … add to the statute something which is not there") (internal quotations omitted); *Pascavage v. Office of Pers. Mgmt.*, 773 F. Supp. 2d 452, 459 (D. Del. 2011) ("[W]hen Congress has directly addressed an issue, an agency may not engraft additional conditions onto the statute.") (citing *Bureau of Alcohol, Tobacco and Firearms v. Fed. Labor Relations Auth.*, 464 U.S. 89 (1983)).

standards" for criteria pollutants at levels that "are requisite to protect the public health" with "an adequate margin of safety[.]"[21] As the Supreme Court observed in *Whitman v. American Trucking Associations*, this language "'is absolute.'"[22] Under it,

> [t]he EPA, "based on" the information about health effects contained in the technical "criteria" documents compiled under § 108(a)(2), … is to identify the maximum airborne concentration of a pollutant that the public health can tolerate, decrease the concentration to provide an "adequate" margin of safety, and set the standard at that level. Nowhere are the costs of achieving such a standard made part of that initial calculation.[23]

"The text of § 109(b)," in short, "interpreted in its statutory and historical context and with appreciation for its importance to the … [Clean Air Act] as a whole, unambiguously bars cost considerations from the NAAQS-setting process[.]"[24]

Given the critical importance of placing limits on hazardous air pollutants, Congress also included provisions in Section 112 that prohibit the EPA from considering costs. Under Section 112(d), standards for new and existing sources are generally required to provide for "the maximum degree of reduction in emissions of … hazardous air pollutants … that the Administrator … determines is achievable" after "taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements[.]"[25] The statute, however, sets a floor: under Section 112(d)(3), the EPA's standards may "not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Administrator."[26] "Cost," in other words, "may be taken into account only in considering beyond-the-floor emissions limitations"; it "may not influence the

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[21] 42 U.S.C. § 7409(b)(1).

[22] 531 U.S. at 465 (quoting D. Currie, Air Pollution: Federal Law and Analysis 4-15 (1981)).

[23] *Id.*

[24] *Id.* at 471; *id.* at 471 n.3 (concluding that the EPA is similarly barred from "consider[ing] implementation costs in setting the secondary NAAQS").

[25] 42 U.S.C. § 7412(d)(2).

[26] *Id.* § 7412(d)(3).

determination of … [the] floor, which depends exclusively upon the emissions reductions achieved by the best-performing sources."[27] (Notably, this approach to costs was also incorporated into the statute's specific achievability standards for solid-waste-incineration units.)[28]

Section 112's coke-oven provisions also cabin the EPA's consideration of costs.[29] As a general matter, when establishing emission standards for coke ovens, the Administrator must consider a number of emission-limiting practices and technologies in light of their costs and other factors.[30] Section 112(d)(8), however, ultimately "require[s] at a minimum that coke oven batteries will not exceed 8 per centum leaking doors, 1 per centum leaking lids, 5 per centum leaking offtakes, and 16 seconds visible emissions per charge, with no exclusion for emissions during the period after the closing of self-sealing oven doors."[31] Here, again, costs can only be considered when the EPA is determining whether to impose limitations in excess of the statutory minimums established by Congress.[32]

In directing the EPA to determine which stationary sources must be regulated under Section 112's standards, Congress also placed limits on the consideration of costs. According to the Supreme Court's decision in *Michigan v. EPA*, the agency "must consider cost—including, most importantly, cost of compliance—before deciding whether regulation [of power plants] is appropriate

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[27] *Nat'l Lime Ass'n*, 233 F.3d at 640.

[28] *See* 42 U.S.C. § 7429(a)(2) (providing that "[t]he degree of reduction in emissions that is deemed achievable for new [solid-waste-incineration] units … shall not be less stringent than the emissions control that is achieved in practice by the best controlled similar unit, as determined by the Administrator"); *Med. Waste Inst. and Energy Recovery Council v. EPA*, 645 F.3d 420, 426 (D.C. Cir. 2011) (noting that "the floor-setting that is the initial step in establishing emissions standards" for incineration units "does not" require consideration of costs).

[29] 42 U.S.C. § 7412(d)(8)(A).

[30] *Id.*

[31] *Id.*

[32] *Id.*

and necessary" under Section 112(n)(1)(A).[33] As the Court emphasized, however, the Clean Air Act "treat[s] power plants *differently* from other stationary sources":

> Congress crafted narrow standards for … [the agency] to apply when deciding whether to regulate other sources; in general, these standards concern the volume of pollution emitted by the source, … and the threat posed by the source "to human health or the environment[.]"[34]

In other words, except with respect to power plants, the agency is barred from considering costs when determining which source categories require regulation under Section 112.[35]

Another Clean Air Act provision that bars consideration of costs is Section 165(e)'s requirement for at least one year of ambient air-quality monitoring prior to an application for a PSD permit.[36] The D.C. Circuit has ruled that this is a rigid mandate that cannot be relaxed or modified based on cost-benefit considerations, as EPA attempted to do by rule.[37]

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[33] 135 S. Ct. at 2711 (adding that "[w]e need not and do not hold that the law unambiguously required the Agency, when making this preliminary estimate, to conduct a formal cost-benefit analysis in which each advantage and disadvantage is assigned a monetary value").

[34] *Id.* at 2710 (emphasis in original) (citing 42 U.S.C. §§ 7412(c)(1), 7412(c)(3)).

[35] *See* 42 U.S.C. 7412(c)(1) (directing the Administrator to "publish, and … from time to time … revise, … a list of all categories and subcategories of major sources and area sources … of … [hazardous] air pollutants"); *id.* § 7412(a)(1)-(2) (defining "major source" as one "that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants[,]" and "area source" as "any stationary source of hazardous air pollutants that is not a major source"); *id.* § 7412(c)(3) (directing the Administrator to "list … each category or subcategory of area sources which the Administrator finds presents a threat of adverse effects to human health or the environment (by such sources individually or in the aggregate) warranting regulation" under Section 112).

[36] *Id.* § 7475(e).

[37] *Sierra Club v. EPA*, 705 F.3d 458, 467-69 (D.C. Cir. 2013) ("To authorize the EPA to exempt the plain requirement of preconstruction monitoring … would allow the EPA to engage in an impermissible cost-benefit analysis.").

Section 202(a)(1) of the Act requires the EPA's Administrator to "by regulation prescribe … standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in … [the Administrator's] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare."[38] The cost of compliance is not a permissible factor for consideration in the Administrator's determination of whether an air pollutant causes or contributes to air pollution which may reasonably be anticipated to endanger public health or welfare.[39] The same is true under Section 111(b)(1)(A), which requires the agency to identify categories of stationary sources that "cause[], or contribute[] significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare[,]" thus requiring standards of performance to limit their emissions.[40] Yet again, the Administrator must identify such source categories without regard to costs.

The above are only a few examples of specific provisions that foreclose cost-benefit analysis.[41] Others are cited in the Congressional Research Service analysis that is attached and incorporated by reference.[42]

Despite the clear prohibitions on the consideration of costs in provisions like those outlined above, the proposed rule would require the EPA to prepare an exhaustive analysis of regulatory costs and benefits during every "significant" rulemaking under the Clean Air Act—without regard to statutory standards.[43] According to the proposal, this shouldn't be a problem. While admitting that "certain statutory provisions may prohibit reliance on … [cost-benefit analysis] or other methods of cost consideration in decision making," the proposal declares that

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[38] 42 U.S.C. § 7521(a)(1).

[39] *Massachusetts,* 549 U.S. at 532-533; *Coal. for Responsible Regulation v. EPA*, 684 F.3d 102, 117-19 (D.C. Cir. 2012), *aff'd in part & rev'd in part on other grounds, Utility Air Regulatory Group v. EPA*, 573 U.S. 302 (2014).

[40] 42 U.S.C. § 7411(b)(1)(A).

[41] Another example is the Act's bar on consideration of economic feasibility in deciding whether to approve or disapprove a state implementation plan under 42 U.S.C. §7410. *Union Electric Co. v. EPA*, 427 U.S. 246, 265 (1976) (holding that Congress intended economic and technological infeasibility to be irrelevant to the Administrator's consideration of a state implementation plan).

[42] CRS Report, *supra* note 2, at 4-7.

[43] 85 Fed. Reg. at 35,615.

"such provisions do not preclude the Agency from providing additional information regarding a proposed or final rule to the public[,]" and that the EPA's own use of its cost-benefit analyses "would be determined by the statutes and regulations governing particular subsequent rulemakings."[44]

The proposal's assurances to the contrary aside, there can be no doubt that the actual purpose of the proposed rule is to influence the EPA's decisionmaking process when implementing the Clean Air Act. The notion that the EPA could somehow engage in cost-benefit analysis without unlawfully considering costs cannot be taken seriously. It also disregards the very design of the proposed regulation. Under the rule, the EPA would be required to assess a range of "regulatory options" on the basis of their calculated costs and benefits—even when the relevant statutory provision prohibits the consideration of costs.[45] The agency would then have to present a summary of its analysis—"including total costs, benefits, and net benefits"—"in the preamble" of its proposed and final rules.[46] The results of the agency's economic assessments, in other words, would have to be incorporated into the text of actions for which costs cannot be considered. It is difficult to imagine more open defiance of the Clean Air Act's mandates.[47]

In attempting to justify this defiance, the EPA points to its own past practice. According to the proposal, "while the … [Clean Air Act] prohibits the EPA from considering cost when establishing requisite National Ambient Air Quality Standards … for criteria pollutants, the EPA nonetheless provides Regulatory Impact Analyses … to the public for these rulemakings."[48] The fact that the agency

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[44] *Id.* (acknowledging that the information produced under the requirements of the proposed rule "would be in addition to the information provided by other methodologies and analyses as directed by specific … statutes and regulations").

[45] *Id.* at 35,618 (declaring that "[t]he key elements of a rigorous regulatory … [cost-benefit analysis] include: (1) A statement of need; (2) an examination of regulatory options; and (3) to the extent feasible, an assessment of all benefits and costs of these regulatory options relative to the baseline (no action) scenario").

[46] *Id.* at 35,622. *See also id. at* 35,627 (Proposed Rule Section 83.4) (setting forth the "presentation" requirements of the proposed rule).

[47] *See Whitman*, 531 U.S. at 471 n.4 (noting that even a concealed act of defiance—"secretly considering … costs … without telling anyone"—"would be grounds for vacating" an air-quality standard, "because the Administrator had not followed the law").

[48] *Id.* at 35,615 (internal citations omitted).

has done something before, however, does not make it lawful.[49] Though the proposal also argues, incorrectly, that the rule's requirements would be good policy—a means of "increas[ing] transparency and consistency across" Clean Air Act rulemakings—the Supreme Court has confirmed that the EPA's "'preference for symmetry cannot trump an asymmetrical statute.'"[50]

Because the requirements of the proposed rule are at odds with the Clean Air Act's provisions that bar the EPA from considering costs, the regulation must be abandoned.[51]

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[49] *See, e.g.*, *Judulang v. Holder*, 565 U.S. 42, 61 (2011) ("Arbitrary agency action becomes no less so by simple dint of repetition .... And longstanding capriciousness receives no special exemption from the APA."); *Southeast Ala. Med. Ctr. v. Sebelius*, 572 F.3d 912, 920 (D.C. Cir. 2009) ("[N]o amount of historical consistency can transmute an unreasoned statutory interpretation into a reasoned one."); *F.J. Vollmer Co. v. Magaw*, 102 F.3d 591, 598 (D.C. Cir. 1996) ("[W]e do not see how merely applying an unreasonable statutory interpretation for several years can transform it into a reasonable interpretation."). The proposed rule, moreover, goes beyond regulatory impact analyses: it would require the EPA not only to *present* the costs and benefits of its actions—the primary purpose of an impact analysis—but to *justify* those costs and benefits in light of other regulatory alternatives. *See, e.g.*, Proposed Rule, 85 Fed. Reg. at 35,626.

[50] Proposed Rule, 85 Fed. Reg. at 35,612; *Michigan*, 135 S. Ct. at 2710 (quoting *CSX Transp., Inc.*, 562 U.S. at 296).

[51] The cases cited in the EPA's proposal are not to the contrary. *See* Proposed Rule, 85 Fed. Reg. at 35,615-17. While the Supreme Court has concluded that cost-benefit analysis can sometimes be allowed under statutes that do not expressly require it, *Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208, 223 (2009) (interpreting Clean Water Act Section 316(b)), the Court has also made clear that costs cannot be considered where Congress has required the EPA to rely on other factors. *See, e.g.*, *Whitman*, 531 U.S. at 471 (interpreting Clean Air Act Section 109); *Entergy Corp.*, 556 U.S. at 223 (reaffirming *Whitman*). And the fact that some "lower courts have noted the usefulness" of cost-benefit analysis, moreover, says nothing about whether such an analysis is legally permissible in a particular rulemaking. Proposed Rule, 85 Fed. Reg. at 35,616. The question, ultimately, is what the relevant statutory provisions allow—and the proposed rule ignores what the Clean Air Act's provisions allow.

B. The proposed rule's requirements would also violate the Clean Air Act provisions calling for a more limited consideration of costs.

The conflict between the proposed rule and the Clean Air Act is not limited to the statute's provisions that entirely prohibit the consideration of costs. Even where Congress has allowed the EPA to take costs into account, it has often called for a more narrow inquiry than a formalized cost-benefit analysis would entail. The proposed rule ignores these limitations as well.

An example of a provision that authorizes the EPA to engage in a limited evaluation of costs is Section 245, which allows the EPA to "promulgate a revised less stringent standard" for heavy-duty clean-fuel vehicles or engines "if the Administrator determines that the 50 percent reduction [otherwise] required … is not technologically feasible … , taking into account durability, costs, lead time, safety, and other relevant factors."[52] The statute's repeated calls for "achievable" emissions reductions place similar constraints on the consideration of costs. Under Section 173, for example, new sources in nonattainment areas are "required to comply with the lowest achievable emission rate[,]" which Congress defined as the rate of emissions that equals either "the most stringent emission limitation which is contained in the implementation plan of any State … , unless the owner or operator of the … source demonstrates that such limitations are not achievable," or "the most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent."[53]

As the D.C. Circuit has noted, Congress itself "stressed that cost factors … [a]re not to play as important a role" in determining the "lowest achievable emission rate" as they do under other sections of the statute.[54] In the words of the conference committee's report, when "determining whether an emission rate is achievable, cost will have to be taken into account, but cost factors in the nonattainment context will have somewhat less weight than in determining new source performance standards[.]"[55] There was good reason for this. As Senator Edmund Muskie

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[52] 42 U.S.C. § 7585(b)(1).

[53] *Id.* §§ 7501(3); 7503(a)(2).

[54] *Sierra Club v. Costle*, 657 F.2d 298, 330 (D.C. Cir. 1981).

[55] *Id.* at 330 n.107 (quoting H.R. Rep. Conf. No. 95-564, 95th Cong., 2d Sess. (1977), at 157).

explained in introducing the legislation, a broader grant of discretion to consider costs would be "inappropriate" in areas "where public health is at risk[.]"[56]

The Clean Air Act's call for "economic impact assessments" also reflects a more narrow approach to the consideration of costs.[57] Under Section 317, which goes unmentioned in the proposed rule, the EPA is required to prepare economic assessments before proposing a variety of regulations for which costs are a relevant consideration—among them, new source performance standards under Section 111(b); standards of performance for existing sources under Section 111(d); motor-vehicle standards under Section 202; and aircraft standards under Section 231.[58] Notably, Section 317 does not direct the EPA to prepare an exhaustive quantification of regulatory costs and benefits. Instead, it requires a more modest evaluation of the "costs of compliance" and similar economic considerations.[59] It also makes clear that the EPA's economic assessments need only "be as extensive as practicable, … taking into account the time and resources available" to the agency.[60]

To be sure, Congress does know what cost-benefit analysis is. And it knows how to require such an analysis when it wants one. With Section 812 of the Clean Air Act, for example, Congress directed the EPA to prepare "a comprehensive analysis of the [statute's] impact … on the public health, economy, and environment of the United States"—an analysis that "consider[ed] the costs, benefits and other effects" of the statute's various standards.[61] Congress further specified what it

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[56] *Id.* (internal quotations omitted) (quoting 123 Cong. Rec. 18,018 (1977)).

[57] 42 U.S.C. § 7617.

[58] *Id.* §§ 7617(a)-(b).

[59] *Id.* § 7617(c) (providing that "the assessment required … shall contain an analysis of … the costs of compliance … ; … the potential inflationary or recessionary effects of the standard or regulation; … the effects on competition of the standard or regulation with respect to small business; … the effects of the standard or regulation on consumer costs; and … the effects of the standard or regulation on energy use").

[60] *Id.* § 7617(d).

[61] *Id.* § 7612(a). *See also, e.g.*, *id.* § 7403(j)(3)(B)(iii) (calling for an "analysis of the costs, benefits, and effectiveness of the acid deposition control program"); *id.* § 7545(c)(2)(B) (providing that "[n]o fuel or fuel additive may be controlled or prohibited … except after consideration of available scientific and economic data, including a cost benefit analysis comparing emission control devices or systems which are or will be in general use").

meant by "costs" and "benefits."[62] With respect to benefits, Section 812 declared that the EPA should consider:

> all of the economic, public health, and environmental benefits of efforts to comply with ... [the Clean Air Act's] standard[s]. In any case where numerical values [we]re assigned to such benefits, a default assumption of zero value ... [was] not [to] be assigned ... unless supported by specific data. The ... [agency was also required to] assess how benefits ... [were] measured in order to assure that damage to human health and the environment ... [was] more accurately measured and taken into account.[63]

As to costs, Congress directed the EPA to "consider the effects of ... [the statute's] standard[s] on employment, productivity, cost of living, economic growth, and the overall economy of the United States."[64] Ultimately, Section 812 required the EPA to "submit a report to ... Congress" that addressed "all costs incurred previous to November 15, 1990, in the effort to comply" with the Clean Air Act's standards, and "all benefits that have accrued to the United States as a result of such costs."[65]

The design of Section 812's cost-benefit requirements underscores the remarkable—and unlawful—overreach of the proposed rule. Under Section 812, the EPA was obligated to provide Congress with a report analyzing the costs and benefits of the Clean Air Act—a report that Congress could use in reevaluating, as a matter of policy, what protections the statute should afford.[66] Under the proposed rule, in contrast, the EPA would be required to engage in cost-benefit analysis so as to decide—for itself, during each and every "significant" rulemaking—whether there is a "compelling need for federal government intervention in the market[,]" and

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[62] *Id.* §§ 7612(b)-(c).

[63] *Id.* § 7612(b).

[64] *Id.* § 7612(c).

[65] *Id.* § 7612(d). The EPA concluded its retrospective report regarding the Clean Air Act's costs and benefits on October 15, 1997; two prospective studies were later published on November 15, 1999 and March 1, 2011. *See* EPA, Benefits and Costs of the Clean Air Act, *available at* https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act.

[66] *See* 42 U.S.C. § 7612(d).

whether the benefits of various "regulatory options" justify their costs.[67] This goes too far. Where the Clean Air Act requires the EPA to regulate with only limited consideration of costs—or with no consideration at all—Congress has already decided that "federal government intervention in the market" is necessary to abate air pollution and protect the public's well-being.[68] As the EPA has no authority to second-guess Congress's judgment in these instances, the proposed rule must be withdrawn.

Finally, the EPA has no authority to add extensive cost-benefit analytical requirements that would be so time-consuming as to prevent the agency from meeting statutory deadlines for proposing and finalizing rules. The EPA cannot impose mandates on itself that Congress has not imposed, or in many cases not even authorized, and then later plead that its failure to meet statutory deadlines is due to those self-imposed mandates. In this regard, it is also arbitrary for the EPA to impose the extensive cost-benefit mandates it has proposed without even considering the time and cost that this analysis (and the accompanying notice and comment) will impose on the EPA itself, and the potential for delaying critically needed public-health protections. Nor does the EPA consider the time and expense to the agency and its staff from having to defend the validity of its cost-benefit analyses, both administratively and potentially in court. The proposal's stated concern with cost seems remarkably and arbitrarily indifferent to the expense it will impose on the agency, and the time and resources that it will divert from the EPA's core obligation to protect public health and the environment.

C. The EPA has failed to undertake the section-by-section analysis required to determine when and how cost-benefit analysis can be mandated.

The EPA's failure to confront the illegality and arbitrariness of requiring cost-benefit analysis under Clean Air Act provisions like those discussed above points to a broader flaw in this proposed rulemaking: the agency's failure to evaluate whether cost-benefit analysis is authorized by, and consistent with, the

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[67] 85 Fed. Reg. at 35,618 (declaring that "[t]he key elements of a rigorous regulatory … [cost-benefit analysis] include: (1) A statement of need; (2) an examination of regulatory options; and (3) to the extent feasible, an assessment of all benefits and costs of these regulatory options relative to the baseline (no action) scenario").

[68] *See id.*

language and purpose of each section of the statute that would be subject to the proposal's requirements.[69]

The Supreme Court has made clear that a determination of whether the EPA can consider costs—and if so, how—requires an analysis of each statutory section's language and context. To that end, the agency "must show a textual commitment of authority to the EPA to consider costs[.]"[70] As the Court has explained, if Congress directs the EPA to "regulate on the basis of a factor that on its face does not include cost, the Act normally should not be read as implicitly allowing the agency to consider cost anyway."[71] Nor is it the case, as the EPA wrongly seems to assume, that a section's use of terms such as "appropriate," "necessary," "reasonable," "requisite," or "adequate" automatically authorizes the consideration of costs.[72] In *Michigan v. EPA*, the Supreme Court cautioned that its reading of "appropriate and necessary" was dependent on the statutory context, explaining that "[t]here are undoubtedly settings in which the phrase 'appropriate and necessary' does not encompass cost."[73]

The proposed rulemaking unlawfully and arbitrarily flouts these principles. The EPA has failed to provide section-specific evaluations of whether and how each affected provision and its context allows for consideration of costs and, where cost consideration is permitted, whether imposing a cost-benefit requirement is consistent that section's language and purpose. Instead, the EPA proposes to force a cost-benefit mandate on every provision of the Clean Air Act that could be used to authorize a significant rule without having first conducted the section-specific analyses and demonstration that Supreme Court and D.C. Circuit precedent require.[74] Such an approach is unlawful and arbitrary. The EPA's policy preference

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[69] *See* Sections II.A and II.B, *supra*.

[70] *Whitman*, 531 U.S. at 468.

[71] *Michigan*, 135 S.Ct. at 2709 (citations omitted).

[72] *See Murray Energy Corp. v. EPA*, 936 F.3d 597, 621-22 (D.C. Cir. 2019); *Utility Solid Waste Activities Group v. EPA*, 901 F.3d 414, 448 (D.C. Cir. 2018).

[73] 135 S. Ct. at 2707.

[74] *Massachusetts*, 549 U.S. at 532-33 (holding that the EPA's "reasons for action or inaction must conform to the authorizing statute" and the agency cannot rely on reasoning "divorced from the statutory text"); *Sierra Club v. EPA*, 705 F.3d 458, 469 (D.C. Cir. 2013) ("To engage in cost-benefit decisions, the EPA's implied authority 'must be based not on a general doctrine but on a fair reading of the specific statute, its aims and legislative history.'").

for cost-benefit analysis does not grant the agency authority to disregard specific statutory directives, purposes, and context.

D. The Clean Air Act's general rulemaking provision does not provide the EPA with authority to adopt the proposed cost-benefit requirements.

Tellingly, the proposed rule ignores Section 812 and every other Clean Air Act provision that actually mentions cost-benefit analysis. In addressing the EPA's authority to enact a cost-benefit requirement, the proposal instead focuses on Section 301(a)(1), which authorizes the Administrator "to prescribe such regulations as are necessary to carry out … [the Administrator's] functions" under the statute.[75] As the D.C. Circuit has emphasized, however, this language does not "'provide [EPA] Carte blanche authority to promulgate any rules, on any matter relating to the Clean Air Act, in any manner that the [EPA] wishes."[76] Instead, it authorizes only those regulations that are, in fact, "necessary" to implement the statute.[77]

Not only is the proposed rule not "necessary" to implement the Clean Air Act, it directly contradicts the statute in numerous regards, as noted above.[78] The EPA has also managed to fulfill its obligations under the Act without the proposed regulation for nearly fifty years, which further undermines any claim of necessity.

As Congress has not given the EPA authority to adopt the proposed rule, it must be withdrawn.

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[75] 42 U.S.C. § 7601(a)(1).

[76] *North Carolina v. EPA*, 531 F.3d 896, 922 (D.C. Cir.), *on reh'g in part*, 550 F.3d 1176 (D.C. Cir. 2008) (alterations in original) (quoting *Citizens to Save Spencer County v. EPA*, 600 F.2d 844, 873 (D.C. Cir. 1979)). *See also, e.g.*, *WildEarth Guardians v. EPA*, 830 F.3d 529, 539 (D.C. Cir. 2016) (noting that the "'EPA cannot rely on its gap-filling authority to supplement the Clean Air Act's provisions when Congress has not left the agency a gap to fill'") (quoting *Natural Res. Def. Council v. EPA*, 749 F.3d 1055, 1063-64 (D.C. Cir. 2014)).

[77] 42 U.S.C. § 7601(a)(1).

[78] *See In re Permanent Surface Min. Regulation Litig.*, 653 F.2d 514, 523 (D.C. Cir. 1981) (noting that regulations adopted pursuant to a statute's general grant of rulemaking authority "must not be arbitrary, capricious, or inconsistent with the Act" they purport to implement).

E. The proposed rule is not an internal measure exempt from notice and comment.

Though the EPA is soliciting comments on the proposed cost-benefit requirements, it has also declared that the rule involves nothing more than "agency organization, procedure or practice" and is accordingly "exempt from the notice and comment requirements set forth in the Administrative Procedure Act."[79] This is incorrect. As the D.C. Circuit has emphasized, the exceptions to notice and comment are to be "'narrowly construed and only reluctantly countenanced.'"[80] In the words of the court:

> Advance notice and public participation are required for those actions that carry the force of law. These "legislative" or "substantive" rules can be issued only if Congress has delegated to the agency the power to promulgate binding regulations in the relevant area. Legislative rules thus implement congressional intent; they effectuate statutory purposes. In so doing, they grant rights, impose obligations, or produce other significant effects on private interests. They also narrowly constrict the discretion of agency officials by largely determining the issue addressed.[81]

Unlike legislative rules, the "[n]on-binding action[s]" that are exempt from notice and comment "merely express[] an agency's interpretation, policy, or internal practice or procedure."[82]

> Such actions or statements are not determinative of issues or rights addressed. They express the agency's intended course of action, its tentative view of the meaning of a particular statutory term, or internal house-keeping measures organizing agency activities. They do not,

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[79] Proposed Rule, 85 Fed. Reg. at 35,613 (citing 5 U.S.C. § 553(b)(A)).

[80] *Am. Fed'n of Gov't Emp., AFL-CIO v. Block*, 655 F.2d 1153, 1156 (D.C. Cir. 1981) (quoting *State of New Jersey, Dep't of Envtl. Prot. v. EPA*, 626 F.2d 1038, 1045 (D.C. Cir. 1980)).

[81] *Batterton v. Marshall*, 648 F.2d 694, 701-02 (D.C. Cir. 1980) (cited in Proposed Rule, 85 Fed. Reg. at 35,613).

[82] *Id.* at 702.

> however, foreclose alternate courses of action or conclusively affect rights of private parties.[83]

The EPA's own preamble makes clear that the proposed rule is a binding, legislative action subject to notice and comment. If the rule is finalized, the EPA will be obligated to prepare cost-benefit analyses that are not currently required (or even allowed).[84] The agency's discretion, in other words, would be significantly limited as a result of the action.[85] The proposed rule would also significantly affect the public. As explained below, the rule mandates an analytical approach that will understate the importance of Clean Air Act protections, and accordingly serve to justify actions that weaken or eliminate them. It could also arbitrarily limit the kinds of scientific studies that members of the public could submit in an effort to demonstrate the benefits of a particular action.[86] In short, while the EPA was right to request comments on the proposed rule, it was wrong in declaring that the rule is exempt from the notice-and-comment requirements of the APA.[87] Further, given that the proposed rule seeks to impose requirements on rulemaking under statutes governed by 42 U.S.C. § 7607(d), notice-and-comment rulemaking is also required under that provision, and subject to the other detailed requirements it specifies.

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[83] *Id.*

[84] Proposed Rule, 85 Fed. Reg. at 35,625-26 (establishing the proposed requirements for cost-benefit analysis).

[85] *Batterton*, 648 F.2d at 702 (noting that notice and comment is required when a rule "narrowly constrict[s] the discretion of agency officials by largely determining the issue addressed").

[86] Proposed Rule, 85 Fed. Reg. at 35,620-21; *Batterton*, 648 F.2d at 708 (noting that an "agency action trenches on substantial private rights and interests[,]" and accordingly requires notice and comment, when it subjects "drug producers … to new specifications for the kinds of clinical investigations deemed necessary to establish the effectiveness of drug products prior to FDA approval") (citing *Pharmaceutical Mfrs. Ass'n v. Finch*, 307 F. Supp. 858, 863 (D. Del. 1970)).

[87] *See* Proposed Rule, 85 Fed. Reg. at 35,613 (asserting that the EPA "voluntarily seeks comment because it believes that the information and opinions supplied by the public will inform the Agency's views").

III. The proposed rule's arbitrary approach to quantifying costs and benefits will diminish the importance of Clean Air Act protections at the expense of the frontline communities that are disproportionately exposed to air pollution.

As the EPA tells it, the proposed cost-benefit requirements are simply good government. "High quality economic analyses[,]" the agency argues, "enhance the effectiveness of environmental policy decisions by providing policy makers and the public with information needed to systematically assess the likely consequences of various actions or options."[88] The proposed rule, however, actually promises to obscure the importance of Clean Air Act protections. Under the regulation, the EPA's cost-benefit analyses would likely understate the benefits of clean air while overstating the costs of pollution limits. And in focusing on the "net benefits" of air-quality regulations, the proposed rule would ignore the disproportionate harms that have long fallen on the nation's frontline communities.[89]

A. The proposal's reliance on "willingness to pay" estimates will arbitrarily reduce benefits calculations and devalue the well-being of low-income communities.

The proposed regulation relies on a troubling method of converting the Clean Air Act's "social benefits" into dollars.[90] Under the rule, the EPA would monetize the value of air-quality protections by estimating how much people would be willing to pay for them.[91] As Professor Lisa Heinzerling has noted, however, "[i]n trying to assess the wisdom of public policies by considering private 'willingness to pay,' cost-benefit analysis inevitably must fail."[92]

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[88] *Id.* at 35,613.

[89] *See id.*

[90] *Id.* at 35,619.

[91] *Id.* (asserting that "[w]illingness to pay … is the correct measure" of "social benefits" and "social costs[,]" and that a cost-benefit analysis "must include a robust explanation" for any decision to rely on a different methodology).

[92] Lisa Heinzerling, *Markets for Arsenic*, 90 Geo. L.J. 2311, 2313 (2002). *See also, e.g.*, Amartya Sen, *The Discipline of Cost-Benefit Analysis*, 29 J. Legal Stud. 931, 949 (2000) (noting that "[t]he very idea … [we] treat the prevention of … environmental damage just like buying a private good is itself quite absurd").

Though the proposed rule doesn't mention it, the amount that people are willing to pay for things is determined by the amount of money they have. As a result, the EPA's "willingness to pay" standard "inherently gives more weight to those with bigger budgets."[93] If the "benefits" of pollution limits are determined based on the wealth of the people they protect, any regulation that safeguards low-income communities will be devalued—making it more likely that air-quality protections will be weakened or eliminated in light of compliance costs. The EPA's approach to cost-benefit analysis thus "ensures that risks will be unevenly distributed; indeed, it condones uneven distribution."[94] Such a profoundly inequitable methodology is arbitrary in the extreme and is unsupported by any provision of the Clean Air Act. Indeed, the fundamental purpose of the statute is to "promote the *public* health and welfare"—not just the health and welfare of the wealthy.[95]

The problems with the proposal's reliance on "willingness to pay" calculations run deeper. By rejecting the "willingness to accept" approach, for instance, the proposed rule would further suppress benefits estimates.[96] Under the "willingness to accept" approach, the EPA would instead assess how much people would demand to be paid in order to give up the benefits of specific air-quality protections.[97] The difference between a person's "willingness to accept" and "willingness to pay" can be significant. As Professor Thomas McGarity has explained:

> [w]hen converted to dollars, the willingness-to-accept measure invariably yields much larger values … [than] the willingness-to-pay measure. People have limited resources to draw upon in deciding how much they can pay to reduce

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[93] Henry S. Richardson, *The Stupidity of the Cost-Benefit Standard*, 29 J. Legal Stud. 971, 973 (2000).

[94] Heinzerling, *supra* note 92, at 2322.

[95] 42 U.S.C. § 7401(b)(1) (emphasis added).

[96] Proposed Rule, 85 Fed. Reg. at 35,619 n.27 (rejecting the "willingness to accept" approach as less measurable).

[97] *See id.* (noting that "an individual's 'willingness-to-accept' … compensation for not receiving the improvement can also provide a valid measure of opportunity cost").

> risks, but there is no limit to the amount that they can demand to accept those risks.[98]

Given that the Clean Air Act grants members of the public a right to air that's safe to breathe, moreover, it is the "willingness to accept" approach that would most accurately reflect the relevant legal entitlements.[99]

Ultimately, the proposed rule's focus on people's "willingness to pay" is simply "a crazy way to value [a] collective good[]" like clean air.[100] In the words of Professor Heinzerling, "[e]ven if individuals are asked to state their willingness to pay based on an assumption that others will be willing to pay the same amount, they are not able to consult other people about the reasons underlying their willingness to pay and thus cannot engage in the process of reason-giving and deliberation that marks rational decisionmaking."[101] The "willingness to pay" approach also ignores the fact that people often look to government to guide, or even override, their individual preferences.[102] The Clean Air Act reflects our collective commitment to human health and welfare.[103] The proposed rule would arbitrarily undermine this commitment—along with the agency's own expertise—by relying on

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[98] Thomas McGarity, *Professor Sunstein's Fuzzy Math*, 90 Geo. L.J. 2341, 2370 (2002). *See also* Heinzerling, *supra* note 92, at 2317.

[99] *See, e.g.*, 42 U.S.C. § 7409(b)(1) (requiring the EPA to establish "[n]ational primary ambient air quality standards" that are "requisite to protect the public health" with "an adequate margin of safety"). *See also* Heinzerling, *supra* note 92, at 2332 (noting that federal health standards can influence private preferences, and that the "divergence between preferences as they exist before regulation and preferences as they exist after regulation makes it highly problematic to justify regulatory inaction by reference to preregulation willingness to pay").

[100] Heinzerling, *supra* note 92, at 2331.

[101] *Id.*

[102] *Id.* (noting that there are many reasons "people may want the government to interfere with their own private preferences[,]" and that "sometimes people are smart enough—or rational enough—to know when they need help").

[103] 42 U.S.C. § 7409(b) (establishing protections for "public health" and "public welfare").

assessments of individuals' "willingness to pay" for certain air-quality protections.[104]

B. The proposed rule's arbitrary limits on the use of scientific studies will also undermine the EPA's benefits calculations.

The proposed regulation promises to further reduce the EPA's benefits calculations by placing arbitrary limitations on the scientific studies the agency may use in assessing the health and welfare implications of air-quality protections.[105] According to the proposal, the "strength of scientific evidence should be strongest when … benefits are estimated" as "information anticipated to have a higher impact must be held to higher standards of quality."[106] This arbitrary approach to benefits, however, would turn the Clean Air Act on its head, subjecting public-health protections to a heightened standard of proof rather than ensuring they provide an "adequate margin of safety."[107] It would also give costs an unreasonable advantage in the EPA's cost-benefit analyses, making it more likely that the agency would weaken or eliminate existing air-quality protections, adopt inadequate new protections, or refuse to regulate in the first place, all on account of costs.

The proposed rule's restrictions on the use of scientific studies, of course, are not new. More than two years ago, the EPA issued the first of two proposals aimed

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[104] Heinzerling, *supra* note 92, at 2330 (noting that people's "irrational impulses" as "intuitive toxicologists" also drive "the market decisions on which cost-benefit analysis relies").

[105] Proposed Rule, 85 Fed. Reg. at 35,620-21 (providing that the EPA would be limited to using "studies that satisfied the following minimum standards: (1) The study was externally and independently peer-reviewed consistent with Federal guidance; (2) the pollutant analyzed in the study matches the pollutant of interest in the regulation; (3) concentration-response functions must be parameterized from scientifically robust studies; and (4) when an epidemiological study is used, further criteria include: (a) It must assess the influence of confounders; (b) the study location must be appropriately matched to the analysis; and (c) the study population characteristics must be sufficiently similar to those of the analysis"); *id.* at 35,622 (proposing to require making "the information (including data and models) that was used in the development of … [an analysis] publicly available").

[106] *Id.* at 35,620.

[107] *See* 42 U.S.C. § 7409(b)(1) (providing that primary NAAQS must be "requisite to protect the public health" with "an adequate margin of safety").

at placing similar limits on its use of scientific research—epidemiological studies, in particular.[108] As we noted in comments opposing that proposal, comments we attach here, such requirements would "exclude critical … scientific studies—the very studies that have been instrumental in setting pollution limits that save hundreds of thousands of lives[.]"[109] Accordingly, the proposed rule's restrictions on the use of scientific studies are illegal and arbitrary.

C. The proposed rule's arbitrary efforts to diminish the significance of co-benefits will further compromise the EPA's benefits calculations.

In his statements to the press, Administrator Wheeler has suggested that the proposed regulation may be used to disregard "co-benefits"—benefits that are ancillary to the primary purpose of an action, such as the reduction in conventional pollution that typically results from rules that limit greenhouse-gas emissions.[110] While the proposal does not expressly prohibit the consideration of co-benefits, it would require the EPA "to clearly distinguish between the social benefits attributable to the specific pollution reductions or other environmental quality goals that are targeted by the statutory provisions that give rise to the regulation [under review], and other welfare effects[.]"[111] The proposal's science provisions would also limit the EPA to studies in which "[t]he pollutant analyzed … matches the pollutant

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[108] EPA, Proposed Rule: Strengthening Transparency in Regulatory Science, 83 Fed. Reg. 18,768 (Apr. 30, 2018); EPA, Supplemental Notice of Proposed Rulemaking, 85 Fed. Reg. 15,396 (Mar. 18, 2020).

[109] Comments of 88 Environmental, Farmworker, Environmental Justice, Public Health, and Animal Protection Organizations on Proposed Regulations on "Transparency" in Regulatory Science (Aug. 15, 2018) (attached), at 1. *See also* Comments on the Environmental Protection Agency's "Strengthening Transparency in Regulatory Science" Supplemental Notice of Proposed Rulemaking (May 18, 2020) (attached).

[110] Coral Davenport and Lisa Friedman, *Trump, Citing Pandemic, Moves to Weaken Two Key Environmental Protections*, N.Y. Times (June 4, 2020) (reporting that "Mr. Wheeler said that the E.P.A. would still calculate the economic value of … co-benefits" under the proposed rule, but "those calculation[s] would no longer be used in defending rules"), *available at* https://www.nytimes.com/2020/06/04/climate/trump-environment-coronavirus.html.

[111] Proposed Rule, 85 Fed. Reg. at 35,622.

of interest in the regulation"—a restriction that some might point to in an arbitrary effort to prevent the agency from evaluating ancillary benefits.[112]

The EPA cannot allow or require co-benefits to be ignored. Where a rule designed to limit one pollutant requires controls that will also cut other dangerous pollutants, thereby saving additional lives and providing other significant health benefits, it would be arbitrary and unlawful in the extreme to ignore those co-benefits or pretend they are not attributable to the rule. The lives saved through reductions in a co-pollutant are no less valuable than those saved by reductions in the directly regulated pollutant. Indeed, from an economic perspective, when choosing between two alternatives that provide similar benefits with respect to the regulated pollutant, it would be irrational not to consider co-pollutant benefits. The fact is that if the EPA indeed considers their full benefits, rules that cut additional pollution beyond the targeted pollutant may well be double, triple, or even more cost-effective—and far more efficient—than rules that restrict only one type of pollutant, not the reverse. A cost-benefit analysis that looks at only a lopsided equation is arbitrarily one-sided and cannot be justified based on basic principles of economics, the EPA's public-health mission, or the law.

Indeed, under the Administrative Procedure Act, an agency must not ignore "an important aspect of the problem" when issuing a rule.[113] The Clean Air Act's first declared purpose is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population[.]"[114] When the EPA exercises its Clean Air Act authority to limit a particular air pollutant, the effects of that action on other air pollutants is exactly such an "important aspect of the problem" that the agency must address.[115]

Given their importance, federal administrations and agencies—including the EPA—have long included co-benefits in their cost-benefit calculations.[116] The EPA must continue to do so.

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[112] *Id.* at 35,626 (Proposed Rule Section 83.3(a)(9)(iii)(B)).

[113] *State Farm*, 463 U.S. at 43.

[114] 42 U.S.C. § 7401(b)(1).

[115] *See also U.S. Sugar Corp. v. EPA*, 830 F.3d 579, 625 (D.C. Cir. 2016) (noting that "considering co-benefits … is consistent with the … [Clean Air Act's] purpose").

[116] *See, e.g.*, Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993) (directing agencies to "assess all costs and benefits of available regulatory alternatives");

D. The proposed rule arbitrarily fails to address the likelihood that compliance costs will be overstated.

While much of the proposed rule is dedicated to ensuring that the EPA's benefits calculations will be unreasonably low, the regulation ignores the likelihood that regulatory costs will be overstated. This is arbitrary. "Regulatory analysis is notorious for failing to take into adequate account the technological innovations that ultimately make many regulations cheaper to implement than regulators anticipate."[117] The EPA's proposed framework for cost-benefit analysis fails to rationally assess or address this issue.

IV. Rather than increasing transparency, the proposed cost-benefit requirements would obscure the basis for the EPA's decisions.

In attempting to justify the proposed cost-benefit requirements, the EPA argues—repeatedly—that they will "increase the Agency's ability to provide … transparency to the public in regard to the rulemaking process" under the Clean Air Act.[118] The suggestion that cost-benefit analysis inevitably increases the transparency of decisionmaking is a common one.[119] And it's largely hollow. As

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Office of Mgmt. and Budget, Circular A-4 (Sept. 17, 2003), at 26 (directing agencies to "look beyond the direct benefits and direct costs of … [a] rulemaking and consider any important ancillary benefits and countervailing risks"), *available at* https://www. whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf; EPA Nat'l Ctr. for Envtl. Econ., Guidelines for Preparing Econ. Analyses, at 11-2 (2010) (directing the EPA to assess "all identifiable costs and benefits," including "ancillary (or co-) benefits and costs").

[117] Heinzerling, *supra* note 92, at 2314, 2314 n.15 (citing Winston Harrington, *et al.*, *On the Accuracy of Regulatory Cost Estimates*, 19 J. Pol'y Analysis & Mgmt. 297 (Spring 2000); Eban Goodstein & Hart Hodges, *Polluted Data*, Am. Prospect, Nov-Dec. 1997, at 64; Claudia H. Deutsch, *Together at Last: Cutting Pollution and Making Money*, N.Y. Times, Sept. 9, 2001, at A1).

[118] Proposed Rule, 85 Fed. Reg. at 35,613. *See also, e.g.*, *id.* at 35,615 (arguing that "the information provided as a result of the procedural requirements of this proposal, if finalized, would increase transparency and consistency across" Clean Air Act rulemakings).

[119] Heinzerling, *supra* note 92, at 2338.

Professor Lisa Heinzerling has noted, cost-benefit language often makes sense only to economists and professors.[120]

> [F]or other people, references to "statistical lives" will either be incomprehensible or seem irrelevant to real people; references to market decisions will be taken to mean real markets, like the ones with impulse shopping and pervasive advertising, rather than markets contrived to make the shoppers more careful; and saying that benefits you can count are bigger than benefits you cannot will not be decisive on any issue of real importance.[121]

The likelihood that members of the public would be confused by cost-benefit analysis is particularly pronounced under the EPA's proposal. As explained above, the proposed rule would require the EPA to prepare an economic assessment even when the agency is statutorily prohibited from considering costs.[122] It would also bar the agency from citing scientific research that may be highly relevant to the regulation in question.[123] These requirements promise to obscure—rather than clarify—the basis for the EPA's decisions. In order to advance transparency, the proposed rule should be abandoned.

V. The proposed cost-benefit requirements would also obscure the environmental-justice implications of the EPA's decisions.

The EPA's proposed approach to cost-benefit analysis would also obscure the environmental-justice implications of the agency's actions, including its failure to adopt sufficient air-quality protections (or, in some cases, any air-quality protections at all). Under the proposed rule, the EPA's cost-benefit reviews would be required to focus on the "net benefits" of the agency's actions—the question of whether their total calculated benefits exceed their total costs.[124] What this approach ignores, of course, are distributional equities—the question of who benefits from a decision to regulate (or not), and who is burdened. If the proposed rule is finalized, the EPA will be required to regard the balance sheets of wealthy

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[120] *Id.*

[121] *Id.*

[122] *See* Section II, *supra.*

[123] *See* Section III.B, *supra.*

[124] Proposed Rule, 85 Fed. Reg. at 35,614, 35,625.

industries as being no less important than the health and welfare of frontline communities.

This is manifestly arbitrary and unjust. For far too long, low-income communities and communities of color have been disproportionately impacted by air pollution and other forms of environmental degradation. The research on this issue is extremely comprehensive and well-established.[125] Just to give a few examples, in 2018, EPA scientists published a study in the American Journal of Public Health finding that communities living below the poverty line have a 35 percent higher burden from emissions of fine particulate matter than the overall population.[126] The study also found that people of color had a 28 percent higher health burden and that Black Americans had a 54 percent higher burden than the overall population.[127]

The Department of Health and Human Services currently reports that Black Americans are approximately three times more likely to die, visit the emergency room, or be admitted to the hospital on account of asthma than whites.[128] A 2015 study published in the American Journal of Public Health found that Black and Hispanic/Latino Californians were approximately six times more likely than whites to live in the top decile of zip codes most affected by cumulative environmental

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[125] *See, e.g.*, EPA, Final Rule: Nat'l Ambient Air Quality Standards for Particulate Matter, 78 Fed. Reg. 3,086, 3,267 (2013) (noting the "potential disproportionately high and adverse effects on minority and/or low-income populations related to $PM_{2.5}$ exposures," and identifying "persons from lower socioeconomic strata as an at-risk population for PM-related health effects"); EC/R Inc., *Risk and Technology Review—Final Analysis of Socio-Economic Factors for Populations Living Near Secondary Lead Smelting Facilities* (Dec. 2011) (attached), *available at* http://earthjustice.org/sites/default/files/Leadsmeltersocioeconomicanalysis.pdf; EC/R Inc., *Risk and Technology Review—Analysis of Socio-Economic Factors for Populations Living Near Petroleum Refineries* (Jan. 2014) (attached), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0682-0226.

[126] Ihab Mikati, *et al.*, *Disparities in Distribution of Particulate Matter Emission Sources by Race and Poverty Status*, Am. J. Pub. Health 108(4): 480-485 (2018).

[127] *Id.*

[128] U.S. Dep't of Health and Human Servs., Office of Minority Health, *Asthma and African Americans*, *available at* https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=4&lvlid=15.

burdens.[129] And in a recent case study of traffic-related pollution in Allegheny County, Pennsylvania, researchers found that communities with high percentages of low-income and non-white residents were between 4 and 25 times more likely to be in the highest quartile of exposure to black carbon and nitrogen dioxide compared to the lowest quartile for those pollutants.[130]

One of the reasons that these kinds of environmental inequities persist has been the EPA's focus on only aggregate costs and benefits when evaluating its rule proposals. As previously explained, this approach ignores the ways in which those costs and benefits are distributed unevenly across different communities. To help remedy this injustice, the EPA must reject aggregate-level-only analyses going forward. The proposed rule, however, would arbitrarily mandate that approach for all major Clean Air Act rulemakings in the future. In order to ensure that the EPA's decisions remedy environmental inequities, rather than perpetuate them, the proposed rule must be abandoned.

VI. The EPA has failed to assess the environmental-justice implications of the proposed rule, as required by Executive Order 12,898.

The EPA's proposal also violates the environmental-justice requirements of Executive Order 12,898.[131] By its own admission, the agency ignored its obligation to assess the environmental-justice implications of the rule prior to issuing the proposal, dismissively stating that the action is not subject to Executive Order 12,898 "because it does not establish an environmental health or safety standard."[132] The EPA's rationale is inconsistent with the order and contrary to the agency's own environmental-justice plan and previous practices.

First, by its own terms, Executive Order 12,898 applies to more than just "standards."[133] Indeed, the order applies to all agency "programs, policies, and

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[129] Lara Cushing, *et al.*, *Racial/Ethnic Disparities in Cumulative Envtl. Health Impacts in California: Evidence from a Statewide Envtl. Justice Screening Tool (CalEnviroScreen 1.1)*, Am. J. Pub. Health, 105(11): 2341–2348 (2015).

[130] James P. Fabisiak, *et al.*, *A risk-based model to assess environmental justice and coronary heart disease burden from traffic-related air pollutants*, Envtl. Health, 19:34 (2020).

[131] 59 Fed. Reg. 7,629 (Feb. 11, 1994).

[132] Proposed Rule, 85 Fed. Reg. at 35,625.

[133] *See* 59 Fed. Reg. at 7,629.

activities[.]"[134] Toward that end, when promulgating rules "that substantially affect human health or the environment"—as the proposed regulation will—the EPA must ensure they do not have a disproportionate impact on minorities, and it must "provide minority populations and low-income populations the opportunity to comment on the development and design of research strategies undertaken pursuant to th[e] order."[135] The EPA's novel and unsupported interpretation is wholly untethered from both the spirit and the text of Executive Order 12,898.

Second, EPA's limiting interpretation ignores the agency's own environmental-justice plan, which was issued pursuant to the same executive order. The plan rightly calls on the EPA to "integrate[] environmental justice into everything" it does.[136] To accomplish this, the EPA set forth eight different priority areas, the first of which is "rulemaking."[137] Specifically, the EPA aimed to "institutionalize environmental justice in rulemaking," requiring, among other things, the performance of "rigorous assessments of environmental justice analyses in rules," in order to "deepen environmental justice practice within EPA programs to improve the health and environment of overburdened communities."[138] Recognizing that "[r]ulemaking is an important function used by the EPA to protect human health and the environment for all communities," the EPA devoted the second chapter of its plan to ensuring that "environmental justice is appropriately analyzed, considered, and addressed in EPA rules with potential environmental justice concerns, to the extent practicable and supported by relevant information and law."[139]

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[134] *See id.* (providing that each federal agency must make "achieving environmental justice part of its mission by identifying and addressing as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations").

[135] *Id.* at 7,631.

[136] EPA, EJ 2020 Action Agenda (Oct. 2016), at iii, *available at* https://www.epa.gov/sites/production/files/2016-05/documents/052216_ej_2020_strategic_plan_final_0.pdf.

[137] *Id.*

[138] *Id.*

[139] *Id.* at 13.

Consistent with its environmental-justice plan and Executive Order 12,898, the EPA has issued its own "Guidance on Considering Environmental Justice during the Development of Regulatory Actions."[140] The guidance recognizes how "vital" it is "that Agency rule-writers identify and address potentially disproportionate environmental and public health impacts experienced by minority populations, low-income populations, and/or indigenous peoples[.]"[141] In short, the EPA has consistently recognized the need for environmental-justice assessments during its rulemakings. The agency's unsupported assertion that the proposed rule does not require an environmental-justice assessment is at odds with what the EPA has itself recognized it must do to comply with both Executive Order 12,898 and its own policies.

Third, the EPA's failure to perform an environmental-justice analysis is inconsistent with the agency's past practice. Indeed, the EPA has repeatedly performed this sort of assessment when acting under the Clean Air Act, Clean Water Act, and other statutes. This information has undoubtedly been relevant to public-health rulemakings in the past. The EPA's refusal to consider the environmental-justice consequences of its proposal—which are certainly a relevant consideration—is an arbitrary and unexplained departure from the agency's long-standing practice.[142]

Fourth, and as discussed above, the proposed rule would perpetuate the very same inequities that the executive order was designed to protect against. As the EPA has itself recognized, minority, low-income, and tribal communities "may face greater risks" to their health and environment "because of proximity to a contaminated sites or because fewer resources are available to avoid exposure to

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[140] EPA, Guidance on Considering Environmental Justice during the Development of Regulatory Actions (May 2015), *available at* https://www.epa.gov/sites/production/files/2015-06/documents/considering-ej-in-rulemaking-guide-final.pdf.

[141] *Id.* at 1. *See also* EPA, Technical Guidance for Assessing Environmental Justice in Regulatory Analysis. Technical Guidance (June 2016), *available at* https://www.epa.gov/sites/production/files/2016-06/documents/ejtg_5_6_16_v5.1.pdf.

[142] *See, e.g.*, *State Farm*, 463 U.S. at 43 (noting that an agency "must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made'").

pollution."[143] Examples include disproportionate exposure to lead, particulate matter, and other hazardous air pollutants.[144] Indeed, as noted above, study after study has confirmed that communities of color and economically disadvantaged communities are disproportionately located near sources of pollution, and that these communities disproportionately suffer adverse health and environmental impacts as a result.

In short, the EPA was required under Executive Order 12,898—as well as its own environmental-justice plan and guidance—to conduct an assessment of the proposal's environmental-justice implications. As the agency has refused to do so, the proposal cannot stand.

VII. Conclusion

The EPA's proposed rule arbitrarily and unlawfully defies the requirements of the Clean Air Act at the expense of the public's health and welfare. It must be withdrawn.

Earthjustice
California Communities Against Toxics
Sierra Club

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[143] EPA, Envtl. Justice FY2017 Progress Report at 8, *available at* https://www.epa.gov/sites/production/files/2018-04/documents/usepa_fy17_environmental_justice_progress_report.pdf.

[144] *Id.*

Attachment

Comments of Public Health and Environmental Organizations
(Aug. 3, 2020) (EPA-HQ-OAR-2020-0044-0472)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process, 85 Fed. Reg. 35,612 (June 11, 2020)

Docket ID No. EPA-HQ-OAR-2020-00044
Submitted via Regulations.gov
August 3, 2020

COMMENTS OF PUBLIC HEALTH AND ENVIRONMENTAL ORGANIZATIONS

Environmental and public health organizations[1] Chesapeake Bay Foundation, Clean Air Task Force, Environmental Defense Fund, Environmental Law & Policy Center, Environmental Protection Network, Natural Resources Defense Council, and Union of Concerned Scientists hereby submit the following comments on the U.S. Environmental Protection Agency's proposed rule "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process," 85 Fed. Reg. 35,612 (June 11, 2020).

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I. INTRODUCTION

Over the past half-century, the Clean Air Act ("CAA" or the "Act") has established the United States as a global leader in improving air quality. Under the Act, the benefits of pollution reduction have included hundreds of thousands of avoided premature deaths, improved respiratory and cardiovascular health, reduced incidence of cancer, more opportunities for children to play safely outdoors, and preservation of national parks and natural ecosystems. Multiple studies have demonstrated that the monetized benefits of the Act exceed the costs of pollution control many times over, even without considering the significant unmonetized benefits. Economically, these benefits have had a profound impact: cleaner air has led to fewer missed school and work days, reduced medical expenses, and more tourism and recreational activities. The U.S. economy has experienced phenomenal growth since Congress passed the Act, and clean-air technologies developed in America have opened up business opportunities around the world. Through its implementation by the Environmental Protection Agency ("EPA" or the "agency"), the Act has significantly advanced Congress's intent "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population."[2]

At the same time, there is more work to be done. Communities of color and low-income communities continue to suffer disproportionately from poor air quality—disparities that EPA has an urgent obligation to address. Climate change is already harming our nation and world, and failure to take action today forebodes even greater suffering in the decades to come. EPA must advance stronger Clean Air Act protections to comprehensively fulfill its obligations under the statute, not backtrack from the progress it has already made.

Yet this Proposal[3] appears completely oblivious to the monumental benefits that the Act has delivered for our nation—and utterly indifferent to the harm that the Act seeks to alleviate. Most strikingly, the agency has refused to evaluate the impacts that this rulemaking would have on environmental justice communities. In fact, the agency has failed to illustrate or discuss the public health and environmental consequences of its Proposal at all.

As we explain in these comments, EPA lacks the authority to issue this Proposal, which is based on an unsupported and inaccurate premise that the agency has previously overestimated the benefits of Clean Air Act protections. Section 301 of the Clean Air Act, the sole basis for authority that the agency has invoked, applies only to rules that are "necessary" for the Administrator to implement the statute.[4] Yet this Proposal sharply *conflicts* with the agency's statutory obligations. Its blanket requirement to conduct benefit-cost analyses ("BCAs") for all significant rulemakings disregards the varied ways that the Act directs EPA to consider costs, including provisions that outright preclude such consideration. It would twist one of our nation's most important public health statutes into a servant of rigid and one-sided BCAs.

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[2] 42 U.S.C. § 7401(b)(1).

[3] Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process, 85 Fed. Reg. 35,612 (June 11, 2020) ("Proposal").

[4] 42 U.S.C. § 7601(a)(1).

Far from being "necessary," EPA has identified no problem that this action would solve. The Proposal is premised largely on the agency's vague references to public comments alleging that previous rulemakings have overestimated benefits. EPA apparently takes these false claims at face value without pointing to a single example to substantiate them. Nor can the agency refute the existing analyses—produced by both EPA and external experts—showing that benefits of the Act's protections have vastly exceeded costs. And nowhere does the agency consider the possibility that it has historically underestimated benefits and overestimated costs, despite significant evidence to that effect.

When assessing costs and benefits of public health and environmental protections, EPA has historically utilized guidance developed in-house and by the Office of Management and Budget ("OMB") that is more adaptable and recognizes the range of obligations that the agency fulfills. The Proposal's binding mandate to utilize a particular approach to assessing costs and benefits for all significant Clean Air Act rulemakings is unlawful, arbitrary, and unworkable—and ignores that there are other and varied methods of cost assessment that may be appropriate in different circumstances. Moreover, the agency's guidance has been developed through a public process and peer-reviewed, in stark contrast to the inscrutable nature of this Proposal. The existing guidance genuinely provides the consistency and transparency that this Proposal falsely advertises.

The sole driver of this incoherent and opaque Proposal is the agency's desire to downplay benefits, exaggerate costs, and generally thwart Clean Air Act protections. For example:

- The requirement to disaggregate and exclude co-benefits from presentations of the costs and benefits of a rulemaking would make it easier to ignore the human suffering that Clean Air Act protections prevent. This requirement could advance the Administrator's dangerous intention to ignore these crucial public health benefits altogether when determining the stringency of public health protections.
- The Proposal is replete with arbitrary requirements that would make the establishment of Clean Air Act protections more onerous and resource-intensive—and increase the vulnerability of final rules to litigation—for reasons that are totally disconnected from the agency's statutory obligations.
- The Proposal takes an arbitrarily inconsistent approach to assessing costs and benefits, setting a higher standard of evidence to demonstrate benefits than costs.
- The Proposal would manipulate the scientific data and other inputs that inform cost-benefit analyses—and potentially the underlying rulemakings—in violation of the agency's obligation to utilize the best available science.

EPA's faithful implementation of the Clean Air Act over most of the Act's first fifty years has been a great American success story. By any legitimate metric, the benefits of clean air protections have consistently and overwhelmingly exceeded the costs, which may account for the unprecedented and one-sided tactics to which this Proposal resorts. With so much on the line—from threats to public health amidst a pandemic, to the generational challenge of climate change—we cannot afford to dismiss the benefits that the Act promises. Doing so would violate the law and inflict devastating health and environmental consequences upon the nation. We strongly urge the agency to withdraw this unnecessary and unlawful Proposal.

II. EPA'S PROPOSAL FAILS TO ACKNOWLEDGE THAT CLEAN AIR PROTECTIONS HAVE CONSISTENTLY BEEN FOUND TO HAVE OVERWHELMING NET BENEFITS.

The Proposal's unsupported assertion that EPA's prior analyses of Clean Air Act protections "overestimate" benefits and "underestimate" costs ignores a vast body of rigorous analyses concluding that clean air protections yield overwhelming net benefits for society, both in qualitative and quantitative terms. Further, the Proposal ignores clear evidence showing that past assessments of Clean Air Act protections have excluded or undervalued important categories of benefits and overestimated costs of compliance—meaning that, if anything, EPA has *underestimated* the net benefits associated with clean air protections. Lastly, the Proposal arbitrarily fails to address distributional impacts, contrary to the directive in Executive Order 12,898.

A) Clean Air Protections Have Clear and Overwhelming Net Benefits.

Since 1970, EPA safeguards promulgated under the Clean Air Act have saved lives, improved health, and elevated quality of life nationwide by reducing harmful pollution that contaminates the air we breathe and the places where we live, work, and recreate. Thanks to these safeguards, our air quality has markedly improved over the past five decades—while our population, gross domestic product, and other indicators of economic activity have dramatically increased. Moreover, the United States has become an international leader in pollution control industries, spurring innovation and job creation.

As discussed in section III of these comments, the various provisions and programs in the Clean Air Act in some cases carefully delineate whether and how EPA may consider costs and benefits when undertaking rulemakings. Nevertheless, for decades EPA has undertaken rigorous analyses of the benefits and costs of Clean Air Act protections through Regulatory Impact Analyses ("RIAs") prepared under Executive Order 12,866 and related executive orders, as well as through comprehensive assessments required under Section 812 of the Act. These analyses are prepared according to longstanding EPA and OMB guidelines, are developed in a transparent manner with opportunities for public comment, and are subject to interagency review or peer review to ensure a high standard of rigor.[5]

These analyses, as well as independent analyses, have consistently found that clean air protections yield benefits far in excess of costs. For example:

- OMB regularly submits reports to Congress assessing the costs and benefits of major federal regulations, including Clean Air Act rules issued by EPA. The most recent

[5] EPA's most recent Section 812 analysis was subject to external expert review led by the Science Advisory Board's Advisory Council on Clean Air Compliance Analysis, as well as three technical subcommittees of the Advisory Council. EPA, Benefits and Costs of the Clean Air Act From 1990 to 2020: Summary Report 1 (2011). Moreover, intermediate analyses leading up to the final report were made available to the public for review and comment. EPA, *Benefits and Costs of the Clean Air Act 1990-2020: Revised Analytical Plan for EPA's Second Prospective Analysis* 10-1 (2003). Likewise, EPA's Regulatory Impact Analyses for individual rulemakings are made available for public comment and are sometimes subject to review by the Science Advisory Board.

report prepared by OMB, which was finalized in December 2019, reported that major rules issued by the Office of Air and Radiation between October 1, 2006 and September 30, 2016 yielded a cumulative total of $180.5 billion to $665.4 billion in *annual* benefits; when joint fuel economy and vehicle greenhouse gas standards issued by the Department of Transportation and EPA are included, the total benefits increase to $225.1 billion to $743.2 billion each year. These benefits are between 4.3 and 10.6 times higher than the annual compliance costs associated with these rules.[6]

- EPA's most recent analysis of the costs and benefits of the Clean Air Act projects that the benefits of the 1990 Clean Air Act Amendments will exceed the costs of compliance by a factor of 30 to 1 over the period of 1990 to 2020.[7] The study identified benefits valued at $2 trillion in 2020 alone, including 230,000 avoided deaths, 200,000 avoided heart attacks, over 250,000 avoided hospitalizations and emergency room visits, 2.4 million avoided asthma attacks, and 22.4 million lost work and school days avoided.[8] Required by Section 812 of the Clean Air Act, this comprehensive analysis rests on a vast body of peer-reviewed literature and numerous technical reports, and was reviewed by an Advisory Council of the agency's Science Advisory Board ("SAB") and three separate technical subcommittees.

- A more recent independent analysis of the costs and benefits of the Clean Air Act, prepared by Industrial Economics, Inc. for the Natural Resources Defense Council, used a methodology similar to that of EPA's own study but with updated health and valuation assumptions drawn from more recent RIAs. This study concluded that the benefits of Clean Air Act protections range from nearly $2 trillion to nearly $3.9 trillion in 2020, with projected benefits of $2.5 trillion to $5.0 trillion in 2030.[9] The 2030 benefits identified in the study include between 229,000 and 457,000 avoided deaths; nearly 55,000 avoided heart attacks; over 250,000 cardiac and respiratory hospital admissions; over 67 million avoided asthma attacks; and over 36 million lost school and work days avoided.[10]

These analyses reflect EPA's extensive track record of implementing the Clean Air Act to achieve dramatic reductions in air pollution in a cost-effective way. For example, EPA estimates that power plant mercury emissions have decreased by 86% from 2006 to 2016, due in no small part to EPA's Mercury and Air Toxics Standards ("MATS"), with further reductions

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[6] OMB, *2017 Report to Congress on the Benefits and Costs of Federal Regulations and Agency Compliance with the Unfunded Mandates Reform Act* 9, Table 1-2 (2019), https://www.whitehouse.gov/wp-content/uploads/2019/12/2019-CATS-5885-REV_DOC-2017Cost_BenefitReport11_18_2019.docx.pdf.

[7] EPA, *The Benefits and Costs of the Clean Air Act from 1990-2020* 7-1 (Apr. 2011), https://www.epa.gov/sites/production/files/2015-07/documents/fullreport_rev_a.pdf. ("EPA 2011 Study")

[8] *Id.* at 5-25, Table 5-6.

[9] Industrial Economics, Inc., *The Benefits and Costs of U.S. Air Pollution Regulations* 25 (May 2020), https://www.nrdc.org/sites/default/files/iec-benefits-costs-us-air-pollution-regulations-report.pdf ("IEc/NRDC 2020 Study").

[10] *Id.* at 32, Table 11.

expected from the sector.[11] Power plant emissions of pollutants that cause acid rain, haze and smog have fallen dramatically as well—94% for sulfur dioxide and 86% for oxides of nitrogen, from 1990 to 2019.[12] Since the early 1990s, average visibility in Class I protected areas like Great Smoky Mountains National Park has improved by 20 miles with significant reductions in sulfur dioxide and ozone pollution from Clean Air Act requirements.[13]

These reductions in pollution have not only resulted in massive improvements in public health, but as the studies above have found, they have also resulted in a variety of other improvements in economic well-being and quality of life. Improved air quality in our nation's protected areas, for example, has resulted in increased tourism at national parks, [14] as visitors highly value clean air. That in turn generates significant revenue for local economies.[15] Protections adopted under the Clean Air Act over the last few decades have also led to a dramatic decrease in acid rain,[16] and sharply reduced levels of neurotoxic lead pollution in the air.[17]

These benefits have occurred as America has achieved robust economic growth. By 2017, the combined emissions of the six most common air pollutants fell 73%, compared to 1970.[18] During this time, gross domestic product grew 246% and population grew by more than 50%.[19] EPA standards themselves can drive innovation and progress, establishing the United States as a leader. For example, the Clean Air Act's Significant New Alternatives Policy has helped drive American innovations in alternative products that are less harmful to the ozone layer, while providing new markets to American manufacturers.[20]

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[11] EPA, *Comparing Industry Sectors, in 2016 TRI National Analysis* 31 (Jan 2018), https://www.epa.gov/sites/production/files/2018-01/documents/comparing_industry_sectors.pdf.

[12] EPA, *Clean Air Markets: Power Plant Emission Trends Data*, https://www.epa.gov/airmarkets/power-plant-emission-trends#:~:text=From%201990%2D2019%2C%20annual%20emissions,94%20percent%2C%20from%201990%20levels.

[13] National Parks Conservation Association, *Polluted Parks: How Dirty Air is Harming America's National Parks*, (Sept. 2015), https://www.npca.org/resources/3137-polluted-parks-how-dirty-air-is-harming-america-s-national-parks.

[14] David Keiser et al., *Air pollution and visitation at U.S. national parks*, Science Advances (July 18, 2018), http://advances.sciencemag.org/content/4/7/eaat1613.

[15] *See* National Parks Service, *2019 National Park Visitor Spending Effects Economic Contributions to Local Communities, States, and the Nation* (2020), https://www.nps.gov/subjects/socialscience/vse.htm.

[16] National Acid Precipitation Assessment Program, *Report to Congress 2011* at ES-2, ES-3 (Dec. 28, 2011) (noting that the health benefits in 2010 alone resulting from the Acid Rain Program are estimated at $170 billion to $430 billion, and that wet sulfate deposition has decreased 42-44% since the program was enacted).

[17] *See* EPA, *Lead Trends, https://www.epa.gov/air-trends/lead-trends* (showing mean concentrations of lead in the air have declined 98%).

[18] EPA, *Progress Cleaning the Air and Improving People's Health*, https://www.epa.gov/clean-air-act-overview/progress-cleaning-air-and-improving-peoples-health.

[19] *Id.*; *See* U.S. Population by Year, http://www.multpl.com/united-states-population/table.

[20] *See, e.g.,* Honeywell, *Performance Materials and Technologies: Reducing the impact on climate change*, https://www.honeywell-refrigerants.com/europe/wp-content/uploads/2013/03/honeywell-lgwp_hfo-environmental_brochure.pdf ("[T]he Company has been at the forefront of the industry's drive to develop these safer, non-ozone depleting alternatives to the older technology (CFC and HCFC refrigerants), in compliance with global legislation for their phase-out.").

The Proposal presents absolutely no evidence indicating that these assessments of Clean Air Act benefits are in error. And the sheer scale of the benefits associated with clean air protections means that Clean Air Act programs would still yield benefits far in excess of costs *even assuming* significant uncertainty as to both benefits and costs. EPA's most recent Section 812 study, for example, carefully evaluated the uncertainty associated with each element of its assessment and concluded that:

> the very wide margin between estimated benefits and costs, and the results of the uncertainty analysis, suggest that it is extremely unlikely that the monetized benefits of the CAA [Amendments] over the 1990 to 2020 period reasonably could be less than its costs, under any alternative set of assumptions we can conceive.[21]

B) Assessments of Clean Air Protections Underestimate Key Benefits and Overestimate Costs.

Contrary to EPA's suggestion that prior analyses "overestimated benefits,"[22] efforts to quantify and monetize the tremendous benefits provided by EPA safeguards have long been recognized to capture only a portion of their value, due to the difficulty of quantifying and monetizing many of their beneficial impacts. For example, EPA's 2011 analysis of the benefits of the Clean Air Act evaluated both the uncertainty associated with the quantification and monetization of different air pollution benefits as well as categories of benefits that are excluded from benefit-cost analyses. Among other things, the analysis observed that:

- EPA has "high confidence" that estimates of the impacts of particulate matter on health are subject to "potentially major" *underestimates*, given that actual human exposure to particulate matter is likely to be much greater than ambient air monitor data would indicate.[23]
- EPA does not quantify many health effects of hazardous air pollutants such as mercury[24]—a potentially major omission in light of recent research concluding that reductions in power plant emissions of mercury alone could yield cumulative health benefits (primarily cardiovascular) valued at between $43 billion and $147 billion by 2050.[25]
- EPA does not quantify a range of potential ecological effects associated with air pollution, including eutrophication of estuaries, acidification of soils, and bioaccumulation of mercury and dioxins in the food chain—effects that EPA

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[21] EPA 2011 Study at 7-8.

[22] 85 Fed. Reg. at 35,617.

[23] EPA 2011 Study at 5-41; Daniel M. Sullivan & Alan Krupnick, *Using Satellite Data to Fill the Gaps in the US Air Pollution Monitoring Network*, at 1, Resources for the Future Working Paper (Sept. 2018) (finding that over 24 million Americans live in areas misclassified as in attainment for fine particulate matter), https://www.rff.org/documents/1823/RFF20WP-18-21_0.pdf.

[24] EPA 2011 Study at 5-48.

[25] A. Giang & N.E. Selin, *Benefits of Mercury Controls for the United States*, 113 Proc. Nat'l Acad. Sci. 286, at S11-S12 (2016).

> characterized as "widespread and significant," resulting in "potentially major" underestimates of the net benefits of Clean Air Act programs.[26]

Overall, EPA determined that its assessment of the costs and benefits of Clean Air Act programs is "more likely to understate net benefits than overstate them" in light of the relatively large number of major sources of uncertainty that would result in an underestimate of benefits (and the much smaller number of uncertainties that could lead to an overestimate of benefits).[27]

Importantly, EPA's 2011 conclusion that benefits of Clean Air Act programs are likely underestimated has been echoed in other studies. The Industrial Economics study referenced above, for example, noted that its assessment of the benefits of Clean Air Act protections—even though it was substantially higher than EPA's estimate—*excluded* multiple major categories of criteria air pollutant benefits, including "improved productivity for agricultural crops and commercial timber, visibility improvements in recreational and residential areas, avoided degradation of buildings constructed with acid-sensitive materials, and reduced acid deposition."[28] Likewise, the Industrial Economics study (like EPA) excluded health benefits of reductions in organic aerosols—despite scientific literature indicating that these reductions avoided 180,000 premature deaths between 1990 and 2012 alone.[29] And the Industrial Economics study, like EPA, also assigned no quantitative value to reductions in air toxics such as mercury, arsenic and lead.[30]

That these benefits may be difficult to quantify and monetize, of course, does not "make them any less real" or diminish their value and relevance in policymaking.[31] OMB's longstanding guidance for regulatory assessments, entitled Circular A-4, has recognized since 2003 that "[i]t will not always be possible to express in monetary units all the important benefits and costs."[32] Circular A-4 also instructs agencies to present unquantifiable or unmonetized benefits alongside quantified estimates of other benefits,[33] and advises that where there are significant unquantified benefits "the most efficient alternative will not necessarily be the one with the largest quantified and monetized net-benefit estimate."[34] This guidance, which has been in place for nearly seventeen years and followed under administrations of both parties, affirms the importance of considering unquantified benefits on an equal footing with quantified and monetized benefits when conducting regulatory assessments.

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[26] EPA 2011 Study at 6-43.

[27] *Id.* at 7-11.

[28] IEc/NRDC 2020 Study at 38.

[29] *Id.* at 39 (citing Ridley, D.A., Heald, C. L., Ridley, K.J., and Kroll, J.H. 2018. Causes and consequences of decreasing atmospheric organic aerosol in the United States. PNAS. 115(2)).

[30] *Id.*

[31] J. Scott Halladay, Valuing the Clean Air Act: How Do We Know How Much Clean Air is Worth? 14 (Institute for Policy Integrity, 2011).

[32] OMB, Circular A-4: Regulatory Analysis 2 (Sept. 17, 2003), https://obamawhitehouse.archives.gov/omb/circulars_a004_a-4/.

[33] *Id.* at 27.

[34] *Id.* at 2.

At the same time that benefits of clean air protections are routinely underestimated, the costs of clean air protections are often grossly exaggerated by industry—and actual costs have often been markedly lower than initially estimated by EPA. In 1990, for example, American Electric Power told the Boston Globe that bipartisan solutions to address acid rain could lead to "the potential destruction of the Midwest economy."[35] Power companies predicted that reducing sulfur dioxide pollution would cost $1,000-$1,500 per ton and electricity prices would increase up to 10% in many states.[36] In fact, the actual pollution reduction cost has been between $100 and $200 per ton for both phases of the acid rain program, and electricity prices fell in most states.[37] Acid rain has been dramatically reduced and the limits on sulfur dioxide pollution were met faster and at a strikingly lower price than anyone expected in 1990.[38] Similarly, despite initial industry protestations about the costs of compliance with MATS, actual implementation costs have been lower than EPA's projections by hundreds of millions—even billions—of dollars.[39]

Assessments of regulatory analyses conducted by EPA and other agencies have confirmed that such overestimates of costs are frequent—undermining the Proposal's unsubstantiated suggestion that costs of EPA rules tend to be "underestimated."[40] A 2014 study by EPA's own National Center for Environmental Economics ("NCEE") contained an extensive literature review of studies conducted by independent researchers, the Office of Management and Budget, the National Research Council, and the former Office of Technology Assessment. The vast majority of the studies reviewed by NCEE found that official estimates of the costs of environmental regulations were overestimated far more frequently than they were underestimated.[41] One frequently cited study by researchers at Resources for the Future, for example, examined 28 environmental regulations and found that 14 of the rules overestimated costs and that only 3 of the rules underestimated costs. The researchers concluded that "EPA and other regulatory agencies tend to overestimate the total costs of regulations" because they fail to

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[35] Michael Kranish, *A clean air revival*, Boston Globe (Oct. 17, 2010), http://archive.boston.com/news/science/articles/2010/10/17/washing_away_of_acid_rain_offers_lesson/.

[36] U.S. House of Representatives Committee on Energy and Commerce, *Industry Claims about the Costs of the Clean Air Act* (2009).

[37] *Id.*

[38] EDF, *There They Go Again: AEP Seeks Delay in Health Protections for Children and Elderly*, http://www.edf.org/sites/default/files/AEP%20-%20There%20They%20Go%20Again.pdf; *see also* Sam Napolitano et al., *The U.S. Acid Rain Program: Key Insights from the Design, Operation, and Assessment of a Cap-and-Trade Program*, 20 Elsevier 47 (Aug./Sept. 2007), https://www.epa.gov/sites/production/files/2016-03/documents/us_acid_rain_program_elec_journal_aug_2007.pdf ("Since its inception in 1995, the U.S. Acid Rain Program (ARP) has earned widespread acclaim due to dramatic sulfur dioxide (SO2) and nitrogen oxides (NOX) emission reductions, far-ranging environmental and human health benefits, and far lower-than expected compliance costs.").

[39] EDF, *Power Companies' Declining Estimates of the Compliance Costs of Mercury & Air Toxics Standards (MATS)*, http://blogs.edf.org/climate411/files/2014/05/Declining-costs-of-MATS-compliance.pdf?_ga=1.64911789.383468789.1454952534.

[40] 85 Fed. Reg. at 35,617.

[41] National Center for Environmental Economics, *Retrospective Study of the Costs of EPA Regulations: A Report of Four Case Studies* 4-5, Table 1.1 (2014).

account for future technological innovations that reduce the cost of compliance, or rely on industry estimates of costs that (as noted above) are themselves exaggerated.[42]

C) The Proposal Unlawfully Ignores Distributional Impacts of Clean Air Protections.

While the Proposal dwells on completely unsubstantiated speculation that the net benefits of clean air protections are overstated, it completely overlooks the very real impacts that clean air protections have on health and quality of life in communities that are disproportionately exposed to air pollution, including low-income communities and communities of color who are most likely to live in close proximity to industrial facilities and other sources of pollution. Protecting those communities, tribal communities, and persons more vulnerable to air pollution due to preexisting health conditions or age (the very young and the elderly) should be central to EPA's implementation of the Clean Air Act, and in fact are central tenets of the Act as written. Indeed, EPA's Office of Inspector General recently identified considering environmental justice and demonstrating leadership on environmental justice as a top management challenge for EPA.[43] The Proposal's failure to consider these environmental justice and equity impacts—and the ramifications that its new requirements might have on clean air protections that affect overburdened communities—runs afoul of the Act's purposes by emphasizing cost to industry over public health goals. For those and other reasons, the Proposal is arbitrary, contrary to good practices in economic analysis, and in conflict with the directives of Executive Order 12,898, which requires agencies to identify and address such impacts.

As described below, this Proposal is riddled with arbitrary and burdensome requirements that threaten to make it more difficult for EPA to develop and justify clean air protections—including requirements that create higher evidentiary hurdles for benefits than for costs; requirements that would limit and distort EPA's consideration of public health studies; and disclosure requirements that could limit EPA's consideration of proprietary or older data. There is no question that this Proposal's effects on clean air protections would fall disproportionately on communities that are most exposed to air pollution—including communities with large numbers of low-income and minority residents. A recent meta-analysis of economic research on clean air protections, for example, highlights evidence that the 1990 Clean Air Act Amendments have led to significant air quality improvements in neighborhoods near particulate matter monitors—with benefits that are particularly great for low-income communities.[44] Similarly,

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[42] Winston Harrington, Richard Morgenstern, and Peter Nelson, *How Accurate Are Regulatory Cost Estimates?*, at 1 (Resources for the Future, 2010) (describing research reflected in Winston Harrington, Richard D. Morgenstern, and Peter Nelson, *On the accuracy of regulatory cost estimates*, 19 Journal of Policy Analysis and Management, 297–322 (2000)).

[43] EPA Office of Inspector General, *FYs 2020-2021 U.S. Environmental Protection Agency Top Management Challenges* (Report No. 20-N-0231, July 21, 2020), https://www.epa.gov/sites/production/files/2020-07/documents/_epaoig_20200721-20-n-0231_0.pdf.

[44] Janet Currie & Reed Walker, *What Do Economists Have to Say About the Clean Air Act 50 Years After the Establishment of the Environmental Protection Agency?*, 33 Journal of Economic Perspectives 20 (2019) (citing Antonio Bento, Matthew Freedman, and Corey Lang, *Who Benefits from Environmental Regulation? Evidence from the Clean Air Act Amendments*, 97 Review of Economics and Statistics 610–22 (2015)).

Clean Air Act protections phasing out lead in gasoline and targeting reductions in particulate matter have been shown to have particularly significant benefits for minority communities.[45]

By altering benefit-cost analyses for Clean Air Act protections in a way that might make the benefits of these protections more difficult to demonstrate—as well as creating new administrative and litigation-related hurdles to these protections—the Proposal puts at risk these vital protections and the progress they have yielded in overburdened communities. Furthermore, the proposed requirements themselves say absolutely nothing about analyzing the distributional impacts of clean air protections as part of future benefit-cost analyses. In this regard the Proposal "entirely fails to consider an important aspect of the problem" it is purporting to address,[46] a hallmark of arbitrary and capricious rulemaking. Further underscoring the arbitrary nature of the Proposal, EPA's failure to consider the distributional impacts of the Proposal or to consider distributional equity in the benefit-cost requirements in the Proposal is contrary to accepted practices in regulatory analysis. Circular A-4 itself recommends that agencies "provide a separate description of distributional effects (i.e., how both benefits and costs are distributed among sub-populations of particular concern) so that decision-makers can properly consider them along with the effects on economic efficiency."[47]

These omissions in the Proposal also run afoul of Executive Order 12,898. The Proposal incorrectly asserts that "this proposed action is not subject to Executive Order 12898 . . . because it does not establish an environmental health or safety standard."[48] Executive Order 12,898, however, is not so limited. By its terms, Executive Order 12,898 directs each federal agency, including EPA, to make environmental justice part of its mission "to the greatest extent practicable" and requires each agency to "identify[] and address[]" the "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States."[49] This obligation holds regardless of whether those programs, policies, and activities are substantive or procedural in nature, and clearly applies to this Proposal—which would substantially affect clean air protections that are important to the health and well-being of overburdened communities.

III. THRESHOLD LEGAL OBJECTIONS

EPA fails to identify any problem solved by finalizing the Proposal. That in and of itself contravenes the fundamental administrative law principle that an agency action must identify both authority to take the action, and a problem it addresses. Moreover, it indicates a substantive legal issue: the Proposal is fundamentally unnecessary for implementation of the CAA, which means EPA is precluded from relying upon CAA Section 301(a)(1). Section 301(a)(1) authorizes only regulations necessary to carry out the CAA. Far from being necessary, this Proposal

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[45] *Id.* at 21 (citing Anna Aizer, Janet Currie, Peter Simon, and Patrick Vivier, *Do Low Levels of Blood Lead Reduce Children's Future Test Scores?*, 10 American Economic Journal: Applied Economics 307–41 (2018)).

[46] *Motor Vehicle Mfrs Ass'n v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983) ("*State Farm*").

[47] Circular A-4 at 14. *See also id.* ("You should be alert for situations in which regulatory alternatives result in significant changes in treatment or outcomes for different groups.").

[48] 85 Fed. Reg. at 35,625.

[49] E.O. 12,898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, Section 1-101 (Feb. 11, 1994) ("E.O. 12,898").

undermines EPA's capacity to carry out the CAA's purpose to protect public health and welfare and violates statutory duties under the Act, as discussed below.[50] As a result, EPA has identified no statutory authority under the CAA to properly issue the rule.

Additionally, the Proposal exceeds the scope of EPA's authority to issue rules of agency organization, procedure, and practice because it will have a binding effect on the agency and effect sweeping impacts on public health. Accordingly, the Proposal is a substantive rule requiring EPA to consider comments submitted through notice-and-comment rulemaking and to provide a new opportunity for public comment on any aspects of a final rule that are not logical outgrowths of the Proposal, and prohibiting EPA from relying on any authorities to issue the Proposal that extend only to internal or procedural practices. Neither has EPA provided any reason to issue a binding regulation or to arbitrarily depart from decades of practice under its existing guidelines, which are developed through a more robust peer-review process and better suited to flexibly adapt to methodological innovations and unique regulatory and statutory circumstances. Lastly, the rule risks an unnecessary increase in litigation for no reason.

A) EPA Identifies No Legitimate Source of Legal Authority Under the Clean Air Act for the Proposal.

EPA cites no legitimate source of legal authority under the CAA for enacting the Proposal. The agency inappropriately relies on only 42 U.S.C. § 7601(a)(1) (also referred to as Section 301(a)(1) of the CAA), which grants the Administrator authority "to prescribe such regulations as are necessary to carry out his functions" under the CAA. Yet courts have "consistently held that EPA's authority to issue ancillary regulations is not open-ended," and its "gap-filling authority" is designed only "to supplement the CAA's provisions."[51] Section 7601(a)(1) "does not give EPA carte blanche authority to promulgate any rules, on any matter relating to the CAA, in any manner that the Administrator wishes."[52] If the agency wishes to invoke the Administrator's "gap-filling" authority, it must identify a gap that requires filling, which the agency has failed to do.

Moreover, there is no gap to identify. As discussed elsewhere in this comment, the Proposal is entirely unnecessary, duplicating and confusing the role of guidance that has no need to be made binding and fulfilling no obligation under the Clean Air Act. This puts the Proposal beyond the proper scope of Section 7601(a)(1), which only authorizes the Administrator to issue regulations "necessary to carry out his functions" under the statute. As the D.C. Circuit pointed out the same month that the Proposal was published, "a 'necessary or appropriate' provision in an agency's authorizing statute does not necessarily empower the agency to pursue rulemaking

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[50] *See infra* sections V, VI, VII, IX, XI.

[51] *NRDC v. EPA,* 749 F.3d 1055, 1063, 1064 (D.C. Cir. 2014).

[52] *Citizens to Save Spencer County v. U.S. E.P.A.,* 600 2d. 844, 873 (D.C. Cir. 1979) ("*Spencer County*"). *See also American Petroleum Institute v. U.S. E.P.A.,* 52 F.3d 1113, 1117 (D.C. Cir. 1995); *Merck & Co., Inc. v. U. S. H.H.S.*, 962 F.3d 531 (D.C. Cir. 2020) ("Although the Secretary's regulatory authority is broad, it does not allow him to move the goalposts to wherever he kicks the ball.").

that is not otherwise authorized."[53] As such, the Proposal is arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with law, and in excess of statutory authority.

Reflecting its limited authority under 42 U.S.C. § 7601(a)(1), EPA has typically issued regulations under this provision in tandem with another statutory grant of authority. As recently as 2018, when issuing proposed regulations setting the requirements for non-attainment state implementation plans for the 2015 National Ambient Air Quality Standards ("NAAQS") for ozone, the agency relied on its statutory authority under 42 U.S.C. § 7601(a)(1) *and* 42 U.S.C. §§ 7409-7410, 7502, 7511(a)-7511(d), and 7661(2)(B).[54] Similarly, in its proposed rule regarding good neighbor obligations for the 2015 Ozone NAAQS, the agency cited its authority under both 42 U.S.C. § 7601(a)(1) *and* § 7410.[55] As the Seventh Circuit has observed, where "the U.S. EPA relie[s] solely upon the provisions of § 301," as it does here, "its authority to promulgate . . . regulations might be questionable."[56]

In contrast to the Proposal, the Administrator may rely on 42 U.S.C. § 7601(a)(1), for example, to reconcile previous regulations that "contain[] certain provisions that are inconsistent with more recent actions and rulemakings promulgated by the EPA."[57] Similarly, the Administrator may find it necessary to issue regulations, relying on 42 U.S.C. §7601(a)(1), where there are seemingly contradictory statutory provisions and it is necessary to issue regulations that "accommodate reasonably the purpose and concerns behind the two contradictory provisions."[58] In both of those instances, the statute could not be implemented without additional regulations, clarifying inconsistencies across regulations or within the language of the statute itself. Neither of these scenarios pertains to the Proposal. The Proposal resolves no inconsistencies in the statute or regulations, nor resolves any obstacles to the agency's ability to implement the statute. Indeed, the Proposal seeks to fill the role already effectively fulfilled by existing guidance documents.[59]

Furthermore, the agency has also failed to provide an explanation for why the rule is "necessary"—likely because this Proposal fulfills no requirement of the Clean Air Act and in fact would interfere with EPA's performance of its statutory duties, as discussed below.[60] As the agency has previously recognized, when enacting regulations under 42 U.S.C. § 7601(a)(1), the Administrator must provide a reasoned explanation as to why the proposed regulation is

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[53] *N.Y. Stock Exch. LLC v. SEC*, slip op. at 25; s*ee also Michigan v. EPA*, 135 S. Ct. 2699, 2706-07 (2015) ("*Michigan v. EPA*").

[54] Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements, 83 Fed. Reg. 62,998, 63,031 (Dec. 6, 2018).

[55] Determination Regarding Good Neighbor Obligations for the 2008 Ozone National Ambient Air Quality Standard, 83 Fed. Reg. 65,878, 65,882 (Dec. 21, 2018).

[56] *Illinois E.P.A. v. U.S. E.P.A.,* 947 F.2d 283, 291 (7th Cir. 1991).

[57] Revisions to the Source-Specific Federal Implementation Plan for the Four Corners Power Plant, Navajo Nation, 81 Fed. Reg. 86,988, 86,990-86,991 (Dec. 2, 2016) (proposed rule).

[58] NAAQS for Particulate Matter, 78 Fed. Reg. 3086, 3254 (Jan. 15, 2013) (quoting 45 Fed. Reg. 52,676, 52,683); *see also Spencer County,* 600 F.2d at 873 (where two statutory provisions are in direct conflict with each other "it was clearly 'necessary' for the Administrator in order to 'carry out his functions' in administering the [Act] . . . to employ the rulemaking authority provided in [42 U.S.C. §7601(a)(1)]").

[59] *See infra* section III.D.

[60] *See infra* sections V, VI, VII, IX, XI.

necessary.[61] Yet, here, the agency fails to identify any specific statutory provision that renders the proposed regulation necessary. In failing to explain why the rule is necessary to implement the Clean Air Act, the agency confirms the underlying weakness of the Proposal: it serves no statutory purpose.

Since the Proposal serves no purpose under the CAA, EPA lacks statutory authority to issue the rule under 42 U.S.C. §7601(a)(1). The agency improperly seeks to stretch out a gap-filling authority to side-step the statute and issue a regulation that is not necessary to implement any provision of the CAA.

B) EPA Unlawfully Fails to Identify Any Problem That Justifies the Issuance of a Binding Regulation.

EPA's Proposal is patently unnecessary. EPA has not demonstrated any problem for this rule to solve. This failure violates a basic principle of administrative law. An agency action is arbitrary and capricious where it fails to identify a problem that it must address.[62] EPA offers no explanation for why it now requires this binding regulation after decades of successfully conducting economic analyses under its own guidance, which is better suited to the task. EPA attempts to bolster its case for the Proposal by noting that courts have read certain provisions of the CAA to require some consideration of cost, but the Act does not mandate BCA across all of its provisions. In fact, certain provisions of the Act prohibit cost considerations altogether when setting standards,[63] and the other sections provide a range of approaches for how to consider costs when setting standards.[64] The agency thus requires a flexible framework to apply its analyses across the Act, which is more readily implemented through guidelines.[65]

EPA next tries to cobble together support for the Proposal by pointing to statutes and executive orders "in place for decades formally requiring the preparation of BCA in the development of major Federal regulations."[66] But rather than demonstrate a need for the Proposal, they prove precisely the opposite. For decades, EPA has fulfilled these requirements by following its own guidance, including the *Guidelines for Preparing Economic Analyses* ("*Guidelines*").[67] EPA has additionally followed the direction of OMB's Circular A–4 since its

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[61] *See, e.g.*, Oil and Natural Gas Sector: Emissions Standards for New, Reconstructed, and Modified Sources, 82 Fed. Reg. 51,788, 51,790 (Nov. 8, 2017) ("The Agency's determination that [a] regulation [is] necessary" is entitled to *Chevron* deference "as long as it provide[s] a reasoned explanation.").

[62] *See, e.g.*, *Nat'l Ass'n of Fed. Employees v. Vilsack*, 681 F. 3d 483, 485-86 (D.C. Cir. 2012) (concluding that identifying a legitimate governmental interest without foundation that the problem exists is "a solution in search of a problem" and arbitrary).

[63] *See Whitman v. American Trucking Ass'ns, Inc.*, 531 U.S. 457, 486 (2001) ("*American Trucking*"); 42 U.S.C. § 108(a)(1)(A), (B).

[64] Congressional Research Service, *Cost and Benefit Considerations in Clean Air Act Regulations* (May 5, 2017) at 2-9, https://crsreports.congress.gov/product/pdf/R/R44840/4.

[65] *See infra* section III.D.

[66] 85 Fed. Reg. at 35,614.

[67] EPA, Office of Policy, National Center for Environmental Economics, *Guidelines for Preparing Economic Analyses* (2010), https://www.epa.gov/environmental-economics/guidelines-preparing-economic-analyses ("*Guidelines*"). *See also*, 85 Fed. Reg. at 35,615; website for *Guidelines*. The *Guidelines* were published in 2010, updated in 2014, and are currently being reviewed. The first *Guidelines* built upon related guidance first issued in

release in 2003. Both of these documents remain in effect today. As EPA summarizes, these two policies complement one another to direct EPA in how to increase transparency and "conduct BCA and other types of economic analyses" to enhance compliance with existing laws.[68] EPA identifies no gap left by these two policies for the Proposal to fill.

As EPA acknowledges, the agency is currently reviewing its *Guidelines*,[69] which provide a more appropriate mechanism to direct the agency in its BCAs.[70] The Proposal offers no compelling rationale for why the agency must now promulgate a regulation on the same topic when it has successfully utilized its *Guidelines* for decades and could issue any appropriate changes through the pending review process. While making reference to unidentified commenters' recommendations for a binding rule and concerns over an alleged inadequate adherence to the *Guidelines*,[71] nowhere does the Proposal identify any existing problem or substantiate how a binding regulation would add value. The Proposal fails to identify any instance of alleged inconsistencies, overestimated or double-counted benefits, inaccurate baselines, underestimated costs, or any other issue. Moreover, even if any of these issues had occurred, the Proposal offers no explanation of how it would change anything from current practice to fix these particular issues—to the extent that a rule even could.

The Proposal appears to implicitly adopt an assumption that the agency has historically underestimated costs or overestimated benefits. But as discussed in section II of this comment, such an assumption contradicts the evidence: the benefits of the CAA protections are routinely underestimated, while the costs have been less than anticipated. Despite these well-documented tendencies to undercount the net benefits of clean air protections, the benefits of the Clean Air Act have been found to exceed costs many times over. During the Obama Administration, EPA estimated that the CAA's benefits between 1990-2020 would exceed its costs by a factor of 30 to 1 and possibly much more.[72] EPA found similar results after conducting benefit-cost analyses of individual regulations. In its review of the 55 economically significant CAA regulations promulgated from 2001 to 2016, EPA found only two in which it estimated costs exceeded benefits.[73]

By contrast, the Proposal arbitrarily and unlawfully fails to consider the possibility that EPA may be underestimating benefits or overestimating costs. The Proposal displays an unexplained, one-sided focus on reducing estimated benefits and increasing estimated costs of clean air protections, entirely failing to assess ways that EPA has historically underestimated benefits and overestimated costs. Nor does the agency consider whether systematic changes are needed in order to fully account for benefits. To the extent that EPA attempts to manufacture a

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December of 1983 as the *Guidelines for Performing Regulatory Impact Analysis* and later revised in the late 1990s. In September of 2000, EPA issued its first *Guidelines for Preparing Economic Analyses*, which it has continued to periodically revise. *See Guidelines* at 1-1.

[68] 85 Fed. Reg. at 35,615.

[69] 85 Fed. Reg. at 35,615 n.13.

[70] *See infra* section III.D.

[71] 85 Fed. Reg. at 35,617.

[72] EPA 2011 Study at 7-8.

[73] Congressional Research Service, *Clean Air Act: A Summary of the Act and Its Major Requirements*, (Feb. 25, 2020), https://fas.org/sgp/crs/misc/RL30853.pdf at 11-12 (CRS table based on OMB data).

problem to solve, it has reviewed that "problem" unlawfully. It is arbitrary and capricious to "'entirely fai[l] to consider an important aspect of the problem' when deciding whether regulation is appropriate."[74]

Given the lack of evidence of any harm that this Proposal could ameliorate, the Proposal presents a classic instance of an arbitrary "solution in search of a problem."[75] As the D.C. Circuit noted the same month that the Proposal was issued, "Normally . . . an agency regulation must be designed to address identified problems. Rules are not adopted in search of regulatory problems to solve."[76]

C) The Proposal Is a Substantive Rule Subject to Notice-and-Comment Rulemaking Requirements and Cannot Be Authorized by a Law Governing Procedural Rules.

EPA's claim that its authority under CAA Section 301 "extends to internal agency procedures" is irrelevant to this rulemaking.[77] The agency's description of the Proposal as a rule of "internal agency procedure"[78] is meritless in light of the evidence that the Proposal easily meets the criteria for a substantive rule: it would have a binding effect on the agency that would jeopardize the rights and interests of the public by affecting the stringency of clean air and public health protections under the Clean Air Act. Accordingly, EPA must abide by all notice and comment requirements under the Administrative Procedure Act ("APA"), including the obligation to consider and respond to all comments received.[79] Further, EPA is prohibited from relying on the Federal Housekeeping Act or any other authority that pertains only to internal rules of agency organization, procedure, or practice.

A "substantive rule" is not defined in the APA, but in distinguishing between "substantive rules" and "interpretive rules, general statements of policy, or rules of agency organization, procedure, or practice," courts have described "substantive rules" as those "affecting individual rights and obligations," a quality which helps identify which rules are "binding" or "have the force of law."[80] Conversely, agency actions which meet the requirements for a rule of agency organization, procedure, or practice for purposes of the APA are the opposite of substantive rules: they are those "that do not themselves alter the rights or interests of parties, although [they] may alter the manner in which the parties present themselves or their viewpoints

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[74] *Michigan v. EPA*, 135 S. Ct. at 2707 (quoting *State Farm*, 463 U.S. at 43).

[75] *Nat'l Ass'n of Fed. Employees*, 681 F.3d at 485-86; *Nat'l Fuel Gas Supply Corp. v. FERC*, 468 F.3d 831, 840-41 (D.C. Cir. 2006) ("Professing that an order ameliorates a real industry problem but then citing no evidence demonstrating that there is in fact an industry problem is not reasoned decisionmaking."); *Sorenson Commc'ns v. FCC*, 755 F.3d 702, 709-10 (D.C. Cir. 2011) (similar).

[76] *N.Y. Stock Exch. LLC v. SEC*, 962 F.3d 541, No 19-1042, slip op. at 27 (D.C. Cir. 2020) (internal citations omitted).

[77] 85 Fed. Reg. 35,613.

[78] *Id.*

[79] *See* 5 U.S.C. § 553(b)(A).

[80] *Chrysler Corp. v. Brown*, 441 U.S. 281, 301-02 (1979) (quoting *Morton* v. *Ruiz*, 415 U.S. 199, 232, 235-36 (1974)).

to the agency."[81] The Proposal is a substantive rule, meeting the criteria for a binding nature that alters the rights and interests of parties beyond EPA.

Courts have found rules to be binding if they prescribe practices for weighing data and limit agency consideration of data that the public might otherwise legally submit and have weighed in the rulemaking process. For example, in *CropLife America v. EPA*, the D.C. Circuit Court of Appeals considered whether an EPA press release, which stated that the agency would not consider third-party-controlled human exposure studies for purposes of pesticide registration subject to case-by-case consideration of individual studies, was a substantive rule. Even though it was only a press release, the court held that it bound both EPA and registrants during pesticide registrations and so was a binding "substantive rule."[82] In reaching its decision, the court considered two established case law formulations for determining whether an agency action constitutes a substantive regulation.[83] Consistent with *Chrysler Corporation*, the two analyses overlap in recognizing that a substantive action "binds private parties or the agency itself with the 'force of law.'"[84] In *CropLife*, the court determined: "EPA's stated rule is binding on petitioners, who are now barred from relying on third-party human studies (even in cases where such studies formerly were approved), and is binding on the agency because EPA has made it clear that it simply 'will not consider' human studies."[85]

Similarly to *CropLife*, EPA would bind itself through the Proposal to follow the particular practices it has designated to evaluate health studies, conduct economic analyses, and consider the benefits of CAA rules. Additionally, EPA proposes to bind the public, including organizations such as those submitting this comment, who can no longer receive the benefit of EPA's consideration, in BCA, of valid studies and data (for example, certain concentration-response studies) that they submit to the agency as part of an administrative record for an agency action, but that the agency deems noncompliant with this rule. Under Clean Air Act Section 307(d)(4)(B)(i), as well as general principles of administrative law, such comments and data are required to become part of the record that must be considered as part of the rulemaking process. Moreover, this Proposal is even more clearly a substantive rule than the proposal in *CropLife* because it was published according to notice and comment procedures in the Federal Register, unlike the EPA action evaluated in *CropLife*. Courts have considered whether the agency used full public notice and comment procedures, which an agency need not use when promulgating a

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[81] *Batterton v. Marshall*, 648 F.2d 694, 707 (D.C. Cir. 1980).

[82] *CropLife Am. v. EPA*, 329 F.3d 876, 883 (D.C. Cir. 2003) ("*CropLife*").

[83] *See Cmty. Nutrition Inst. v. Young*, 818 F.2d 943, 946 (D.C. Cir. 1987) (quoting *Am. Bus Ass'n v. United States*, 627 F.2d 525, 529 (D.C. Cir. 1980)) (considering whether the agency action (1) "impose[s] any rights and obligations," or (2) "genuinely leaves the agency and its decisionmakers free to exercise discretion"); *see also Molycorp, Inc. v. EPA*, 197 F.3d 543, 545 (D.C. Cir. 1999) (stating that the court considers "(1) the Agency's own characterization of the action; (2) whether the action was published in the Federal Register or the Code of Federal Regulations; and (3) whether the action has binding effects on private parties or on the agency").

[84] *Gen. Elec. Co. v. EPA*, 290 F.3d 377, 382 (D.C. Cir. 2002); *see also NRDC v. Wheeler*, 955 F.3d 68, 83 (D.C. Cir. 2020) ("A legislative rule is one that has legal effect or, alternately, one that an agency promulgates with the intent to exercise its delegated legislative power by speaking with the force of law. . . . Here, the 2018 Rule has independent legal effect beyond that compelled by *Mexichem* and reflects EPA's intent to exercise its delegated legislative power." (internal citation and quotation marks omitted)).

[85] *CropLife*, 329 F.3d at 881.

rule of agency procedure, as an indicator of a substantive rule.[86] While courts consider an agency's own characterization of its action, they disregard claims that conflict with the record. EPA's weak attempts to whitewash the Proposal by declaring it procedural make no difference.[87] "The agency's characterization of its own action is not controlling if it self-servingly disclaims any intention to create a rule with the 'force of law,' but the record indicates otherwise."[88]

The Proposal must also be considered a substantive rule because it would affect private rights and interests. An agency action that "trenches on substantial private rights and interests" cannot be a rule of agency organization, procedure, or practice.[89] By restricting the methodologies and data on which EPA may base final significant regulatory actions, EPA severely limits parties from relying on excluded studies and public health benefit considerations in advocating for particular safeguards, or petitioning the agency to take a specific action, as the statute authorizes them to do. Since the rule would substantively impact agency conclusions and regulations, it impacts private rights and interests for both the regulated community as well as for regulatory beneficiaries and public health. EPA's proposed action "encodes a substantive value judgment [and] puts a stamp of approval or disapproval on a given type of behavior" by requiring regulatory actions to be supported only by certain scientific and economic information deemed acceptable by the Proposal.[90]

Moreover, to the extent that this Proposal would advance Administrator Wheeler's intention[91] to preclude consideration of health and climate co-benefits, the effects on the American public would be enormous, clearly rendering this a substantive rule.[92] For example, in 2016, when reaffirming that regulation of power plants under Section 112 was appropriate, EPA correctly considered tens of billions of dollars of what the agency declared were health "co-benefits" of air toxics regulation (although some were actually the direct benefit of controlling the regulated pollution).[93] The disastrous impacts of an unlawful co-benefit preclusion were on

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[86] *See, e.g.*, *Long Island Care at Home, Ltd. v. Coke*, 551 U.S. 158, 172–73 (2007); *see also* 5 U.S.C. § 553(b)(3)(A); *Molycorp*, 197 F.3d at 545.

[87] 85 Fed. Reg. at 35,613.

[88] *CropLife*, 329 F.3d at 883 (citing *Gen. Elec. Co.*, 290 F.3d at 383-85); *see also, e.g.*, *Sugar Cane Growers Coop. of Fla. v. Veneman*, 289 F.3d 89, 95-96 (D.C. Cir. 2002).

[89] *Batterton v. Marshall*, 648 F.2d 694, 708 (D.C. Cir. 1980).

[90] *Am. Hosp. Ass'n v. Bowen*, 834 F.2d 1037, 1047 (D.C. Cir. 1987); *see also Pharm. Mfrs. Ass'n v. Finch*, 307 F. Supp. 858, 865 (D. Del. 1970) (finding that a regulation promulgating new criteria for clinical investigations that will meet the standards of evidence necessary to demonstrate the effectiveness of drug products, and excluding certain kinds of clinical investigations, was not merely a procedural rule, because it "did effect a material narrowing of the range of evidence which previously had been considered relevant in evaluating a drug's efficacy" "[b]ecause of the important clarification of acceptable testing standards effected by the . . . regulations," and "because of the substantial impact of the[] regulations on the drug industry. . . . ").

[91] The New York Times reported that Administrator Wheeler told reporters that the economic value of co-benefits would be calculated but no longer used to defend rules, explaining that "[c]o-benefits would not be used to justify the rule[.]" Coral Davenport & Lisa Friedman, *Trump, Citing Pandemic, Moves to Weaken Two Key Environmental Protections*, N.Y. Times (June 4, 2020), https://www.nytimes.com/2020/06/04/climate/trump-environment-coronavirus.html.

[92] See *infra* section IV for further discussion of co-benefits and why the Proposal cannot require the agency to ignore or subordinate consideration of co-benefits.

[93] EPA, *Supplemental Finding That It Is Appropriate and Necessary To Regulate Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units*, 81 Fed. Reg. 24,420, 24,438 (Apr. 25, 2016).

full display earlier this year when EPA reversed this legal finding by dismissing public health benefits valued at $37 billion to $90 billion each year, including the annual avoidance of 11,000 premature deaths, 4,700 heart attacks, 130,000 asthma attacks, and 540,000 lost work days.[94]

If EPA now were to finalize a *generalized* framework that ignores or devalues the importance of such co-benefits, it would significantly affect the agency's conclusions about issuing new protections and changing existing rules, significantly infringing on the public's interest in health protections under the CAA. As discussed above, OMB estimates that major rules issued by the Office of Air and Radiation between October 1, 2006 and September 30, 2016 cumulatively yield hundreds of billions of dollars in benefits for the American public including avoided deaths, heart attacks, and hospitalizations. This is a *conservative* approach to regulation—counting all of the benefits and costs of controlling air pollution. By contrast, the new methodologies laid out in the Proposal would fail to account for significant health and environmental benefits of the agency's actions—clearly in service of further intended rollbacks of existing CAA protections. Additional rollbacks, or artificial cost-related limits on the implementation of new required Clean Air Act protections, harm the health and well-being of hundreds of thousands of Americans.

If finalized, this Proposal would also establish a substantive rule because it would bind EPA to a certain method of BCA. That in turn would have direct legal consequences on the agency and significant impacts on the public by affecting EPA's ability to justify setting substantive clean air protections that safeguard public health.[95] Further, if this rule would effect a change in policy, then it by definition is a substantive rule—fundamental changes to agency policy have been consistently characterized by the courts as substantive.[96]

For the reasons laid out above, the Proposal is a substantive rule subject to the requirements of notice-and-comment rulemaking, and EPA is bound to consider the comments submitted to the record. Conversely, even if EPA's claim that the rule is procedural is somehow correct, then there would be no reason that the agency must implement these changes through regulations rather than through the *Guidelines* which, as discussed in section III.D, are better tailored to the task. Moreover, since the Proposal is a substantive rule, EPA's claim that CAA Section 301 authorizes the agency to issue procedural rules is irrelevant. By the same logic, the Proposal cannot be authorized by the Federal Housekeeping Act. Courts have consistently found that the Federal Housekeeping Act authorizes only rules of agency procedure, organization, or practice.[97] Moreover, EPA is not even one of the listed "executive departments" with

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[94] EPA, *Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards*, EPA-452/R-11-011, ES-3, ES-5—ES-6, Tables ES-3, ES-4 (Dec. 2011), https://www.epa.gov/sites/production/files/2015-11/documents/matsriafinal.pdf.

[95] *See NRDC v. Wheeler*, 955 F.3d at 90 (stating that a rule is final when it has "an immediate and practical" impact on rights and obligations).

[96] *See, e.g.*, *Mendoza v. Perez*, 754 F.3d 1002, 1021 (D.C. Cir. 2014) (a substantive regulation "supplements a statute, adopts a new position inconsistent with existing regulations, or otherwise effects a substantive change in existing law or policy"); *Rocky Mountain Helicopters, Inc. v. F.A.A.*, 971 F.2d 544, 546 (10th Cir. 1992) (a rule that "changes existing law, policy, or practice" is substantive).

[97] 5 U.S.C. § 301; *Chrysler Corp.*, 441 U.S. at 309-10; *City & Cty. of San Francisco v. Azar*, 411 F. Supp. 3d 1001, 1023 (N.D. Cal. 2019) (vacating regulations from the Department of Health and Human Services and explaining that defendants "mistakenly rely on their 'housekeeping authority' to support their authority to promulgate the rule" but

housekeeping authorities under this statute.[98] Regardless, authorities under the Housekeeping Act would not excuse EPA from any violation of environmental statutes like the CAA.

D) EPA's Proposal Is Arbitrary and Unnecessary in Light of EPA's Longstanding *Guidelines*, and Because It Risks Decreasing the Quality of EPA's Benefit-Cost Analysis.

EPA's Proposal to codify and constrain aspects of its benefit-cost analysis process is arbitrary and patently unnecessary in light of existing guidelines, risks stifling the agency's ability to adapt to future changes in BCA methodology and to flexibly apply its analysis to meet unique statutory and regulatory contexts, and could reduce the rigor with which BCA is conducted. As EPA notes, the agency is currently reviewing its *Guidelines for Performing Economic Analyses*,[99] and EPA acknowledges that for many years these *Guidelines* have complemented OMB's directions in Circular A-4 to provide the agency with "more detailed peer-reviewed guidance on how to conduct BCA and other types of economic analyses" to enhance compliance with existing law.[100] EPA has not identified any need to further describe or explain the BCA process through regulation, which is at best superfluous to the current *Guidelines* review process.

1. EPA's longstanding *Guidelines* support a better-tailored approach to BCA that can more easily adapt to reflect improvements in methodology and practice and offers more flexibility across diverse statutory and regulatory contexts.

EPA should withdraw this Proposal because it will severely limit the agency's ability to flexibly adapt to scientific changes in the methodology and best practice surrounding risk assessment and economic analysis. A 2017 study on federal agency guidance found that senior officials across federal agencies prefer to use guidance as opposed to legislative rules in "matters that involve uncertainty, either because the general matter being regulated . . . is likely to change rapidly, or because it is difficult to anticipate particulars that might arise in individual proceedings that would justify an ad hoc adjustment."[101] In the past, EPA has declined to promulgate regulations defining how certain analyses must be conducted for exactly this reason. For example, under the Hazardous Waste Permit Program, EPA authorizes a site-specific risk assessment as part of the permitting process, and the agency has explicitly declined to

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"[n]one of the statutes cited by defendants provide HHS with the authority to promulgate substantive rules," including the Housekeeping Act); *United States ex rel. O'Keefe v. McDonnell Douglas Corp.*, 132 F.3d 1252, 1255 (8th Cir. 1998) ("In recent years, several agencies have unsuccessfully attempted to find statutory authority for substantive regulations in the Housekeeping Statute."); *In re Bankers Trust Co.*, 61 F.3d 465, 470 (6th Cir. 1995) (holding regulation requiring subpoenaed party to refuse production of confidential information was not authorized by the Housekeeping Statute and "exceeded the congressional delegation of authority"); *Exxon Shipping Co. v. U.S. Dep't of Interior*, 34 F.3d 774, 776-78 (9th Cir. 1994) (holding that the Housekeeping Act did not authorize regulations allowing agency to withhold deposition testimony of federal employees).

[98] 5 U.S.C. § 101.

[99] 85 Fed. Reg. at 35,615 n.13.

[100] 85 Fed. Reg. at 35,615.

[101] Nicholas Parrillo, *Federal Agency Guidance: An Institutional Perspective*, Administrative Conference of the United States, at 30 (Oct. 12, 2017).

promulgate regulations defining how those assessments must be conducted.[102] The agency explained that "risk assessment—especially multi-pathway, indirect exposure assessment—is a highly evolving field" and that "any regulatory approach it might codify in this area is likely to become outdated, or at least artificially constraining, shortly after promulgation in ways that it cannot anticipate now."[103]

EPA explains in the Proposal that "risk assessments often provide key inputs to the development of EPA's health benefit estimates in a BCA," meaning benefit-cost analysis could be frequently influenced by the "highly evolving" nature of risk assessment.[104] As best practice methodology for BCA evolves to reflect scientific progress, EPA will be less able to adapt under the constraints of a binding and fixed rule. Past and planned updates demonstrate such evolution of frameworks for conducting BCA is standard matter of course that will continue. In just the last ten years, EPA's *Guidelines* have been updated multiple times, and the agency is reviewing the *Guidelines* even now.[105] Should EPA's substantive rule be finalized and conflict with future changes to the *Guidelines*' process, the agency would have to undergo a lengthy notice and comment process to make updates to its rule, as opposed to just updating the *Guidelines* already in existence. This could seriously delay its ability to adapt to changes in best practices and could hinder the promulgation of public health and environmental protections.

Additionally, guidance provides a better tool to tailor analyses to the diverse statutory and regulatory circumstances encompassed by the CAA. The Act's protections encompass a wide range of pollutants, program structures, and requirements for compliance that include a variety of different approaches to cost consideration. To protect the public health and welfare through the CAA, Congress directed the EPA Administrator to, among other things, set NAAQS; set emission standards for both stationary and mobile sources of air pollution; reduce emissions of 187 hazardous air pollutants that Congress itself listed in the statute; protect air quality in relatively pristine areas from significant deterioration; regulate fuels and fuel additives, both to protect public health and welfare and to prevent the impairment of emission control devices; require the use of renewable transportation fuels; control acid deposition; protect the stratospheric ozone layer by requiring the phase-out of ozone-depleting substances; issue permits and enforce the Act's emission limits; and develop and enforce Federal Implementation Plans in states that fail to implement the Act's requirements.[106] The Administrator's authority to carry out these tasks spans dozens of different sections and subsections of the CAA and varies from broad authority to protect public health with an adequate margin of safety to detailed requirements that specify numerical emission limits.

How the Administrator should, or should not, consider cost in accomplishing the myriad tasks and responsibilities of the Clean Air Act varies significantly across the programs.[107] While

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[102] *See Cement Kiln Recycling Coal. v. EPA*, 493 F.3d 207, 211 (D.C. Cir. 2007).

[103] *Id.* at 214 (quoting 70 Fed. Reg. 59,402, 59,512 (Oct. 12, 2005)).

[104] 85 Fed. Reg. at 35, 618.

[105] *See Guidelines* website, https://www.epa.gov/environmental-economics/guidelines-preparing-economic-analyses#howproduced (last visited July 17, 2020); *see also* 85 Fed. Reg. at 35,615 n.13.

[106] Congressional Research Service, *Cost and Benefit Considerations in Clean Air Act Regulations* at 2 (May 5, 2017), https://crsreports.congress.gov/product/pdf/R/R44840/4.

[107] *Id.* at 2-9.

many provisions of the Act specifically mention cost or economic considerations, others only imply it (e.g., where it requires a standard that is "practicable" or "reasonably achievable").[108] Many more do not mention or imply cost,[109] including those that require the NAAQS, which must be designed to protect public health with an adequate margin of safety and which the Supreme Court has read to prohibit cost considerations.[110] Guidance documents are better suited to flexibly accommodate the range of circumstances regulated under the CAA and the Act's diverse requirements for cost considerations.

Earlier this year, EPA proposed an additional rule on administrative procedures for issuing guidance that included a provision requiring that "significant guidance documents" as defined in Executive Order 13,891 go through notice and comment procedures.[111] EPA has cited no legitimate authority to issue the proposal on EPA Guidance and Administrative Procedures for Issuance of Public Petitions ("Guidance Proposal"). EPA claims authority to issue the Guidance Proposal under the Federal Housekeeping Act, but, as noted above, that statute does not include EPA in the list of Executive Offices granted housekeeping powers. Moreover, the Federal Housekeeping Act only grants authority for executive departments to issue rules of agency organization, procedure, or practice.[112] The Guidance Proposal is a substantive rule that exceeds the authorities of the Housekeeping Act. Accordingly, the Guidance Proposal is unlawful and should not affect the flexibility with which EPA can amend the *Guidelines* concerning analysis of costs and benefits.

EPA should continue to rely on its existing *Guidelines* to ensure the latest expertise is always incorporated into its analyses given the constantly changing and improving nature of this field. The agency is not only unauthorized to, but also has no need to issue an additional binding rule establishing further requirements for BCA, and EPA has not stated a compelling rationale for this Proposal to do so. The use of a binding legislative rule is unnecessary and patently undermines the goals of benefit-cost analysis under the CAA by creating barriers that could constrain adaptation to future improvements in methodology and practice.

2. EPA is already reviewing its longstanding *Guidelines* developed through a peer-reviewed process significantly more rigorous than the Proposal.

As EPA acknowledges, the agency is currently reviewing its existing *Guidelines* which already "establish a scientific framework for analyzing the benefits, costs, and other economic impacts of regulations and policies."[113] This is exactly what the Proposal posits to do. The Proposal acknowledges—and even praises—the thoroughness and accuracy of the current sources of guidance for conducting BCA and fails to provide any rationale as to why this rule is needed in addition to those credible resources. EPA's *Guidelines* are developed and updated by the agency's National Center for Environmental Economics, and all chapters undergo peer

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[108] *Id.* at 3-5 & Table 1.

[109] *Id.* at 5-8 & Table 2.

[110] *See American Trucking*, 531 U.S. at 486.

[111] EPA, *EPA Guidance; Administrative Procedures for Issuance and Public Petitions*, 85 Fed. Reg. 31,104, 31,106-07 (May 22, 2020).

[112] 5 U.S.C. § 101.

[113] 85 Fed. Reg. at 35,615.

review from EPA's Science Advisory Board, a panel of experts from outside the agency.[114] This comprehensive set of guidance first released in 2010 is over 400 pages in length and compiles research in environmental economics from hundreds of scholars[115] to guide EPA in producing evidence-based policy decisions that are not swayed by politically motivated outcomes.[116]

Further, EPA's current practice reflects OMB's Circular A-4, which provides guidance to agencies on the development of regulatory analysis under Executive Order 12,866.[117] The Proposal makes repeated reference to the methodologies laid out in EPA's *Guidelines* and Circular A-4 with frequent instruction to the reader to see those documents for best practices on establishing baselines, estimating costs and benefits, conducting uncertainty analysis, and other elements of BCA.[118] Specifically, OMB's Circular A-4 instructs agencies not to use only one formula for BCA and sets out a broader objective for agencies to achieve analytical consistency in estimating benefits and costs across regulations. Both requirements create potential points of contention with the Proposal, in which EPA puts forth formulaic criteria and imposes constraints on BCA under the CAA.[119]

3. EPA's Proposal is arbitrary and capricious in its departure from existing practice without a reasoned explanation, and it further undermines the role of science and economics in agency decision-making.

EPA does not provide a sufficient rationale to justify its harmful new restrictions on BCA under the CAA, especially given its veiled attempts to constrain the scope of literature review in assessing health endpoints and limit analysis of co-benefits.[120] Falling far short of that sufficiency threshold, EPA provided only a vague rationale for promulgating this rule: a purported aim to increase consistency and transparency in the BCA process in response to ANPR comments claiming an inadequate adherence to existing EPA *Guidelines* and OMB guidance.[121] However, EPA provides no specific facts or examples as to how the current BCA process lacks consistency and/or transparency. The D.C. Circuit maintains that an "Agency changing its course must supply a reasoned analysis indicating that prior policies and standards are being deliberately changed" and an "Agency may not gloss over or swerve from prior precedents without discussion."[122] Given the clear credibility and reliability of the peer-reviewed and longstanding methodologies—as acknowledged by EPA itself throughout the Proposal—it is arbitrary and capricious for EPA to constrain its methodologies and depart from previous practice without providing a fact-based and reasoned analysis.

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[114] *See Guidelines* website, https://www.epa.gov/environmental-economics/guidelines-preparing-economic-analyses#howproduced.

[115] *See generally Guidelines*.

[116] *See* Kevin Boyle & Matthew Kotchen, *Retreat on Economics at the EPA*, 361(6404) Science 729 (Aug. 24, 2018), https://science.sciencemag.org/content/361/6404/729.

[117] 85 Fed. Reg. at 35,615.

[118] *Id.* at 35,618-35,621.

[119] *Id.* at 35,620-21.

[120] *See, e.g., Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125 (2016) ("[O]ne of the basic procedural requirements of administrative rulemaking is that an agency must give adequate reasons for its decisions.").

[121] 85 Fed. Reg. at 35,617.

[122] *Greater Bos. Television Corp. v. FCC*, 444 F.2d 841, 852 (D.C. Cir. 1970).

This Proposal appears to be the latest in a series of actions to diminish the role of science in EPA's regulatory analyses. In 2018, EPA eliminated the Environmental Economics Advisory Committee of the Science Advisory Board, which had previously taken a leading role in peer reviewing analytical approaches to quantifying costs and benefits.[123] Also in 2018, the agency first proposed to restrict the scientific data and models on which it could rely in developing regulations—and then early this year issued a supplemental notice furthering this idea.[124] EPA has also adopted an opaque and non-scientific approach to distort the social cost of carbon identified by an inter-agency working group, enabling the agency to severely underestimate the environmental and public health impacts of climate change.[125] This Proposal is just EPA's latest effort to constrain the process of establishing public health and environmental protections. EPA is undermining the rigorous independent peer review that informs its current *Guidelines* and continuing its recent pattern of threatening the scientific basis of the agency's regulatory decision-making.

4. The Proposal arbitrarily restricts EPA's cost analyses, decreasing the quality of regulatory analyses and conflicting with statutory requirements.

Moreover, BCA is only one of a number of cost metrics available to fulfill requirements for robust regulatory analysis. Both OMB and EPA have recognized other metrics as potentially more effective and appropriate under certain circumstances. For example, in issuing the Mercury and Air Toxics Standards 2016 "Supplemental Finding That It Is Appropriate and Necessary To Regulate Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units," EPA utilized several different cost metrics to evaluate whether compliance with MATS is reasonable for the power sector.[126] There, EPA considered annual compliance costs as a percent of power sector sales, annual compliance capital expenditures compared to the power sector's annual capital expenditures, impacts on the retail price of electricity, and impacts on power sector resource capacity.

OMB also provides guidance on different viable tools to evaluate costs and benefits as part of rigorous regulatory analyses in Circular A-4. Circular A-4 acknowledges that there are important costs and benefits that cannot be monetized. In this guidance, OMB recognizes cost-effectiveness as an acceptable alternative for BCA in regulatory analyses—and that it may be the only possible method under certain circumstances. In particular, OMB notes the importance of the cost-effectiveness metric for public health and safety rulemakings. By the nature of its statutory purpose to protect the public health and welfare, many CAA rulemakings fall under this category. The *Guidelines*, and guidance more broadly, provide a much more flexible framework

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[123] *See* Kevin & Kotchen, *Retreat on Economics at the EPA*.

[124] EPA, *Strengthening Transparency in Regulatory Science*, 85 Fed. Reg. 15,396 (Mar. 18, 2020); 83 Fed. Reg. 18,768 (Apr. 30, 2018) (collectively, "Restricted Science proposal").

[125] Chris Mooney, *New EPA document reveals sharply lower estimate of the cost of climate change*, Wash. Post (Oct. 11, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/10/11/new-epa-document-reveals-sharply-lower-estimate-of-the-cost-of-climate-change/.

[126] EPA, *Supplemental Finding That It Is Appropriate and Necessary To Regulate Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units*, 81 Fed. Reg. 24,420, 24,438 (Apr. 25, 2016).

that can guide EPA in conducting robust analyses through a toolbox of cost metrics that can be tailored to meet a variety of circumstances.

The Proposal's requirement that "future significant proposed and final regulations promulgated under the Clean Air Act be accompanied by a BCA" would arbitrarily restrict EPA from fully utilizing the range of cost metrics necessary to complete robust public health and safety rulemaking. Such restrictions would hobble EPA from pursuing rulemakings ill-suited to BCA, diminishing the quality of regulatory analyses and health-based standards, and ultimately compromising the CAA's statutory purpose to protect public health and welfare. Additionally, it would also arbitrarily depart from prior practice.

E) EPA's Proposal Would Arbitrarily Incur an Unnecessary Risk of Increased Litigation.

If finalized, EPA's Proposal would likely subject the agency to future lawsuits, not only over the rule itself but also because the new methods required would impose an additional layer of analytical tasks divorced from the statutory mandate under which the agency is acting—tasks that could themselves be subject to separate claims. Regulatory deterrence, delays, and costs resulting from this litigation risk do not further—and indeed frustrate—the agency's mandates under the CAA and its mission to protect public health and the environment. Yet EPA has provided no analysis of the costs of such litigation risk. EPA cannot finalize its Proposal without fully examining this important aspect of the problem and explaining its reasoning for accepting this unnecessary litigation risk.[127]

Any final rule similar to the Proposal would likely lead to litigation that would not otherwise occur. These additional requirements are not innocuous boxes to check: even where the governing statute does not require EPA to conduct a BCA, "when an agency decides to rely on a cost-benefit analysis as part of its rulemaking, a serious flaw undermining that analysis can render the rule unreasonable."[128] Thus, although EPA claims that its rule is merely procedural,[129] failure to comply with its requirements could subject future rules to challenge on those grounds. Courts would ordinarily review a BCA deferentially,[130] upholding a rule even where the agency "did not intend to conduct a rigorous societal cost-benefit analysis" but instead compared costs and benefits "in broad strokes."[131] Under the Proposal, however, EPA would strip itself of discretion to compare costs and benefits as it sees fit for particular regulatory scenarios. Rather, noncompliance with the Proposal's convoluted requirements could amount to reversible error, compromising future rulemaking efforts. And even the threat of litigation presents a formidable deterrent to timely and efficient rulemaking and imposes its own costs.

Such litigation could lead to absurd outcomes that blatantly contradict the requirements of the Act. For instance, opponents of a NAAQS could try to sue the agency, alleging that EPA's

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[127] *See State Farm*, 463 U.S. at 43.

[128] *Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d 1032, 1040 (D.C. Cir. 2012).

[129] 85 Fed. Reg. at 35,613.

[130] *Nat'l Ass'n of Home Builders*, 682 F.3d at 1040.

[131] *Idaho Conservation League v. Wheeler*, 930 F.3d 494, 507-08 (D.C. Cir. 2019).

BCA does not fully comply with this rule—even though the CAA prohibits consideration of costs when setting the NAAQS. Thus, parties could attempt to block or delay a vital public health protection based on violations of a rule that is not required by the Act and that pertains to analysis the agency could not legally consider.

Unnecessary litigation risk stemming from this rule would inflict significant costs on EPA. Staff development of regulations and accompanying RIAs would become more time- and resource-intensive, such as by requiring entirely new, burdensome, and unnecessary tasks like assessing whether staff can disseminate data and models on which they relied.[132] Once a rule and its RIA are prepared, interagency review would be protracted as the agencies seek to establish, through multiple rounds of comment and transmittals, that the rule complies with the Proposal's numerous requirements. Such a future rule would also need to undergo close scrutiny by EPA's Office of General Counsel to ensure its defensibility under the Proposal's requirements. Then, once final, the agency would need to defend the rule against inevitable attacks on these grounds and, in all likelihood, re-propose and re-promulgate rules that courts hold invalid for noncompliance—a process that would entail the same needless burdens and delays. Thus, the costs to the agency from unnecessary litigation risk and lawsuits resulting from the Proposal would be manifold and substantial.

Costs to the public and regulatory beneficiaries would likely prove even greater, although EPA has offered no estimate of these costs in its Proposal. As an initial matter, the costs to the agency discussed above could rightly be viewed as public costs because the public funds the agency. Setting these costs aside, however, regulatory beneficiaries would experience significant losses in benefits from fewer, delayed, or invalidated regulations. Again, these losses would be attributable entirely to alleged violations of a rule that in no way enhances the quality of public health or environmental protections. It is arbitrary for the agency not to consider the full range of costs from unnecessary litigation risk associated with its Proposal, and EPA cannot finalize this Proposal or a similar rule until it does so.[133]

Moreover, EPA fails to explain why the additional litigation risk and additional lawsuits might be warranted. The CAA provides for judicial review of rules promulgated under that statute,[134] which the court may reverse if it finds them to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."[135] As noted above, this standard applies to the economic analyses EPA prepares to support its rules,[136] so the public already has a recourse if a rule relies on arbitrary economic analysis. There is no reason to believe that additional scrutiny beyond that which Congress provided for other components of a rule—which would be the effect of the Proposal's rigid requirements—is appropriate for EPA's assessment of costs and

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[132] *See* 85 Fed. Reg. at 35,627 (proposed 40 C.F.R. § 83.3(a)(12)). EPA's Restricted Science proposal makes clear that it would not require the agency to make available to the public all data and models underlying "pivotal regulatory science" and "pivotal science." *See* 85 Fed. Reg. 15,396, 15,402 (Mar. 18, 2020). The present Proposal, however, does appear to contemplate—and require—that EPA itself disseminate the data and models. *See* 85 Fed. Reg. at 35,627 (proposed 40 C.F.R. § 83.3(a)(12)).

[133] *State Farm*, 463 U.S. at 43.

[134] 42 U.S.C. § 7607(b).

[135] *Id.* § 7607(d)(9)(A)

[136] *Nat'l Ass'n of Home Builders*, 682 F.3d at 1040.

benefits. If there were some conceivable purpose for this rule, EPA could plausibly argue that an added level of review would be warranted. But this Proposal lacks any cogent purpose that would justify additional judicial review for compliance with its requirements.[137]

Given the agency's silence on this matter, it seems more likely that EPA is inviting litigation in order to impede or deter future regulation. It is also reasonable to expect that those with vested interests and ample resources to expend on litigation would be most successful in enforcing the Proposal's provisions—leading to an anti-regulatory bias in its application. These objectives are not valid grounds for rulemaking under the CAA, and in fact run directly contrary to the CAA's purposes and EPA's mission. EPA must abandon the Proposal.

IV. EPA IS NOT AUTHORIZED TO FINALIZE ANY RULE REQUIRING THE AGENCY TO IGNORE OR SUBORDINATE CONSIDERATION OF CO-BENEFITS, AND DOING SO WOULD BE CONTRARY TO LONGSTANDING PRACTICE AND EXISTING GUIDANCE, AND WOULD BE ARBITRARY AND CAPRICIOUS.

The agency is not authorized to finalize any rule *requiring* it to ignore or devalue the ancillary benefits (also known as "co-benefits" or "indirect benefits") of its Clean Air Act regulations. Not only is there no authority in the Act for it to do so, but that outcome would also arbitrarily depart from longstanding guidelines and policies maintained by EPA and the Office of Management and Budget, and furthermore would be arbitrary and capricious, as it would fail to take account of an important aspect of Clean Air Act regulation.

Moreover, any such requirement would not be a logical outgrowth of the Proposal. Despite the Administrator's statements suggesting that the Proposal is intended to preclude consideration of co-benefits, the published document contains no specific provisions that expressly disqualify or discredit co-benefits. Since EPA has not proposed any changes to how it accounts for co-benefits, finalizing any such changes would be unlawful. Nevertheless, these comments address the general need to properly account for co-benefits in a BCA in light of the Proposal's "presentational" requirement about co-benefits and because the agency's Proposal solicits comments on "how the Agency could take into consideration the results of a BCA in future rulemakings under specific provisions of the CAA" and "approaches for how the results of the BCA could be weighted in future CAA regulatory decisions."[138]

A) Statutory Language and Legal Precedent Regarding the Clean Air Act Support Consideration of Co-Benefits and Their Inclusion in Economic Analyses.

EPA's longstanding practice has been to evaluate and consider the co-benefits of its regulations. That approach is supported by D.C. Circuit and Supreme Court precedent. In *United States Sugar Corp. v. EPA*, the U.S. Court of Appeals for the D.C. Circuit upheld EPA's consideration of co-benefits in regulating the effects of reducing hazardous air pollutants

[137] *See supra* section III.B.

[138] 85 Fed. Reg. at 35,623.

("HAPs") from boilers, process heaters, and incinerators.[139] Specifically, the court held that EPA properly considered not only the direct benefits of reducing hydrogen chloride, but also the co-benefits of reducing other HAPs.[140] The court reasoned that the use of co-benefits conformed with the Clean Air Act's purpose, finding that "EPA was . . . free to consider potential co-benefits that might be achieved" from enforcing the more stringent standard.[141]

In *Michigan v. EPA*, Justice Scalia's opinion for the Court highlighted the importance of conducting a balanced regulatory analysis when deciding whether to regulate power plants under Section 112 of the Act.[142] In holding that EPA must consider costs when determining whether regulation was appropriate and necessary, the Court reasoned that "[c]onsideration of cost reflects the understanding that reasonable regulation ordinarily requires paying attention to the advantages *and* the disadvantages of agency decisions."[143] The Court's opinion offered a hypothetical in which regulation under Section 112, while serving to control HAP emissions, would have the collateral effect of causing new health harms—a factor that, according to the Court, EPA would necessarily have to consider in deciding whether regulation is "appropriate."[144]

The language of Section 112(n)(1)(A) itself also suggests Congress *expected* there to be significant co-benefits from co-pollutant reductions for various other Clean Air Act programs as well. The Administrator is required to perform a study of hazards from HAP emissions for power plants "after imposition of the requirements of this chapter."[145] This requirement clearly recognizes and anticipates the potential for co-benefit HAP emissions reductions from the implementation of other provisions of the Clean Air Act at electric generating units (for example, the acid rain requirements), that are not specifically targeted at HAP emissions reductions.

Section 111 of the Clean Air Act also shows Congress contemplated that EPA would consider co-benefits when promulgating Clean Air Act rules. Under Section 111, EPA rules set standards of performance which reflect "the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated."[146] EPA "must exercise its discretion to choose an achievable emission level which represents the best balance of economic, environmental, and energy considerations."[147] The statutory language and precedent indicate that EPA must consider indirect effects of regulation, including co-benefits.

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[139] 830 F.3d 591, 625 (D.C. Cir. 2016).
[140] *Id.* at 624-25.
[141] *Id.* at 625.
[142] *Michigan v. EPA*, 135 S. Ct. at 2707.
[143] *Id.*
[144] *See id.*
[145] 42 U.S.C. § 7412(n)(1)(A).
[146] *Id.* § 7411(a)(1).
[147] *Sierra Club v. Costle*, 657 F.2d 298, 330 (D.C. Cir. 1981).

Congress designed Section 111 to control new plants "to the greatest degree practicable" to achieve the "national goal of a cleaner environment."[148] Indeed, the current administration has also relied on co-benefits in its rules, including under Section 111. Though EPA's recent Affordable Clean Energy rule is targeted at CO_2 emissions from power plants, the rule's preamble also includes ancillary health impacts from concomitant variation in emissions of other pollutants.[149] Indeed, in ACE, ancillary impacts are key to EPA's determination that benefits exceed costs, given the minimal reductions in carbon pollution that the rule is expected to achieve.[150]

B) Accounting for Indirect Effects, Including Co-Benefits, Is an Established Principle of Economic Analysis.

Indirect effects, including ancillary or co-benefits and indirect costs, must be taken into account in comprehensive economic analyses, including EPA's regulatory impact analyses. Failing to account for co-benefits would be inconsistent with best practices for economic analysis. As the External Environmental Economics Advisory Committee ("E-EEAC")—which reconstituted in external form after EPA disbanded it as an SAB advisory committee—noted in its report on the Mercury and Air Toxics Standards, "When determining whether a policy promotes economic efficiency, properly estimated direct benefits and co-benefits (or costs) should count on an equal footing when making benefit-cost calculations."[151] The E-EEAC also noted that "statements in EPA and OMB documents on including ancillary benefits in the assessment of the benefits and costs of regulations build on an extensive academic literature that is unambiguous on this point."[152]

And EPA's own Science Advisory Board in its report on the MATS appropriateness finding withdrawal proposal noted that the agency's approach of categorically excluding co-benefits "departs from the Agency's longstanding practice and is contrary to both the Agency's guidance document on economic analysis (U.S. EPA 2014) and to the recommendations of the Office of Management and Budget (U.S. OMB 2003). As the agency's guidance has been previously reviewed by the SAB, excluding co-benefits is a departure from the Board's recommended practice."[153] The SAB Economic Guidelines Review Panel, which, as discussed above, is currently reviewing EPA's *Guidelines*, recently published a draft report recommending "explicit, consistent text throughout the report on the importance of accounting for all benefits

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[148] *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 434 n.14 (D.C. Cir. 1973) (citing S. Rep. No. 1196, 91st Cong., 2d Sess. 16 (1970)).

[149] 84 Fed. Reg. 32,520, 32,562, 32,572 (July 8, 2019).

[150] *Id.*

[151] External Environmental Economics Advisory Committee, *Report on the Proposed Changes to the Federal Mercury and Air Toxics Standards* (Dec. 2019), https://www.e-eeac.org/mats-report.

[152] *Id.*

[153] EPA Science Advisory Board, Science Advisory Board (SAB) Consideration of the Scientific and Technical Basis of EPA's Proposed Mercury and Air Toxics Standards for Power Plants Residual Risk and Technology Review and Cost Review (Apr. 9, 2020), https://yosemite.epa.gov/sab/sabproduct.nsf/LookupWebReportsLastMonthBOARD/4908A62FD4C0DE2285258549005B8797/$File/EPA-SAB-20-004+.pdf (citations omitted).

associated with a regulation or policy, regardless of whether any given benefit was the intended target of the regulation."[154]

C) Presidential Administrations of Both Parties Have Followed Recognized Economic Principles and Practices by Requiring Analysis of Co-Benefits.

The longstanding and (until now) uncontroversial practice of administrations of both parties has been to ensure that regulatory analyses focus on the overall societal costs and benefits (including indirect benefits and costs) expected to result from regulatory action.[155] In 1971, President Nixon initiated the first effort to establish comprehensive and centralized regulatory review, called the "Quality of Life Program."[156] This program established a process for agency consideration of information on environmental quality and public health and safety.[157] In 1974, President Ford issued Executive Order 11,821,[158] which directed detailed economic impact analyses for proposed regulations.[159]

President Carter would expand this comprehensive economic impact analysis with Executive Order 12,044,[160] and also signed the Paperwork Reduction Act, which established the Office of Information and Regulatory Affairs within the Office of Management and Budget.[161] In 1981, President Reagan signed Executive Order 12,291, which directed agencies, to the extent permitted by law, to refrain from regulatory action unless potential benefits to society outweigh potential costs and to set regulatory priorities with the aim of maximizing aggregate net benefits to society.[162]

President Clinton rescinded Executive Order 12,291 and issued Executive Order 12,866, which remains in effect and created the foundation for the current regulatory review process.[163] Executive Order 12,866 highlights the need for agencies to "assess *all* costs and benefits of

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[154] EPA Science Advisory Board, Draft SAB Peer Review of EPA's Revised Guidelines for Preparing Economic Analyses (June 2, 2020), https://yosemite.epa.gov/sab/sabproduct.nsf/ea5d9a9b55cc319285256cbd005a472e/40f2adc8d6e4bb868525857b007234d5/$FILE/6.2.20%20draft%20report.pdf.

[155] Kimberly M. Castle & Richard L. Revesz, *Environmental Standards, Thresholds, and the Next Battleground of Climate Change Regulations*, 103 Minn. L. Rev. 1349, 1424 (2019) (noting "EPA has consistently and over multiple presidential administrations considered both co-benefits and their mirror image, indirect costs, in evaluating the consequences of regulation").

[156] John D. Graham, Paul R. Noe, & Elizabeth L. Branch, *Managing the Regulatory State: The Experience of the Bush Administration*, 33 Fordham Urb. L.J. 953, 956 (2006).

[157] *Id.*

[158] Exec. Order No. 11,821, 39 Fed. Reg. 41,501 (Nov. 27, 1974), https://www.govinfo.gov/content/pkg/FR-1974-11-29/pdf/FR-1974-11-29.pdf.

[159] Graham et al., *Managing the Regulatory State* at 957.

[160] Exec. Order No. 12,044, 43 Fed. Reg. 12,661 (Mar. 23, 1978), https://www.foreffectivegov.org/sites/default/files/regs/library/eo12044.pdf.

[161] Paperwork Reduction Act of 1980, 44 U.S.C. §§ 3501–3521.

[162] Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (Feb. 17, 1981), https://www.archives.gov/federal-register/codification/executive-order/12291.html.

[163] Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993), https://www.archives.gov/files/federal-register/executive-orders/pdf/12866.pdf.

available regulatory alternatives, including the alternative of not regulating" and to consider non-quantifiable effects including potential economic, environmental, public health, and safety benefits.[164] Executive Order 12,866 also recognizes that as "some costs and benefits are difficult to quantify, [each agency shall] propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs," to the extent permitted by law and where applicable.[165] Therefore, while quantified benefits do not have to outweigh costs under this Executive Order, an agency must consider all regulatory benefits in deciding whether regulation is justified. President Obama's Executive Order 13,563 reaffirmed the principles of Executive Order 12,866, and directs agencies to "select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity)."[166]

The George W. Bush Administration supported the full accounting of societal effects of regulation by issuing the most formal, and still governing, guidance for agency RIAs in OMB Circular A-4, which details what the Office of Information and Regulatory Affairs ("OIRA") expects in a regulatory analysis for its purposes. Circular A-4 specifically notes that agencies should "look beyond the direct benefits and direct costs of [a] rulemaking and consider any important ancillary and countervailing risks."[167] Circular A-4 also states that agencies should "subtract the monetary estimate of the ancillary benefits from the gross cost estimate to yield an estimated net cost."[168]

Circular A-4 emphasizes the need for agencies to account for co-benefits that could change the outcome of a regulatory analysis. In particular, Circular A-4 states that "[a]nalytic priority should be given to those ancillary benefits and countervailing risks that are important enough to potentially change the rank ordering of the main alternatives in the analysis."[169] Circular A-4 goes on to note that "[i]n some cases the mere consideration of these secondary effects may help in the generation of a superior regulatory alternative with strong ancillary benefits and fewer countervailing risks."[170] Nothing in Circular A-4 suggests that co-benefits should not be given equal consideration with costs or that benefits falling outside of the intended scope of regulation are not appropriate to consider. Instead, Circular A-4 directs agencies to consider all effects of regulatory action. Failing to adequately consider all consequences of regulatory action would result in an inaccurate and unreasonable assessment of the overall impacts of a regulation.

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[164] *Id.* at 51,735 (emphasis added).

[165] *Id.*

[166] *Id.*

[167] Circular A-4 at 26. Indeed, the George W. Bush EPA made multi-pollutant strategies an organizing principle of its legislative objectives, including the Clear Skies bill, and also its implementation of the Clean Air Act. *See, e.g.*, EPA, *The Multipollutant Report: Technical Concepts & Examples* (2008), https://archive.epa.gov/airquality/aqmp/web/pdf/20080702_multipoll.pdf (promoting the idea that it is more efficient and cost-effective to implement regulatory strategies that address multiple pollutants at the same time).

[168] *Id.* at 12.

[169] *Id.* at 26.

[170] *Id.*

More recently, OMB weighed in on this issue in its *2017 Report to Congress on the Benefits and Costs of Federal Regulations and Agency Compliance with the Unfunded Mandates Reform Act*, noting "OMB encourages agencies to include in their analyses all reasonably foreseeable and reasonably expected ancillary effects, both benefits and costs."[171]

EPA's own economic analysis guidelines, adopted after extensive peer review, also instruct the agency to assess "all identifiable costs and benefits," including both direct effects "as well as ancillary benefits and costs."[172] The assessment of both direct and indirect effects is needed to "inform decision-making" and allow meaningful comparisons between policy alternatives."[173]

Accordingly, under multiple presidential administrations of both parties, EPA has consistently taken indirect benefits into account when evaluating regulations,[174] and recognized that ancillary effects such as reducing or increasing emissions of other pollutants are part of any proper benefit-cost analysis.

D) A Final Rule that Disqualifies These Benefits from Consideration or Treats Them Differently from Indirect Costs in Regulatory Decision-Making Would Be Arbitrary and Capricious.

When promulgating regulations, federal agencies may not "entirely fail[] to consider an important aspect of the problem"[175] and must provide a "reasoned explanation" for their departure from "facts and circumstances that underlay or were engendered by the prior policy."[176] Failure to satisfy these requirements renders agency action arbitrary and capricious, and therefore unlawful under the APA.[177] The Clean Air Act was enacted to "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare."[178] Any rule that would require EPA to ignore or hinder the agency's ability to consider the co-benefits of regulations would be inconsistent with the Act's purpose of promoting public

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[171] The Report can be accessed at https://www.whitehouse.gov/wp-content/uploads/2019/12/2019-CATS-5885-REV_DOC-2017Cost_BenefitReport11_18_2019.docx.pdf.

[172] *Guidelines* at 11-2.

[173] Id. at 7-1.

[174] *See e.g.*, 52 Fed. Reg. 25,399, 25,406 (July 7, 1987) (in issuing advance notice for new source performance standards for municipal waste combustors, noting intent to "consider the full spectrum of the potential impacts of regulation," including "indirect benefits accruing from concomitant reductions in other regulated pollutants"); 56 Fed. Reg. 24,468, 24,469 (May 30, 1991) (in proposing performance standards and emission guideline for landfill gases, justifying the regulation partly on "the ancillary benefit of reducing global loadings of methane"); 63 Fed. Reg. 18,504, 18,585-86 (Apr. 15, 1998) (analyzing the indirect benefits of reducing co-pollutants like volatile organic compounds, particulate matter, and carbon monoxide from emissions standards addressing HAP emissions from pulp and paper producers); 72 Fed. Reg. 8428, 8430 (Feb. 26, 2007) ("Although ozone and PM2.5 are considered criteria pollutants rather than 'air toxics,' reductions in ozone and PM2.5 are nevertheless important co-benefits of this proposal."); 75 Fed. Reg. 51,570, 51,578 (Aug. 20, 2010) (considering indirect benefits of regulating HAP emissions from combustion engines).

[175] *State Farm*, 463 U.S. at 43.

[176] *FCC v. Fox Television Stations*, 556 U.S. 502, 516 (2009).

[177] 5 U.S.C. § 706.

[178] 42 U.S.C. § 7401(b)(1).

health and welfare and could require the agency to ignore important effects of its rulemakings. Any such rule would be arbitrary and unlawful.

Furthermore, when public health and environmental protections are being rescinded, the agency must consider the indirect costs of foregone co-benefits. Co-benefits and indirect costs must be treated similarly because they are opposite sides of the same coin,[179] as the same environmental, public health, or economic impacts can be considered co-benefits or indirect costs depending on whether a rule imposes regulatory requirements or rescinds existing requirements.[180] As discussed above, equal treatment and inclusion of co-benefits and countervailing risks is consistent with OMB Circular A-4, and EPA's Proposal provides no explanation to support changing this longstanding policy.

The logic of the Court in *Michigan* also rules out an arbitrarily selective approach to benefit-cost analysis. In explaining the flaws in EPA's interpretation that cost is "irrelevant" in determining appropriateness, the Court considered a hypothetical scenario in which pollution controls for HAP emissions from power plants reduce HAP emissions but have the unfortunate side effect of harming human health. The Court said:

> The Government conceded that if the Agency were to find that emissions from power plants do damage to human health, but that the technologies needed to eliminate those emissions do even more damage to human health, it would still deem regulation appropriate. See Tr. of Oral Arg. 70. No regulation is 'appropriate' if it does significantly more harm than good.[181]

Under the logic of *Michigan*, the effects of a government action on life and health are an important component of whether such action is "appropriate." The Court's hypothetical was clearly describing a regulation that would reduce HAP emissions but, in doing so, cause collateral harm to human health, which would be considered an indirect cost or countervailing risk. Those costs are logically indistinguishable from the indirect benefits to public health associated with reductions in co-pollutants.

As discussed above, it has been longstanding agency practice to include co-benefits in economic analyses of EPA's Clean Air Act regulations, and even the Proposal acknowledges that "BCA requires a comparison of total social benefits and total social costs."[182] Any new requirements to ignore or devalue these benefits would be inconsistent with established practice, existing OMB guidance, and EPA guidelines, and the agency would need to acknowledge and

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[179] Dan Farber, *The Case for Co-Benefits: Ignoring Co-Benefits Violates Well-Established Legal Principles*, Legal Planet (Sept. 24, 2018), https://legal-planet.org/2018/09/24/the-case-for-co-benefits/.

[180] Castle & Revesz, *supra* n.155, at 1435-36 (2019) (noting indirect benefits and costs are "merely descriptors that helpfully depict whether effects are positive or negative and they provide no justification for focusing on some effects while ignoring others").

[181] 135 S. Ct. at 2707.

[182] 85 Fed. Reg. at 35,622.

"provide a reasoned explanation for the change."[183] EPA's Proposal provides no such explanation and cannot require the agency to ignore an important aspect of a problem, so to the extent this effort would result in inconsistent treatment of indirect costs and benefits by devaluing or ignoring co-benefits, it would be arbitrary and unlawful.

E) EPA Should Retain Discretion to Present Information About Costs and Benefits as Appropriate Depending on the Context, Rather than Creating Prescriptive Requirements That May Be Less Helpful or Transparent than Past Practice.

EPA's proposed new requirement that the preambles of CAA rules must include an additional presentation of results that excludes co-benefits is not supported by the agency's longstanding practice, and has no basis in mainstream economic understanding. Nor is such an alternative presentation mentioned in OMB Circular A-4 or EPA's *Guidelines*. Those guidance documents direct that when promulgating Clean Air Act regulations, EPA must identify the full range of benefits expected to result and the pollutants they are associated with, in preparing the regulatory impact analyses accompanying Clean Air Act rules. While the current Proposal does not include a requirement to entirely exclude co-benefits from the agency's analysis, the presentational requirement is both arbitrary and unnecessary. It is unclear why EPA would even consider creating rigid new prescriptive requirements that would impair its own ability to continue the transparent presentation of costs and benefits.

Furthermore, EPA's Proposal fails to grapple with the reality that the distinction between benefits that are supposedly "targeted" and those that are not is not always clear, and attempting to disaggregate these benefits can be difficult or confusing. For example, for the 2012 MATS rule, EPA evaluated benefits from reducing HAPs as direct benefits of the rule, while benefits from reducing fine particulate matter were considered co-benefits. But in fact, certain metallic HAPs are emitted as particulate matter, so limiting them as HAPs due to their hazardous properties necessarily yields benefits for ambient particulate matter concentrations. Furthermore, while Section 112 deals with HAPs, the 2012 MATS rule actually targets fine particulate matter and SO_2 as surrogates for HAPs, providing power plants alternative means of compliance. In other words, the pollutants that are primarily targeted by the statute are not necessarily the only harmful pollutants that may properly be controlled by the regulation in pursuit of those statutory objectives.[184]

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[183] *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125 (2016). *See also Physicians for Social Responsibility v. Wheeler*, 956 F.3d 634, 644 (D.C. Cir. 2020) (noting that APA requirement for a reasoned explanation is especially important when "an agency changes course").

[184] The CAA legislative history shows that Congress intended for EPA to consider co-benefits when setting standards under Section 112: "When establishing technology-based standards under this subsection, the Administrator may consider the benefits which result from control of air pollutants that are not listed but the emissions of which are, nevertheless, reduced by control technologies or practices necessary to meet the prescribed limitation. For instance, control technologies that reduce the emission of volatile organic compounds which are listed pursuant to this subsection may also have the effect of limiting other VOC emissions. These other compounds, although not listed, would be precursors of ozone pollution and control, even in attainment areas, may produce substantial health and environment benefits." Sen. Rep. 101-228 (reporting S.1630, the Senate version of the CAA Amendments), 101st Cong. (Dec. 20, 1989).

F) Despite the Administrator's Statements Strongly Suggesting that His Intention Is to Finalize a Rule Discounting or Not Counting Co-Benefits at All, in Fact No Such Provision Was Proposed and No Rationale Provided, Thereby Denying the Public the Opportunity to Comment.

The text of the Proposal contains no specific requirements regarding EPA's consideration of co-benefits, despite Administrator Wheeler's public comments that under the Proposal "[c]o-benefits would not be used to justify [a] rule."[185] Administrator Wheeler has also referred to the established economic practice of calculating and including co-benefits as "playing a shell game,"[186] and has claimed that the Proposal corrects a supposedly dishonest accounting method the previous administration used to justify costly, ineffective regulations. These statements are contradicted by the text of the preamble, which clearly states that the agency "is not proposing to specify how or whether the results of the BCA should inform significant CAA regulatory decisions."[187]

Despite the Administrator's statements, EPA's Proposal provides no indication of a change to the agency's longstanding and required reliance on all benefits, including co-benefits, to justify its regulations under the Clean Air Act. Therefore, no new provisions backing away from that approach can be included in any final rule without a supplemental notice detailing statutory authority and an explanation of the basis and purpose for such a change—and what specifically the agency proposes to do—and providing additional opportunity for public comment.[188]

V. EPA'S PROPOSED REQUIREMENTS FOR CONSIDERATION OF CONCENTRATION-RESPONSE STUDIES—AND HEALTH ENDPOINTS GENERALLY—ARE ARBITRARY.

As EPA acknowledges, the rigor of any given BCA is a product of the mechanisms by which the analysis is conducted as well as the quality and integrity of the data used to inform that analysis. With its proposed requirements for quantifying health endpoints to be included in a BCA, including the treatment and use of concentration-response studies, the agency would arbitrarily and irreparably damage the quality of the analysis and misrepresent the evidence on which it relies. As a result, such manipulation of input data would undermine and invalidate the integrity of any ensuing analysis. These proposed requirements are all the more concerning given that they would affect a core endpoint considered in Clean Air Act rulemakings: human health. Despite the magnitude of the consequences of these proposed requirements, however, EPA did not adhere to best practices in their development. Instead, it is evident that these proposed requirements, which would manipulate and constrain the health endpoints included in CAA BCAs to potentially devastating public health effect, are arbitrary, following neither economic best practices, nor established scientific methods, nor any sound practice at all.

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[185] Coral Davenport & Lisa Friedman, *Trump, Citing Pandemic, Moves to Weaken Two Key Environmental Protections*, N.Y. Times (June 4, 2020), https://www.nytimes.com/2020/06/04/climate/trump-environment-coronavirus.html.

[186] *Id.*

[187] 85 Fed. Reg. at 35,623.

[188] 5 U.S.C. § 553; 42 U.S.C. § 7607(d).

A) Consideration of Outcome in Choice of Model Fundamentally Contradicts the Scientific Method.

Selection of scientifically valid concentration-response functions should depend on the strength of the available scientific evidence informing the relationship between the pollutant and response. However, the EPA Proposal indicates that "[d]ecisions should also consider the sensitivity of net benefits to the choice of concentration-response function."[189] This statement is ambiguous and appears to directly contradict other language guiding the agency's choice of concentration-response models. To the extent EPA intends for this to mean sensitivity of net benefits should influence choice of model, this approach would run counter to the scientific method and would incentivize choice of models that provide a more politically desirable answer in the benefit-cost analysis, raising scientific integrity questions. Because the Proposal indicates the agency will choose models based only on scientific quality, it is unclear how such an arbitrary and inconsistent provision facilitates a scientific assessment and indeed creates risks to the contrary. In addition to contradicting broader scientific norms, this provision also ignores longstanding accepted principles in the fields of risk assessment and environmental health, which have well-established methods for assessing the strength and breadth of scientific evidence in assessing risk from environmental contaminants.[190] As EPA's *Framework for Human Health Risk Assessment to Inform Decision Making* explicitly notes, "the Framework does not allow for the manipulation of the risk assessment to support predetermined policy or management choices. As articulated by the [National Research Council] in the *Silver Book*, '[T]he conduct of risk assessments used to evaluate the risk-management options [is] in no way to be influenced by the preferences of risk managers.'"[191]

B) Restrictions on Data Sources, Location, and Population Are Unsupported by Scientific Norms and Arbitrarily Exclude Valid Research.

To determine the appropriate concentration-response functions to be applied, consideration of the best available scientific evidence is necessary; yet, the Proposal arbitrarily restricts the ability of the agency to fully consider all available data sources. The Proposal asserts that epidemiological studies considered in EPA analysis must meet the following criteria, among others: "(b) the study location must be appropriately matched to the analysis; and (c) the study population characteristics must be sufficiently similar to those of the analysis."[192]

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[189] 85 Fed. Reg. at 35621.

[190] National Academies, *Science and Decisions: Advancing Risk Assessment* (2009), https://www.nap.edu/catalog/12209/science-and-decisions-advancing-risk-assessment (relevant portions incorporated into the record by reference); EPA, Preamble to the Integrated Science Assessments (ISA), EPA/600/R-15/067, 2015; Richard E. Peltier and Gretchen T. Goldman, *It's not about transparency: politics is intruding into USEPA science and it could cost the public's health*, 30(4) Journal of Exposure Science & Environmental Epidemiology 594-95 (May 2020); Gretchen T. Goldman & Francesca Dominici, *Don't abandon evidence and process on air pollution policy*, 363(6434) Science 1398-1400 (Mar. 2019), http://science.sciencemag.org/cgi/content/full/science.aaw9460.

[191] EPA, *Framework for Human Health Risk Assessment to Inform Decision Making*, EPA/100/R-14/001 (2014) (citing National Academies (2009) at 244) (relevant portions incorporated into the record by reference).

[192] 85 Fed. Reg. at 35,621.

Such requirements are arbitrary and unscientific. The Proposal fails to consider that, for certain pollutants and in certain regulatory contexts, the best available science may consist of studies conducted in different locations and focused on different populations. Such studies may still provide strong evidence as to the health impacts of pollution, and should not be discarded based on the arbitrary criteria in the Proposal.[193] In addition, the agency fails to adequately define "appropriately matched" and "sufficiently similar" and such vague language risks rejection of scientifically valid studies due to a narrow interpretation of alignment between the study and the EPA proposal being analyzed.

Similarly, the proposed requirement to consider the "age of the air quality data,"[194] as opposed to the *quality* of the air quality data, again threatens to rule out scientifically valid studies for arbitrary, ambiguous, and unscientific reasons. Such an outcome runs counter to the longstanding, science-backed EPA process of assessing all relevant reliable scientific studies, inclusive of studies conducted in different locations and on different populations.[195] Further, existing EPA scientific literature review processes already account for excluding studies when they fail to meet quality standards; these added restrictions, therefore, would not serve to address any identified gaps in processes, but rather arbitrarily hinder the agency's ability to develop science-based standards.[196] Further, it is unclear whether the agency has considered the use of multi-pollutant concentration-response functions and the Proposal fails to account for how such functions would be treated under this rule.

C) Pooling of Concentration-Response Functions and Forced Consideration of Alternative Models Are Scientifically Questionable and Arbitrary.

The draft rulemaking includes several provisions that would force arbitrary and unscientific inclusion of alternative models and lower-quality studies in determining concentration-response functions. The Proposal asserts that the agency "would quantify risks using separate concentration-response relationships and, if appropriate, pool, or combine, the results (e.g. in a meta-analysis) as means of providing a broader representation of the effects estimate" and that "EPA would characterize multiple concentration-response functions reflecting the full set of studies as a means of providing a broader representation of the effects estimate, including high quality studies that do not find a significant concentration-response relationship."[197]

These proposed requirements present an end-run around the informed judgment of EPA experts. Historically, a broad range of models have been considered in risk assessment and EPA experts have had deference to assess the body of evidence from animal and human studies to determine the appropriate model. The National Academies of Sciences, Engineering, and Medicine in 2009 published a report concluding the importance of EPA's ability to assess

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[193] For example, the National Academies' 2009 report *Science and Decisions* underscored that probative information on the health impacts of some pollutants may derive from in vitro studies or animal studies. *See Science and Decisions,* p. 156-57.

[194] 85 Fed. Reg. at 35,621.

[195] Peltier & Goldman, *It's not about transparency* at 594-595.

[196] EPA, Preamble To The Integrated Science Assessments.

[197] 85 Fed. Reg. at 35,621.

available evidence and make appropriate decisions.[198] Now, the agency is proposing requirements that would undermine that ability.

However, these strictures are not just arbitrary—they threaten to corrupt the quantification of health endpoints included in Clean Air Act BCAs. It is simply not scientifically justified to arbitrarily force pooling results from different studies, nor to blend concentration-response functions from different studies. The agency fails to define when such "pooling" would be appropriate, a critical distinction given that universal application is not supported by established scientific methods and could lead to misrepresentations of the available evidence. In particular, inappropriate pooling across studies could dilute observed effects in high quality studies that should be given greater weight, rather than pooled with studies that found little or no effect. For example, there is increasing evidence that many pollutants of primary interest to EPA, such as particulate matter and ozone, follow a linear or near linear non-threshold concentration-response function, even at low levels. This Proposal would preclude the agency from appropriately reflecting this increasing evidence because it would require blending of potentially divergent studies and alternative concentration-response functions regardless of their scientific rigor. Arbitrarily advanced and arbitrarily enforced, this effort would not lead to increased transparency—as the Proposal asserts is its aim—but rather confuse and distort understanding of pollutant effects. Instead, EPA's specific emphasis on ensuring the inclusion of studies that "do not find a significant concentration-response relationship"[199] reveals its clear intent: to override scientific expertise and bias results in favor of weaker pollution protections.

Concerningly, scientifically unjustified weight given to alternative models and pooling and blending of scientific assessments between pollutants and health outcomes is likely to disproportionately affect the sensitive populations that EPA is charged with protecting. Under the NAAQS, for example, EPA is required to set standards requisite to protect public health with an adequate margin of safety. The margin of safety must protect sensitive subpopulations, for whom adverse health effects are observed at lower concentrations.[200] For ozone and particulate matter, for example, evidence suggests that health effects (including mortality, cardiovascular effects, and respiratory effects) below the current NAAQS are more pronounced for the elderly, children, low-income individuals, and African Americans.[201] As a result, any pooling and blending of models and concentration-response functions will dilute or eliminate observed effects in sensitive subpopulations, inhibiting the ability of the agency to protect these groups, despite its mandate. Thus, assessment of costs and benefits of EPA actions under this Proposal is likely to disproportionately harm these sensitive populations.

Additionally, the Proposal forces EPA to consider alternative concentration-response functions for each endpoint, as well as "demonstrate the sensitivity of the choice of the concentration-response function on the magnitude and the uncertainty associated with air

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[198] National Academies, *Science and Decisions*.

[199] 85 Fed. Reg. at 35,621.

[200] *See, e.g.*, *Am. Farm Bureau Fed'n v. EPA*, 559 F.3d 512, 525-26 (D.C. Cir. 2009).

[201] Di Qian et al., *Air Pollution and Mortality in the Medicare Population*, 376 New England Journal of Medicine 2513 (2017), https://www.nejm.org/doi/full/10.1056/NEJMoa1702747; EPA, Integrated Science Assessment for Ozone and Related Photochemical Oxidants (2020), https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=348522.

pollution-attributable effects."[202] Specifically, the Proposal demands that the agency characterize "[t]he variability in the concentration-response functions across studies and models, including plausible alternatives."[203] Such requirements are arbitrary, undefined, and may inhibit the agency's ability to conduct benefit-cost analyses effectively. Furthermore, the litany of characterization requirements the Proposal would impose on EPA analyses threaten to burden the agency so greatly as to paralyze its ability to make forward progress. Again, then, instead of benefitting the benefit-cost analysis process, these requirements could irreparably derail them—and for no scientific or public health gain.

EPA must be able to consider a range of models when choosing appropriate concentration-response functions and rely on weight of evidence and the advice of experts to choose appropriate models that protect public health including the health of sensitive subpopulations, rather than the mandate of an arbitrary rule. Similar to EPA's Restricted Science proposal,[204] this Proposal exploits scientific uncertainties in ways that tend toward less pronounced concentration-response functions.[205] The threatened effect is one of manipulated findings and distorted evidence pointing to rules that ignore the scientific evidence.

D) Extending the Proposal's Risk Assessment Requirements to All Significant Clean Air Act Rulemakings Would Be Arbitrary and Capricious, as Well as a Setback for Human Health, Contrary to the Very Purposes for Which the Clean Air Act Was Enacted.

In Section V.B. of the Proposal, *Other Areas of Solicitation for Public Comment,* the agency returns to the topic of quantifying health endpoints and conducting risk assessments, asking whether the Proposal's requirements should be expanded to apply "to all risk assessments used in CAA significant rulemakings."[206] Given the topic's treatment in the Proposal—requiring multiple departures from science and best practice, placing significant analytical burdens on a resource-constrained agency, and repeatedly attempting to bias risk assessment results in favor of lessened pollutant impacts—the related proposed requirements should not be advanced in the present pursuit, let alone expanded to apply to CAA significant rulemakings more broadly. Beyond the disastrous consequences these draft requirements would have on the agency's ability to fully engage with its mission to protect human health and the environment, it would also be nonsensical and contrary to the CAA's requirements to use the best available science[207] to apply changes advanced under the cover of BCA processes to risk assessments more broadly, once more suggesting bad-faith motivations driving this effort. It is profoundly unreasonable for the agency to advance requirements that would be so fundamentally contrary to the core purpose of the Clean Air Act. We adamantly oppose any action that would expand the scope of these requirements to all CAA significant rulemakings.

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[202] 85 Fed. Reg. at 35,621.

[203] *Id.*

[204] *See supra* n.124.

[205] Peltier & Goldman, *It's not about transparency*.

[206] 85 Fed. Reg. at 35,623.

[207] See, e.g., 42 U.S.C. § 7408(a)(2) ("Air quality criteria for an air pollutant shall accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of such pollutant in the ambient air, in varying quantities.").

To EPA's specific inquiries, first, the agency should *not* codify into regulation "the proposed selection criteria for selecting among studies characterizing concentration-response relationships."[208] These selection criteria do not advance the already robust risk analysis decision making framework and associated literature; instead, by failing to elevate those studies advancing the best available science, these criteria would present a major setback. Similarly, we oppose any move to incorporate *additional* requirements on this front. The proposed requirements represent a dramatic departure from best practice, scuttling expert opinion in the face of arbitrary mandates. Additional requirements in line with such harmful proposed methods to date would be all the more damaging to the agency's continued ability to issue defensible, health-protective work.

We also oppose EPA's consideration of codifying into regulation the proposed requirement for "synthesizing evidence across the literature."[209] As detailed above, this proposed practice threatens to distort risk analyses and weaken protections, with no upside for scientific understanding or protection of public health. The agency would be forcing an arbitrary practice without technical or logical merit.

Finally, we are alarmed by, and opposed to, EPA's consideration of imposing requirements both for "any weight-of-evidence (WOE) frameworks that the Agency uses in the developments of CAA significant rulemakings" as well as surrounding the "assessment of bias and uncertainty in risk analyses."[210] Each of these considerations threatens to undermine the agency's ability to conduct robust scientific assessment and implement health-protective standards.[211] They would also have far-reaching implications, weighing the agency down with arbitrary and unnecessary burdens, while at the same time deploying obstacles in the face of valid and informative studies.

VI. THE PROPOSAL ARBITRARILY IMPOSES A MORE DEMANDING STANDARD FOR ESTIMATING BENEFITS THAN COSTS.

It is well-established that an agency acts arbitrarily and capriciously when it fails to consider an important aspect of the problem it is addressing.[212] It follows that agencies must properly weigh both costs and benefits when considering regulatory action.[213] Nor may an agency "put a thumb on the scale by undervaluing the benefits and overvaluing the costs of more stringent standards."[214] Reliance on a flawed benefit-cost analysis can doom an agency's rule.[215] Executive Order 12,866, which has been continuously effective since 1993 through

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[208] 85 Fed. Reg. at 35,623.

[209] *Id.*

[210] *Id.*

[211] Goldman & Dominici, *Don't abandon evidence and process on air pollution policy*; EPA, Preamble to the Integrated Science Assessments.

[212] *See Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

[213] *See California v. Bureau of Land Mgmt.*, 277 F. Supp. 3d 1106, 1122 (N.D. Cal. 2017) ("Without considering both the costs *and* the benefits of [its action], the [agency's] decision failed to take this 'important aspect' of the problem into account and was therefore arbitrary." (emphasis in original)).

[214] *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1198 (9th Cir. 2008).

[215] *Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d 1032, 1040 (D.C. Cir. 2012).

administrations of both political parties, directs agencies to "assess both the costs and the benefits of the intended regulation."[216]

As explained above, this Proposal seems animated by unsupported and false allegations that EPA has historically overvalued benefits and undervalued costs. Because these allegations are baseless, increasing the emphasis on costs would skew the agency's analyses such that benefits are arbitrarily undervalued. Yet the Proposal contains at least two measures that would bias the agency's consideration of costs and benefits. Any requirement that future rulemakings utilize these measures would render this rule arbitrary, capricious, and an abuse of the agency's discretion.

A) Applying a "Fitness for Purpose" Test to Benefits, but Not Costs, Would Be Arbitrary and Unlawful.

The agency suggests that it will utilize a "fitness for purpose" test, "whereby information anticipated to have a higher impact must be held to higher standards of quality."[217] Yet the agency discusses this requirement only in the context of benefits, not costs. This suggests that the benefits of a potentially costly public health or environmental protection would be subject to greater scrutiny and a heightened standard of evidence. But apparently, information about costs that might lead the agency to reduce the stringency of a regulation would face no heightened standard. EPA's arbitrary approach is on full display in the current Proposal, in which EPA is accepting vague and unsupported allegations about costs essentially on faith, and using them as the basis to commit all future Clean Air Act rulemakings to a deeply flawed method of benefit-cost analysis.

Moreover, the sources that EPA cites for the "fitness for purpose" test do not support the agency's approach. EPA explains that the "fitness for purpose" concept is discussed in OMB M-19-15, which, as EPA notes, in turn refers to OMB's 2002 Guidelines. Although OMB's Guidelines do not use the term "fitness for purpose," they apply this principle to "influential" information, "mean[ing] that the agency can reasonably determine that dissemination of the information will have or does have a clear and substantial impact on important public policies or important private sector decisions."[218] EPA now raises the "fitness for purpose" test only in the context of scientific information, but OMB deliberately and expressly included "financial" information among the types of potentially influential information.[219] Therefore, if scientific information about benefits is "influential" or otherwise subject to the "fitness for purpose" test, so too is financial information about costs. The Proposal's asymmetrical consideration of costs and benefits is arbitrary, capricious, and an abuse of the agency's discretion.

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[216] Exec. Order 12,866, 58 Fed. Reg. 51,735 (published Oct. 4, 1993).

[217] 85 Fed. Reg. at 35,620.

[218] OMB, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies*, 67 Fed. Reg. 8452, 8460 (Feb. 22, 2002).

[219] *See id.* (defining influential); *id.* at 8455 ("In response to a public comment, we added an explicit reference to 'financial' information as consistent with our original intent."); *see also* OMB M 19-15 at 3 (retaining the reference to influential scientific information).

B) The Proposed Clear Causal Relationship Requirement Is Arbitrary and Unlawful.

Similarly, EPA proposes imposing additional requirements for inclusion of benefit endpoints based on evidence of a "clear causal" or "likely causal" relationship between pollutant exposure and effect.[220] The agency has a long history of applying a weight of evidence approach to causality determinations, rightly recognizing and valuing the strength of the approach's incorporation of multiple disciplines and lines of evidence.[221] In its 2008 *Integrated Science Assessment for Oxides of Nitrogen and Sulfur – Ecological Criteria*, EPA lays out a causality framework to support assessing causality.[222] In Table 1-2 of that report, the agency provides a five-step weight of evidence framework for assessing causal determination, including causal relationship, likely to be a causal relationship, suggestive of a causal relationship, inadequate to infer a causal relationship, and suggestive of no causal relationship.[223] With these new proposed requirements, EPA is contradicting its own established methods for assessing causality, which have been endorsed by the scientific community and EPA science advisors.[224] The changes would rule out consideration of endpoints "suggestive of a causal relationship," an action that would arbitrarily and inappropriately undermine the judgment of scientists and other contributing experts in applying a full weight of evidence approach.

EPA also solicits comment on an alternative requirement in place of the above: solely including benefit endpoints "for which there is a positive [willingness-to-pay] conditional on the available scientific literature."[225] We strongly oppose this unscientific and inappropriately restrictive requirement. Multiple critical endpoints cannot be translated into willingness to pay estimates, including as detailed in the *Guidelines for Preparing Economic Analyses.* This screening requirement would do nothing to aid in better-informing benefit-cost analyses, but rather arbitrarily and inappropriately constrain efforts to conduct a full and detailed analysis.

VII. EPA'S PROPOSED REQUIREMENTS CONTAIN ANALYTICAL LIMITATIONS THAT ARBITRARILY BURDEN BENEFITS ESTIMATES.

A) EPA's Proposed Requirements for Quantification and Monetization Are Inappropriate.

EPA proposes to bind itself to a formal benefit-cost analysis, comparing quantified and monetized costs and benefits "to the extent supported by scientific literature as well as practicable in a given rulemaking."[226] A separate duplicative proposed provision would require EPA to "quantify effects for endpoints which scientific evidence is robust enough to support

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[220] 85 Fed. Reg. at 35,620.

[221] EPA, Preamble to the Integrated Science Assessments; Goldman & Dominici, *Don't abandon evidence and process on air pollution policy.*

[222] EPA, Integrated Science Assessment for Oxides of Nitrogen and Sulfur – Ecological Criteria, EPA/600/R-08/082F (2008).

[223] *Id.* at 1-8.

[224] Goldman and Dominici, *Don't abandon evidence and process on air pollution policy.*

[225] 85 Fed. Reg. at 35,620.

[226] *Id.* at 35,626 (proposed § 83.3(a)(8)).

such quantification."[227] Both requirements would sometimes require EPA to engage in burdensome and unnecessary analysis, and should be rejected.

Both proposed requirements unnecessarily cabin EPA's discretion. As described in section III, as with other proposed requirements, there is no legal or rational basis for the agency to bind itself to conduct BCAs in any particular manner, considering the multiple options that the agency usually has for reasonably assessing costs and benefits. The Proposal would, in many situations, mandate unnecessary or inappropriate approaches to such analysis. Many factors influence the wisdom of attempting to quantify and/or monetize various costs and benefits of regulatory action. EPA already has ample ability to exercise appropriate judgment in deciding how and whether to quantify or monetize effects of a regulation.

The proposed standard for when to require quantification and monetization of regulatory effects is inconsistent with existing guidance and executive orders. Executive Order 12,866 only directs quantification of costs and benefits "to the extent feasible."[228] Similarly, Circular A-4 advises agencies to quantify and monetize costs and benefits "where feasible." Feasibility is a more appropriate standard because it furthers the agency's discretion to consider the particulars of the factual circumstances before it.

The Proposal also fails to recognize situations in which quantification and/or monetization of benefits may be inappropriate. The analyses necessary to quantify and monetize costs and benefits impose administrative burdens. The burdens associated with performing such analysis exist on a continuum; additional analysis may result in quantification of additional cost or benefit categories, or may reduce associated uncertainty. EPA should retain discretion as to where to fall on that continuum.

There are at least two types of situations where a requirement to quantify or monetize costs and benefits would be inappropriate. First, a qualitative assessment might be sufficient for the agency to conclude with high confidence that a rule's benefits exceed its costs. In these circumstances, significant expenditures to quantify or monetize the rule's benefits and costs would not necessarily be useful. Second, many provisions under the CAA prohibit consideration of costs or prescribe a limited role for the consideration of costs,[229] and the quantification of costs or benefits, to the extent it is permitted by law at all, could cause unjustifiable delays or other hurdles to statutorily guaranteed protections.

Additionally, EPA fails to identify measures to ensure that unquantified and unmonetized benefits and costs are given equal weight. There are many instances where environmental costs and benefits are not easily or feasibly represented in dollars and cents. For example, suppose a BCA estimated that a regulation had net positive quantified benefits, but that the quantified costs fall upon environmental justice communities. In such a case, that disproportionate impact would be an unquantified cost of the regulation. Conducted properly, the BCA would fully account for

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[227] *Id.* at 35,626 (proposed § 83.3(a)(7)(ii)).

[228] Exec. Order 12,866 § 6(a)(3)(C)(i).

[229] Congressional Research Service, *Cost and Benefit Considerations in Clean Air Act Regulations* (2017), https://crsreports.congress.gov/product/pdf/R/R44840/4.

the unquantified distributional cost. However, EPA has failed to propose or solicit comment on any aspect of distributional analysis.

B) EPA Should Not Require Separate Reporting of Domestic and Non-Domestic Effects.

EPA requests comment "as to whether non-domestic benefits and costs of regulations, when examined, should be reported separately from domestic benefits and costs of such regulations."[230] Such a requirement would be unnecessary and counterproductive.

Certain classes of effects cannot be meaningfully disaggregated into their domestic and non-domestic components. For example, a federal district court recently rejected the use of domestic-only social costs of greenhouse gases, finding that such estimates are "soundly rejected by economists as improper and unsupported by science."[231] In 2015, the Interagency Working Group on the Social Cost of Carbon concluded that "good methodologies for estimating domestic damages do not currently exist."[232] Likewise, in 2017, the National Academies found that the calculation of a domestic social cost of methane cannot be credibly done using current models, as they ignore important spillover effects given the global nature of climate change.[233] Other leading experts agree.[234] Thus, a blanket requirement to require separate reporting of domestic and non-domestic benefits and costs would be arbitrary and capricious.

The same issues may also apply to disaggregation of other domestic and non-domestic costs and benefits of EPA regulations. For example, emissions of ozone and ozone precursors in the United States may affect ozone levels in neighboring countries, and vice versa.[235] The costs of regulatory action may also be difficult to disentangle, for example, when those costs are borne by companies that operate in the United States but which also have foreign shareholders, employees, or other non-U.S. interests. Additionally, to the extent these analytical difficulties arise predominantly with respect to disaggregating the benefits associated with additional pollution controls, the proposed requirement would inappropriately bias results of BCAs away from such regulations.

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[230] 85 Fed. Reg. at 35,623.

[231] *California v. Bernhardt*, No. 18-5712 (N.D. Cal. July 15, 2020).

[232] Interagency Working Group on the Social Cost of Carbon, *Response to Comments: Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12,866*, at 36 (July 2015).

[233] National Academies of Sciences, Engineering, and Medicine, *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide* 53 (2017).

[234] *See, e.g.*, William D. Nordhaus, *Revisiting the Social Cost of Carbon*, 114 Proc. Nat'l Acad. Sci. 1518 (2017) (concluding that "regional damage estimates are both incomplete and poorly understood" and that "there is little agreement on the distribution of the SCC by region").

[235] *See Clean Wisconsin v. EPA*, No. 18-1203, 2020 U.S. App. LEXIS 21428, at*24 (D.C. Cir. July 10, 2020) (noting EPA's conclusion that "[o]zone and ozone precursors can be transported to an area from sources in nearby areas or from sources located hundreds of miles away").

C) Any Proposed Requirement Regarding Technological Change and Learning Effects Should Address Overestimation of Costs.

EPA solicits comment on "whether this rulemaking should specify best practices related to assumptions about technological change and/or learning effects in BCA."[236] As with other aspects of the proposed regulations, guidance documents already describe how EPA should consider these factors in estimating costs of regulatory compliance,[237] such that imposing this as a regulatory requirement is unnecessary.

However, if EPA insists on codifying best practices for these topics, EPA should address these and other factors that regularly lead to overestimation of costs. As described in section II.B, the tremendous benefits provided by EPA safeguards are regularly underestimated due to the difficulty of quantifying and monetizing many regulatory benefits. Likewise, the cost of compliance with those safeguards is regularly overestimated, likely due to conservative assumptions regarding pollution control innovations and learning effects.[238] For example, EPA overestimated compliance costs for the Mercury and Air Toxics Standards to be $9.6 billion per year, while ex post estimates of actual costs range from $3 to $4.5 billion, less than half of EPA's original estimate.[239] Major sections of the Clean Air Act are premised on likely innovation and learning in response to pollution control requirements,[240] and these dynamics should not be ignored.

VIII. FINALIZING A REQUIREMENT FOR BENEFITS TO EXCEED COSTS IN FUTURE RULEMAKINGS WOULD BE UNLAWFUL.

EPA "solicits comment on whether and under what circumstances the EPA could determine that a future significant CAA regulation be promulgated only when monetized benefits exceed the costs of the action."[241] However, EPA has not issued any proposal on this topic, and any final rule requiring rules to pass a cost-benefit test would fail the logical outgrowth test and thus be unlawful.[242]

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[236] 85 Fed. Reg. at 35,623.

[237] *See* EPA, *Guidelines* 8-10 to 8-12 (section 8.3.1.4).

[238] R. David Simpson, *Do regulators overestimate the costs of regulation?*, 5 J. Benefit-Cost Analysis 315 (2014); Winston Harrington, Richard D. Morgenstern, & Peter Nelson, *On the accuracy of regulatory cost estimates*, 19 J. Policy Analysis & Mgmt. 297 (2000).

[239] 77 Fed. Reg. 9304, 9425 (Feb. 16, 2012) (MATS rule containing projected annual compliance cost of $9.6 billion); M.J. Bradley & Associates, MJB&A Issue Brief, *Status of the MATS Rule* (Nov. 16, 2017) (estimating $4.45 billion in actual compliance costs from December 2014 to April 2016); Letter from Edison Electric Institute, et al., to William Wehrum, EPA Assistant Administrator, Office of Air and Radiation (July 10, 2018), http://src.bna.com/Ajk (industry letter estimating the total cost of MATS compliance from 2012 to 2018 as "more than $18 billion," or roughly $3 billion per year).

[240] David Gerard & Lester B. Lave, *Implementing Technology-Forcing Policies: The 1970 Clean Air Act Amendments and the Introduction of Advanced Automotive Emissions Controls in the United States*, 72 Technological Forecasting & Soc. Change 761, 763 (2005).

[241] 85 Fed. Reg. at 35,623.

[242] *See, e.g.*, *Sierra Club v. Costle*, 657 F.2d 298, 352 (D.C. Cir. 1981) (imposing the "logical outgrowth" in the context of the Clean Air Act). *See also* 42 U.S.C. § 7607(d)(3); 5 U.S.C. § 553(b). EPA's statement that this Proposal is "a rule of Agency procedure . . . [and] exempt from the notice and comment requirements," 85 Fed. Reg.

EPA cannot satisfy the notice requirement through "general notice that it might make unspecified changes. . . . Agency notice must describe the range of alternatives being considered with reasonable specificity."[243] Agency notice must take "a concrete and focused form so as to make criticism or formulation of alternatives possible."[244] Commenters "cannot be expected to divine the EPA's unspoken thoughts."[245] Adequate notice serves "three distinct purposes," none of which EPA has satisfied: "ensuring that agency regulations will be tested by exposure to diverse public comment"; enabling "fairness to affected parties"; and "giving affected parties an opportunity to develop evidence in the record to support their objections to a rule…enhanc[ing] the quality of judicial review."[246]

EPA's solicitation of comment on this topic leaves profound questions as to what the agency is actually considering. Notably, EPA has not even defined what it means by "monetized benefits" or "costs" in this context. For instance, elsewhere in the Proposal, EPA acknowledges that not all benefits and costs can be monetized but proposes to "exercise its subject matter expertise" in assessing the importance of those benefits and costs.[247] Commenters have no signal of whether imposing a requirement that monetized benefits exceed costs would complement EPA's Proposal, displace it, relegate it to irrelevance, or something else. Commenters are also left to guess whether EPA means that monetized benefits would need to exceed only monetized costs, or *all* costs that the agency decided to consider (a possibility raised by the literal wording of the solicitation for comment). In addition, the Proposal describes "three broad frameworks for estimating social cost—compliance cost, partial equilibrium, and general equilibrium."[248] Commenters are left to guess which of those cost frameworks would be used as the benchmark for monetized costs, or whether EPA would select its preferred framework on a rulemaking-specific basis, leading to an outcome that present commenters could not possibly anticipate.

Nor has EPA specified which monetized benefits it would include in this analysis. In several places, EPA suggests that the presentation of benefits should be sliced and diced into various categories (even though the agency already has a longstanding practice of clearly delineating the components of its benefits estimates). For example, the Proposal would require EPA to disaggregate co-benefits in the presentation of BCA results.[249] But EPA's solicitation of comment does not specify whether the monetized benefits in this context would include *all* monetized benefits, or only those that the agency deems not "ancillary." Additionally, the Proposal raises the possibility that "domestic" benefits and costs should be reported separately from those that are "non-domestic."[250] But EPA's solicitation of comment does not specify whether the cost-monetized benefit test would be limited to a domestic scope. And as discussed

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at 35,613, is factually inadequate and legally flawed. But it is particularly inapt here, where EPA considers explicitly establishing a new substantive factor affecting the stringency of future health and environmental protections.

[243] *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 549 (D.C. Cir. 1983).

[244] *Home Box Office, Inc. v. Fed. Commc'ns Comm'n*, 567 F.2d 9, 36 (D.C. Cir. 1977).

[245] *Shell Oil Co. v. EPA*, 950 F.2d 741, 751 (D.C. Cir. 1991).

[246] *Small Refiner*, 705 F.2d at 547.

[247] 85 Fed. Reg. at 35,618.

[248] *Id.* at 35,619.

[249] *Id.* at 35,622.

[250] *Id.* at 35,623.

in other contexts, there are instances where dividing benefits into "domestic" and "non-domestic" is analytically unsound, which further confuses this issue.[251]

Furthermore, the various sections of the Clean Air Act contain distinct requirements for how EPA may consider costs. In certain provisions, EPA is prohibited from considering cost at all.[252] Other sections enumerate cost as one of several factors that the agency must consider.[253] And elsewhere, EPA is already required to conduct a benefit-cost analysis.[254] The agency's solicitation of comment has vastly different implications for different sections of the Clean Air Act, ranging from introducing a prohibited element into the analysis, to unlawfully elevating the consideration of costs above other statutory concerns, to awkwardly and unpredictably clashing with the agency's existing practices.

Considering the various ways that EPA could attempt to impose a benefit-cost test upon future significant regulations, it is currently infeasible to provide informed comments. Accounting for the different methods of accounting for costs and benefits and the multiple sections of the Clean Air Act that could be affected, there are at least several dozen permutations that EPA's idea could take. It would be infeasible to meaningfully address all of the possibilities under any circumstances, but especially here, given the brevity of the comment period.[255] And it is unlikely that *any* single methodology could be rationally applied to the full range of CAA rulemakings.

IX. EPA'S PROPOSED TRANSPARENCY REQUIREMENTS ARE ARBITRARY, IMPRACTICABLE, AND AMBIGUOUS.

The elements of this Proposal pertaining to the public availability of data and models bear a disturbing resemblance to EPA's separate, unlawful proposal restricting the scientific information upon which the agency relies when setting public health and environmental protections. Several of the undersigned organizations also commented on that proposed rule and supplemental notice of proposed rulemaking, and many of those comments are attached.[256] We

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[251] *See, e.g.*, Interagency Working Group on Social Cost of Greenhouse Gases, *Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis* 17 (Aug. 2016).

[252] *See* 42 U.S.C. § 7409(b); *American Trucking*, 531 U.S. at 471 (2001).

[253] *See* 42 U.S.C. § 7411(a)(1); *id.* § 7412(d)(2); *id.* § 7521(a)(2).

[254] *See id.* § 7545(c)(2)(B).

[255] *See* Environmental Defense Fund, Clean Air Task Force, Earthjustice, Environmental Law & Policy Center, Environmental Protection Network, National Parks Conservation Association, Sierra Club, *Request to Immediately Halt and Withdraw EPA's Clean Air Act Cost-Benefit Rulemaking Action, and Extend Deadline for Public Comments on EPA's Notice of Proposed Rulemaking*, Docket ID EPA-HQ-OAR-2020-0044-0052 (June 26, 2020); Union of Concerned Scientists, *Request for an Extension on Comment Period for EPA's Notice of Proposed Rulemaking, "Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process,"* Docket ID EPA-HQ-OAR-2020-0044-0053 (June 29, 2020).

[256] *See* Comment of the Environmental Defense Fund on the Environmental Protection Agency's Proposed Rule: Strengthening Transparency in Regulatory Science, Docket ID EPA-HQ-OA-2018-0259-9227 (Aug. 16, 2018); Comment of Andrew A. Rosenberg, Union of Concerned Scientists, Docket ID EPA-HQ-OA-2018-0259-6144 (Aug. 16, 2018); Comments of Clean Air Task Force on the Proposed Rule "Strengthening Transparency in Regulatory Science," Docket ID EPA-HQ-OA-2018-0259-6916 (Aug. 16, 2018); Comment of Environmental Law & Policy Center, et al., Docket ID EPA-HQ-OA-2018-0259-6174 (Aug. 16, 2018); Comments of Natural Resources Defense Council on "Strengthening Transparency in Regulatory Science," Docket ID EPA-HQ-OA-2018-0259-

incorporate all of those comments by reference here. While recognizing the value of transparency, as we extensively discussed in those comments and reiterate here, we also recognize that the promulgation of scientifically robust protections may require EPA to rely on rigorous data and models that cannot feasibly or lawfully be released publicly.

A) EPA Must Explain How This Proposal Relates to Its Proposal to Restrict the Use of Scientific Information.

As an initial matter, EPA should clearly explain the relationship between this Proposal and its Restricted Science proposal. Given that the proposals bear key similarities,[257] it is unclear whether EPA would expect the rules to operate independently, or if restrictions on using scientific information would affect (directly or indirectly) which information the agency can consider in BCAs. More generally, it is unclear whether the two proposals would impact the same information or would expand upon each other. This is largely the result of the problematic vagueness of both proposals, including EPA's total failure to illustrate how either proposal would function in practice. Without explaining how the proposals relate—and more generally what they are intended to do—EPA has not provided the public with adequate notice to make informed comments.

The similarities between the two proposals are especially perplexing because the proposals appear in some respects to have different areas of focus. For example, the Restricted Science proposal repeatedly speaks of "independent validation" of data and models—a theme that is reflected in its definition of "data":

> [T]he set of recorded factual material commonly accepted in the scientific community as necessary to validate research findings in which obvious errors, such as keystroke or coding errors, have been removed and that is capable of being analyzed by either the original researcher or an independent party.[258]

The current Proposal never mentions validation of data and models but inexplicably uses the same definition of "data."[259] Such duplication would be unremarkable if the definition were standard, but this definition is highly idiosyncratic and tied directly to the purported aims of the other proposal.[260] EPA should explain whether the current Proposal is an effort to implement

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8283 (Aug. 15, 2018); Comments of Environmental Defense Fund on EPA's Supplemental Notice of Proposed Rulemaking: "Strengthening Transparency in Regulatory Science," Docket ID EPA-HQ-OA-2018-0259-12727 (May 18, 2020); Comment of Andrew A. Rosenberg and Genna Reed, Union of Concerned Scientists, Docket ID EPA-HQ-OA-2018-0259-11479 (May 15, 2020); Comments of Clean Air Task Force on the Supplemental Notice of Proposed Rulemaking on "Strengthening Transparency in Regulatory Science," Docket ID EPA-HQ-OA-2018-0259-13788 (May 18, 2020); Comments of Natural Resources Defense Council on "Strengthening Transparency in Regulatory Science (Supplemental notice of proposed rulemaking)," Docket ID EPA-HQ-OA-2018-0259-12720 (May 18, 2020).

[257] In addition to requiring that certain information be made publicly available, the two proposals utilize identical definitions of "data," "model," and "publicly available."

[258] 85 Fed. Reg. at 15,405 (proposed 40 C.F.R. § 30.2).

[259] 85 Fed. Reg. at 35,625 (proposed 40 C.F.R. § 83.1).

[260] *See, e.g.*, EDF Comments, Docket ID EPA-HQ-OA-2018-0259-12727, at 72-73.

some of the objectives of the Restricted Science proposal, or—if not—what other purpose is being served by replicating elements of that proposal.

These similarities are especially troubling because the proposal to restrict the use of scientific studies garnered criticism from several leading scientific experts, whose objections are also relevant here. For example, in November 2019, the editors of the nation's leading science journals issued a statement underscoring that the notion of discounting studies based on the availability of underlying data is contrary to good scientific practice and would be a "catastrophe" for public health:

> As leaders of peer-reviewed journals, we support open sharing of research data, but we also recognize the validity of scientific studies that, for confidentiality reasons, cannot indiscriminately share absolutely all data. . . . *Discounting evidence from the decision-making process on the basis that some data are confidential runs counter to the EPA stated mission "to reduce environmental risks . . . based on the best available scientific information."* . . . We urge the EPA to continue to adopt an approach that ensures the data used in decision-making are the best available, which will at times require consideration of peer-reviewed scientific data, not all of which may be open to all members of the public. The most relevant science, vetted through peer review, should inform public policy. Anything less will harm decision-making that claims to protect our health.[261]

Likewise, EPA's Science Advisory Board questioned the very basis for the Restricted Science proposal in light of the alternative methods available to validate scientific studies:

> The SAB notes that there are legitimate legal, ethical, professional and financial reasons why researchers may be unable or unwilling to fully share "data" - including statutes protecting participant privacy, experimental protocols assuring confidentiality of data for human subjects, and (for past studies) issues related to degradation and custody of data. The EPA, the U.S. Office of Management and Budget, and scientific institutions have recognized these legitimate concerns, and recognized that such constraints on availability of data do not prevent studies from being verified in other ways - or preclude those studies from being considered in regulatory decisions.[262]

Considering this damning commentary from the scientific community—to which EPA still has not provided an answer—finalizing a rule that would impose some of the same counterproductive measures is arbitrary, capricious, and an abuse of the agency's discretion.

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[261] H. Holden Thorp et al., *Joint Statement On EPA Proposed Rule and Public Availability of Data*, Science (Dec. 6, 2019), https://science.sciencemag.org/content/366/6470/eaba3197 (emphasis added).

[262] *Science Advisory Board (SAB) Consideration of the Scientific and Technical Basis of EPA's Proposed Rule Titled* Strengthening Transparency in Regulatory Science, at 17 (Apr. 24, 2020), https://yosemite.epa.gov/sab/sabproduct.nsf/LookupWebReportsLastMonthBOARD/2DB3986BB8390B308525855800630FCB/$File/EPA-SAB-20-005.pdf.

B) EPA's Failure to Consider or Explain How It Would "Ensure" the Public Availability of Data and Models Is Arbitrary and Capricious.

EPA's proposed regulatory language would require the agency to "ensure that all information (including data and models) used in the development of the BCA is publicly available."[263] Although the Proposal allows some exceptions for confidential business information and personally identifiable information, it does not contemplate the other reasons that data or models may not be publicly available. Some data and models may be infeasible to release due to technical or practical constraints. EPA's Proposal targets all potential "data and models" to be considered by the agency, without consideration that they have likely been developed by a wide breadth of entities inside and outside government, and are highly variable including in terms of how they are generated, collected, curated, and stored. In the context of the Restricted Science proposal, the SAB observed:

> Some individual data (i.e., data associated with individuals in a sample) used in epidemiological studies are held by federal agencies such as the Centers for Disease Control and Prevention or the Department of Health and Human Services (Medicare data), while other data have been developed by state, local or tribal governments, academic institutions or private organizations, among others. Some federal agencies have efficiently developed methods for making data available to the public (e.g., Census Bureau, CDC). *Currently, no comparable system exists for datasets that are owned by non-federal governments (e.g., states, tribes), and/or owned by private societies/organizations or academic institutions, which are themselves protected by strong privacy and confidentiality requirements through their Institutional Review Boards (IRBs).* . . .
>
> The proposed regulation should clearly address the issue of obtaining public access to datasets while maintaining the privacy of the participants and confidentiality of the data.[264]

EPA's proposed regulatory text also provides:

> If the data and models are proprietary, the Agency must make available, to the extent permitted by law, the underlying inputs and assumptions used, equations, and methodologies used by EPA, while continuing to provide appropriate protection for information claimed as confidential business information (CBI), personally identifiable information (PII), and other privileged, non-exempt information.[265]

Nowhere does EPA explain what it means by "appropriate protection," much less how this protection would be assured. The Proposal offers no information on where the raw data collected would reside, how the resources to manage the data would be obtained, or how EPA would deal with legally and ethically protecting confidential or sensitive data. Ensuring all this

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[263] 85 Fed. Reg. at 35,627 (proposed 40 C.F.R. § 83.3(a)(12)).

[264] Science Advisory Board 2020, at 3 (emphasis added).

[265] 85 Fed. Reg. at 35,627 (proposed 40 C.F.R. § 83.3(a)(12)).

extra information is received, stored, and made publicly accessible would be no small task. Especially at a time when EPA's budget and capacity are under strain,[266] it is unreasonable for the agency to initiate such an undertaking.

EPA does not seriously consider the issues involved with redacting data, such as the fact that simply redacting a name or a few pieces of information will not adequately protect an individual's identity. A simple anonymization process is at odds with the legal and ethical frameworks developed to protect human participants in scientific studies. For instance, the Health Insurance Portability and Accountability Act ("HIPAA") requires that medical information be protected by a set of administrative, physical, and technical safeguards.[267] Furthermore, the release of underlying human health data may include participants who cannot consent to such a process, like those who have died or cannot be located, and it may discourage people to sign up for future research studies. In a rare joint statement on the proposed rule about scientific studies, the editors of six prominent scientific journals wrote that some data "cannot be shared openly; even anonymized personal data can be subject to re-identification, and it has been a longstanding practice for agencies and journals to acknowledge the value of data privacy adjustments."[268]

A mere anonymization process is inadequate to protect personal data. Simple steps like an Internet search or database query search can re-identify research participants.[269] Research using 1990 census data found that around 87% of Americans can be identified with just three data points: their zip code, gender, and date of birth.[270] One paper found that with just 15 characteristics (like age, gender, and marital status), a machine learning program could re-identify 99.98% of Americans from an anonymized database.[271] Another paper found that a research participant's region of residence could be deduced from prominent environmental studies with 80% to 98% accuracy.[272] Data that include genetic information could reveal sensitive information about the relatives of the research participants, including those who have not yet been born.

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[266] Chris Sellers et al., Environmental Data & Governance Initiative, *An Embattled Landscape Series, Part 2b: The Declining Capacity of Federal Environmental Science* (May 4, 2020), https://envirodatagov.org/embattled-landscape-series-part-2b-the-declining-capacity-of-federal-environmental-science/.

[267] HHS Office for Civil Rights, *Security Rule Guidance Material* (2019), https://www.hhs.gov/hipaa/for-professionals/security/guidance/index.html.

[268] H. Holden Thorp. et al., *Joint statement on EPA proposed rule and public availability of data*, 366(6470) Science 25368-25368, https://www.pnas.org/content/116/51/25368.

[269] Erica Check Hayden, *Privacy protections: The genome hacker*, 497(7448) Nature 172 (2013), https://www.nature.com/news/privacy-protections-the-genome-hacker-1.12940; Richard Chirgwin, *No hack needed: Anonymisation beaten with a dash of SQL*, The Register (Dec. 18, 2017), https://www.theregister.co.uk/2017/12/18/no_hack_needed_anonymisation_beaten_with_a_dash_of_sql/.

[270] Latanya Sweeney, *Simple demographics often identify people uniquely*, Carnegie Mellon University, Data Privacy Working Paper (1999).

[271] Luc Rocher et al., *Estimating the success of re-identifications in incomplete datasets using generative models*, 10 Nature Communications 3069 (2019), https://www.nature.com/articles/s41467-019-10933-3.

[272] Katherine Boronow et al., *Privacy Risks of Sharing Data from Environmental Health Studies*, 128 Environmental Health Perspectives 1 (Jan. 2020), https://ehp.niehs.nih.gov/doi/full/10.1289/EHP4817.

Redacting data and protecting privacy is difficult and time-consuming. It can also strip data of their value, as when completely public data is de-identified to such an extent that the information garnered becomes useless. For example, when it comes to understanding the impacts of pollution on health, information like age and location is vital to understanding the health impact of the contaminant. Furthermore, EPA is statutorily responsible for characterizing pollutant exposure to at-risk subpopulations, such as the elderly, young people, Indigenous people, and people of color. If subjected to the rigid transparency requirements outlined by the Proposal about scientific studies, many studies of at-risk groups would have raw data that could not be made available because it would too easy to identify individuals, even with redactions of some personal information. Cohort studies, which can rely on small populations with unique characteristics, would be particularly affected.

EPA did not ask commenters how it might be able to manage privacy protections of patient health data, but if it had, the answer would be clear: it would be nearly impossible for EPA to strike an appropriate balance between redacting data to protect privacy and maintaining its utility.

Finally, EPA has not explained how it would pay to make all of the data and models publicly available. For many of the reasons discussed above, this can be a complex and technical undertaking. The Congressional Budget Office estimated that legislation similar to EPA's Restricted Science proposal would impose costs of hundreds of millions of dollars per year.[273] Due to the ambiguities of the current Proposal, it is difficult to predict the price tag of compliance, but it will almost certainly be significant. The Proposal is silent on what would happen if neither the agency nor the researchers have the resources to make data and models publicly available—and specifically, what impact that would have on the agency's benefit-cost analyses or other scientific and public health determinations.

EPA's general failure to consider how this Proposal could be implemented—particularly in light of the many foreseeable obstacles—is arbitrary, capricious, an abuse of the agency's discretion, and otherwise contrary to law.

C) Requiring Third Parties to Make Their Models Publicly Available Is Arbitrary and Infeasible.

EPA calls for comment on:

> whether this rule should allow the Agency to use models offered by a third party only where the third party makes its models and assumptions publicly available (or allows the EPA to do so) to the extent permitted by law.[274]

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[273] *See* Susanne S. Mehlman et al., Cong. Budget Office, *Cost Estimate for H.R. 1030: Secret Science Reform Act of 2015* at 2-3 (Mar. 11, 2015) ("CBO expects that EPA . . . would base its future work on fewer scientific studies . . . . CBO expects that the agency would probably cut the number of studies it relies on by about one-half . . . ."); Susanne S. Mehlman et al., Cong. Budget Office, *Cost Estimate for S. 544, Secret Science Reform Act of 2015* (June 5, 2015) (estimating that another similar congressional proposal would cost up to $250 million per year).

[274] 85 Fed. Reg. at 35,624.

While we support and encourage the public availability of models whenever feasible, there may be circumstances when third parties face legitimate restrictions that prevent public release of their models. It would be inconsistent with EPA's obligation to use the best available information for the agency to knowingly use a less rigorous or robust model—or no model at all—on that basis. In addition, there are other measures short of public release that can reassure and inform the public about the validity of a model and EPA's use thereof.[275] There is no indication that EPA considered these alternatives. It would be arbitrary, capricious, and unlawful for EPA to impose an across-the-board requirement for the release of third-party models used by the agency without assessing (i) the constraints this requirement could place on the agency's use of the best available information, (ii) the various reasons that the release of third-party models may be unauthorized or impracticable, and (iii) the options short of public release that may be available in certain circumstances.

Third parties may have valid concerns about making their underlying models publicly available, including that they may incorporate valuable proprietary information, or they may make it easier to personally identify participants in a study. Even when a model could conceivably be released publicly in a safe manner, a researcher may not have the resources to do so, and she may have legitimate concerns about "allow[ing]" EPA to release it. For example, EPA might not implement all of the safeguards that the researcher deems necessary. If EPA releases the model in a manner that exposes CBI or PII, however inadvertently, the researcher might worry that she or the agency could be held liable. The Proposal does not indicate whether EPA would indemnify a researcher who "allows" the agency to release a model.

Moreover, a researcher might not be authorized to release a model or even to "allow" EPA to release it. Researchers may be governed by Institutional Review Boards that must approve the disclosure of potentially sensitive information. For studies involving multiple authors, it may be necessary to obtain unanimous authorization, even though they may be governed by Boards around the world and subject to a wide variety of privacy laws.[276]

EPA should also clarify whether it is required to release a model if a researcher allows it to do so. If EPA neglects or declines to release a model for whatever reason—such as because it is too cumbersome or costly to issue in a publicly accessible format, or it is too difficult to guarantee that sensitive information will be protected—EPA should indicate whether the model could still be utilized in its BCA, or whether the BCA would have to exclude consideration of the model. EPA's failure to consider these questions and propose a process for addressing them is arbitrary and capricious.

D) EPA's Failure to Explain Key Terms Is Arbitrary and Capricious.

In several contexts—including in its proposed regulatory language—EPA indicates that the disclosure requirements would apply "to the extent permitted by law."[277] However, EPA has

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[275] *See, e.g.*, EPA, *Response to the Peer Review Report EPA Base Case Version 5.13 Using IPM* (2016), https://www.epa.gov/sites/production/files/2018-05/documents/response_and_peer_review_120516.pdf.

[276] *See, e.g.*, EDF Comments, Docket ID EPA-HQ-OA-2018-0259-12727, at 17 (describing statements of EPA Science Advisory Board member Bernard Goldstein).

[277] 85 Fed. Reg. at 35,622, 35,624, 35,627 (proposed 40 C.F.R. § 80.3(a)(12)).

not revealed which laws it expects to apply. Commenters are left to guess whether EPA is referring to the Clean Air Act, other laws that EPA implements, or entirely unrelated federal laws. EPA also has failed to indicate whether it will respect state laws governing the release of information. There may be situations in which a researcher and EPA both have access to a model, and the researcher is prohibited from releasing it under state law. It is unclear whether EPA would release the model, or what obligations the researcher would have to try to prevent that outcome.

EPA also indicates that it will protect "information claimed as confidential business information (CBI), personally identifiable information (PII), and other privileged, non-exempt information."[278] As an initial matter, this is grammatically ambiguous. It is unclear whether "claimed as" applies only to CBI, or to all elements in the series. If only to CBI, it is unclear who can "claim[]" that information is CBI, and whether that claim is dispositive. Either way, it is unclear who determines that information is PII—can anyone potentially affected by the release of information make such a claim, and is that claim dispositive? In addition, EPA has provided no definition of "privileged, non-exempt information." The agency must clarify how this category will be determined. It is unclear which privileges EPA is contemplating, and what the information may or may not be exempt from. EPA's failure to explain the meaning of terms that are central to the function of the Proposal is arbitrary and deprives the public of an opportunity to comment on what the Proposal would actually do. EPA cannot finalize any disclosure requirement until it provides notice adequate for public comment.

X. EPA HAS NOT EXPLAINED OR JUSTIFIED A RETROSPECTIVE ANALYSIS REQUIREMENT, AND CANNOT ADOPT ONE ON THE CURRENT VAGUE PROPOSAL.

EPA requests comments "on whether EPA should include a requirement for conducting retrospective analysis of significant CAA rulemakings."[279] The Proposal does not provide sufficient detail on the nature and effects of such a program to adequately notify the public of the agency's plans and allow for meaningful public comment. Therefore, because EPA has not made a sufficiently concrete proposal, it cannot adopt retrospective analysis requirements in its final rule. Additionally, EPA should not include such a requirement because it has not explained why existing processes for retrospective review of regulations are insufficient.

A) EPA Has Not Proposed a Retrospective Review Requirement with Enough Specificity to Allow for Meaningful Comment.

EPA's Proposal provides more questions than answers and thus leaves any potential position on retrospective analysis hopelessly vague and insufficiently noticed. Beyond asking for comments on "whether" the agency should adopt a retrospective review analysis, the agency does not propose any specifics. The agency merely notes that some comments on the advance notice of proposed rulemaking suggested adopting a retrospective review analysis, then "requests more specific comments on this issue" and poses a short series of questions:

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[278] *Id.* at 35,622, 35,627 (proposed 40 C.F.R. § 80.3(a)(12)).
[279] 85 Fed. Reg. at 35,624.

> In particular, what form should a requirement take in the case of CAA regulations? For example, should the requirement pertain to analysis of an individual rule or a review of the cumulative burden of a set of rules regulating the same or related entities? Should it be applicable to all parts of CAA or just some provisions? What are the advantages and disadvantages of such a requirement? How can the Agency overcome the challenges conducting retrospective analysis in cases where the EPA's ability to collect information about the costs of compliance is limited or otherwise influenced by other statutes?[280]

The public cannot comment on "the advantages and disadvantages of . . . a requirement" that remains completely undefined. Particularly troubling is the fact that EPA has not specified whether, if it does decide to implement a retrospective review requirement, there will be further opportunities for public participation in the creation of the review process, the selection of which rules to review, or in the reviews of individual rules. The chance to comment on this vague, undefined Proposal cannot be the public's only opportunity to give the agency feedback on a potential retrospective analysis requirement.

As described above in section VIII, an agency provides adequate notice to the public of a final rule only if that final rule is a "logical outgrowth" of the proposed rule.[281] The notice requirements of the Administrative Procedure Act are designed: "(1) to ensure that agency regulations are tested via exposure to diverse public comment, (2) to ensure fairness to affected parties, and (3) to give affected parties an opportunity to develop evidence in the record to support their objections to the rule and thereby enhance the quality of judicial review."[282] An agency may not "issue broad [notices of proposed rulemaking] 'only to justify any final rule it might be able to devise by whimsically picking and choosing within the four corners of a lengthy "notice"'" because doing so "would hardly promote the purposes of the APA's notice requirement."[283] "The 'logical outgrowth' doctrine does not extend to a final rule that finds no roots in the agency's proposal because '[s]omething is not a logical outgrowth of nothing' . . . nor does it apply where interested parties would have had to "divine [the agency's] unspoken thoughts."[284] A final rule is not a logical outgrowth of the proposal if a new round of notice and comment would "provide commenters with 'their first occasion to offer new and different criticisms which the agency might find convincing.'"[285] Such a vague Proposal as EPA has put forth here—essentially providing no details other than the broad concept of "retrospective

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[280] *Id.*

[281] *Int'l Union, United Mine Workers of Am. v. Mine Safety & Health Admin.*, 407 F.3d 1250, 1259 (D.C. Cir. 2005).

[282] *Id.*

[283] *CSX Transp., Inc. v. Surface Transp. Bd.*, 584 F.3d 1076, 1082 (D.C. Cir. 2009) (*quoting Envtl. Integrity Project v. EPA*, 425 F.3d 992, 998 (D.C. Cir. 2005)).

[284] *Envtl. Integrity Project v. EPA*, 425 F.3d 992, 996 (D.C. Cir. 2005) (internal citations omitted) (*quoting Kooritzky v. Reich*, 17 F.3d 1509,1513 (D.C. Cir. 1994); *Arizona Pub. Serv. Co. v. EPA*, 211 F.3d 1280, 1299 (D.C. Cir. 2000)).

[285] *Fertilizer Inst. v. EPA*, 935 F.2d 1303, 1311 (D.C. Cir. 1991) (*quoting United Steelworkers of America v. Marshall*, 647 F.2d 1189, 1225 (D.C. Cir. 1980)).

analysis"—cannot provide sufficient notice as is required by the Administrative Procedure Act or Clean Air Act.

EPA asks for comments on how to do the review—without providing *any* details on how it proposes to do that review—but has not proposed, and does not ask for comments on, what the purpose or effect of such a review would be. A retrospective review could potentially serve a number of purposes. For example, in one of its reviews completed under Executive Order 13,563 (discussed *infra*), EPA used retrospective analyses to examine whether estimates of compliance costs differed from actual compliance costs, and whether any systematic bias existed in EPA's ex ante cost estimates.[286] Executive Order 13,563 said that retrospective analysis should be done for regulations "that may be outmoded, ineffective, insufficient, or excessively burdensome," and that the agency should "modify, streamline, expand, or repeal them" as appropriate after review.[287] The public cannot adequately comment without knowing whether the proposed retrospective analysis would be used to improve EPA's BCA and decision-making moving forward, or would be used as a basis to modify or eliminate regulations that are reviewed.

The agency also does not propose how it would select which regulations to review, or at which frequency, instead only asking for comment on whether all or only some CAA regulations should be reviewed, and whether regulations should be reviewed as a bundle (of regulations addressing the same pollutant or same industry sector) or individually. The lack of detail in the Proposal is striking when contrasted with the level of detail that was asked for in agencies' Executive Order 13,563 retrospective review plans and that EPA provided in its draft and final plan. A memorandum from OMB on the process through which agencies' preliminary review plans under Executive Order 13,563 would be finalized required agencies to "specify factors that the agency will consider and the process that the agency will use in setting priorities and selecting rules for review."[288] EPA drafted a preliminary plan and, in compliance with OMB guidance, took public comment on the preliminary plan before creating a final draft. In fact, the agency took two rounds of public comment on the draft plan, and held twenty public meetings.[289] EPA's review plan provided details on a four-step process for each five-year review cycle, which consisted of: soliciting nominations of regulations for review, selecting regulations for review,

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[286] EPA, *Improving Our Regulations: Final Plan for Period Retrospective Reviews of Existing Regulations*, at 30–31 (Aug. 2011), https://19january2017snapshot.epa.gov/sites/production/files/2015-09/documents/eparetroreviewplan-aug2011_0.pdf ("Final Plan for Periodic Retrospective Reviews"); EPA, National Center for Environmental Economics, *Retrospective Study of the Costs of EPA Regulations: A Report of Four Case Studies* (Aug. 2014), https://www.epa.gov/sites/production/files/2017-09/documents/ee-0575_0.pdf. This study followed an early 2012 case study of five regulations which "d[id] not aim to estimate ex post costs of these EPA actions," but sought to "examine key drivers of compliance costs to see if informed judgments (weighing the evidence) can be made about whether ex post costs are higher or lower than the estimates of ex ante costs." EPA, National Center for Environmental Economics, *Retrospective Study of the Costs of EPA Regulations: An Interim Report of Five Case Studies*, at 7 (Mar. 2012), https://www.epa.gov/sites/production/files/2014-04/documents/retro-cost-3-30-12.pdf.

[287] Exec. Order 13,563 § 6.

[288] Memorandum from Cass R. Sunstein, Administrator, Office of Information and Regulatory Affairs at 5 (Feb. 2, 2011), https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2011/m11-10.pdf.

[289] *Final Plan for Periodic Retrospective Reviews* at 48–49.

conducting retrospective reviews, and making necessary modifications to the reviewed regulations.[290]

Any final rule that EPA may issue on retrospective analysis could not be a logical outgrowth of such a vague and amorphous proposal as has been put forth here. If EPA does intend to move forward with instituting a retrospective analysis requirement for Clean Air Act rules, the agency should: (1) establish a separate docket for that proposal; (2) develop a concrete proposed rule or set of alternative proposed rules for public comment, including: details on the purpose and intended effect of the review; the need to establish a new, Clean Air Act-specific retrospective review process; the selection criteria for rules to be reviewed; and public participation opportunities within the selection and analysis process; and (3) take public comment on the concrete proposal.

To the extent EPA implies that it might be appropriate to assess the "cumulative burden of a set of rules" on an industry,[291] it would also be necessary—at the very least—to evaluate the cumulative benefits achieved by reducing air pollution from that industry under the same rules. A sector-by-sector analysis, however, could obscure wider social net benefits that would justify a rule and confirm its ongoing value and validity. For example, although economic impacts could be spread unevenly among industries, a rule might nonetheless have substantial net benefits when viewed as a whole.[292] In its solicitation of comment on this point, EPA offers no reason why a retrospective analysis focusing exclusively on one class of regulated entities would be useful in examining the benefits and costs of a rule or set of rules. Without an adequate explanation, any policy on retrospective analysis that exclusively examines the costs, or costs and benefits, of regulating a single industry would be arbitrary.[293]

B) EPA Has Not Explained Why Existing Retrospective Review Processes Are Insufficient.

EPA does not acknowledge that the agency has already been conducting retrospective reviews both under Executive Order 13,563—which directs the preparation of retrospective review plans from all agencies—and under the Clean Air Act. Nor does EPA explain either why the existing processes are inadequate or why a new process specific to the Clean Air Act is needed. EPA merely notes:

> As discussed in the [advance notice of proposed rulemaking], many previous administrations have periodically undertaken programs of retrospective review or issued executive orders urging agencies to reassess existing regulations and to eliminate, modify, or strengthen those regulations that have become outmoded in light of changed circumstances. But for the most part retrospective review has not become institutionalized practice as has prospective review (such

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[290] *Id.* at 51–52.

[291] 85 Fed. Reg. at 35,624.

[292] *See, e.g.*, EPA, Regulatory Impact Analysis: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters at 4-3 to 4-4 & Figure 4-2, 8-1 to 8-2 & Table 8-1 (Feb. 2011).

[293] *State Farm*, 463 U.S. at 43.

> as ex ante benefit-cost analysis conducted under Executive Order 12866) within EPA.[294]

The Proposal therefore briefly acknowledges that there have been previous efforts to establish retrospective review, without specifically naming or citing any of these efforts, or indicating how a new retrospective review process would be different from or superior to these existing processes.

Executive Order 13,563 in 2011 directed a program of retrospective reviews:

> *Retrospective Analyses of Existing Rules*. (a) To facilitate the periodic review of existing significant regulations, agencies shall consider how best to promote retrospective analysis of rules that may be outmoded, ineffective, insufficient, or excessively burdensome, and to modify, streamline, expand, or repeal them in accordance with what has been learned. Such retrospective analyses, including supporting data, should be released online whenever possible.
> (b) Within 120 days of the date of this order, each agency shall develop and submit to the Office of Information and Regulatory Affairs a preliminary plan, consistent with law and its resources and regulatory priorities, under which the agency will periodically review its existing significant regulations to determine whether any such regulations should be modified, streamlined, expanded, or repealed so as to make the agency's regulatory program more effective or less burdensome in achieving the regulatory objectives.[295]

A 2012 executive order expanded on Executive Order 13,563 by requiring agencies to solicit public feedback on which regulations are priorities for retrospective review and directing agencies to prioritize review of regulations that may be imposing unjustified burdens on small businesses.[296] It also added a requirement that agencies regularly report to OIRA on the status of their reviews.[297]

EPA complied with Executive Order 13,563 by creating a review plan and following through on it. EPA drafted a preliminary review plan, held two public comment periods and twenty public meetings, then issued its final review plan in 2012.[298] The final review plan identified 35 regulations that were priorities for retrospective review over the next five years, and stated an intention to start a new review cycle each five years after that.[299] EPA continued to provide semi-annual progress reports on its retrospective reviews through July 2016.[300] While

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[294] 85 Fed. Reg. at 35,624.

[295] Exec. Order 13,563, "Improving Regulation and Regulatory Review," January 18, 2011.

[296] Exec. Order 13,610, "Identifying and Reducing Regulatory Burdens," May 10, 2012.

[297] *Id.*

[298] *Final Plan for Periodic Retrospective Reviews* at 48–49.

[299] *Id.* at 56.

[300] EPA, *Retrospective Review History*, https://19january2017snapshot.epa.gov/laws-regulations/retrospective-review-history_.html. In that final report, EPA noted that 20 reviews were "completed" and 24 were "ongoing." EPA, *Progress Report, July 2016 – Final Plan for Periodic Retrospective Review of Existing Regulations*,

the retrospective review directed by Executive Order 13,563 was not *only* a cost-benefit review, EPA's Executive Order 13,563 Review Plan stated that "EPA intends to answer a general question such as 'Are there benefit and cost estimates related to this regulation that warrant review at this time?' If yes, then during Step 3, the Agency intends to conduct a benefit-cost analysis to understand if the benefits of continuing the regulation still justify its costs."[301] This BCA component was rooted in one of several principles from Executive Order 12,866 that were reiterated in Executive Order 13,563.[302]

EPA also has done retrospective reviews outside of the framework of Executive Order 13,563. EPA's Final Review Plan noted that "[o]f the approximately 200 active actions that are listed in EPA's *Spring 2011 Semiannual Regulatory Agenda*, roughly 60% are reviews of existing regulations."[303] EPA further explained that, "[w]hile some of these regulatory reviews are required by statute, many others are being examined by EPA as a discretionary measure. EPA intends to apply the principles and directives of EO 13563 to these ongoing reviews."[304]

EPA also has not explained why, even if the agency's current retrospective review of regulations overall is lacking, a new process *that is specific to the Clean Air Act* is needed. For similar reasons to those discussed *supra* in section III, EPA has not explained why a statute-specific process would be preferable to an agency-wide process of retrospective review. EPA has also not explained why its existing review process for the Clean Air Act is insufficient. Section 812 of the Clean Air Act Amendments of 1990 (Public Law 101-549) requires EPA to periodically assess the effect of the Clean Air Act on the "public health, economy, and environment of the United States," and to report the findings and results of its assessments to Congress. In 1997, EPA undertook a retrospective study of the Clean Air Act Amendments of 1970 and 1977 that concluded that the benefits of the statute and regulations issued pursuant to it exceeded the costs, with a benefit/cost ratio of at least 10.7, to as high as 94.5.[305] EPA did two studies in 1999 and 2011 of the benefits of the Clean Air Act Amendments of 1990 (CAAA).[306] Although these studies were labeled "prospective" and sought to project future benefits, they were in fact also *retrospective* because they sought to calculate the incremental costs and benefits of the CAAA that had accrued since 1990.[307]

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https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/eparetroreviewprogressrpt-july2016.pdf.

[301] *Final Plan for Periodic Retrospective Reviews* at 53.

[302] Memorandum from Cass R. Sunstein, at 1 ("Section 1 of Executive Order 13563 specifically reiterates five principles from Executive Order 12866. These principles generally involve consideration of benefits, costs, and burdens."); Exec. Order 13,563 § 1 (stating that our regulatory system "must take into account benefits and costs, both quantitative and qualitative").

[303] *Final Plan for Periodic Retrospective Reviews* at 14.

[304] *Id.* at 50.

[305] EPA, *The Benefits and Costs of the Clean Air Act, 1970 to 1990* (Oct. 1997), at second unnumbered page of abstract, https://www.epa.gov/sites/production/files/2015-06/documents/contsetc.pdf.

[306] EPA, *The Benefits and Costs of the Clean Air Act 1990 to 2010*, EPA-410-R-99-001 (Nov. 1999), https://www.epa.gov/sites/production/files/2015-07/documents/fullrept.pdf; EPA 2011 Study.

[307] The 1999 Study examined benefits for 1990 through 2010, and the 2011 study examined benefits for 1990 through 2020.

EPA does not explain why these previous efforts at retrospective review were unsatisfactory, other than noting merely that retrospective analysis "has not become institutionalized practice as has prospective review (. . . under Executive Order 12866) within EPA."[308] The agency also does not explain why, if an Executive Order was sufficient to "institutionalize" the process of prospective BCA, an agency rulemaking is needed to institutionalize the process of retrospective review. Without clearly understanding the problem the agency seeks to solve, the public cannot adequately comment on whether this amorphous Proposal would solve it. Additionally, as previously discussed, adopting a rule that fails to solve any identifiable problem is arbitrary and capricious.[309]

XI. EPA HAS FAILED TO CONSIDER COSTS AND BENEFITS OF THIS PROPOSAL.

Ironically, EPA has entirely failed to assess the likely costs of this Proposal, which is purportedly intended to increase transparency surrounding the benefits and costs of rulemakings under the CAA. It is apparent, however, that the Proposal would impose substantial costs on both the agency and the public. EPA cannot finalize its rule unless it fully examines the costs of overlaying a set of detailed requirements on its existing rulemaking processes and considers the implications of the rule for its duty under the CAA to protect public health and welfare.[310]

First, and most critically, EPA has not analyzed the impacts of its Proposal on environmental justice communities, as required.[311] The agency simply concludes: "The EPA believes that this proposed action is not subject to Executive Order 12898 (59 FR 7629, February 16, 1994) because it does not establish an environmental health or safety standard."[312] Executive Order 12,898, however, plainly applies to all agency "programs, policies, and activities."[313] EPA cannot disclaim its responsibility to analyze all of the costs described above through an equity lens before it can finalize any rule similar to the Proposal.

Regarding the costs of the Proposal more generally, because EPA has not specified what need the Proposal would fulfill, it is difficult to predict whether its requirements will add to the work that the agency already does in developing rules under the CAA. Although we maintain that the rule is unnecessary given the agency's existing practices, which have long involved rigorous evaluation of costs and benefits and produced clean air regulations with benefits far exceeding costs,[314] there would presumably be some instances in which the Proposal would require additional, superfluous steps before the agency could issue a regulation. EPA must delineate its Proposal's effects on the established rulemaking process, noting which efforts

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[308] 85 Fed. Reg. at 35,624.

[309] *N.Y. Stock Exch. LLC v. SEC*, 962 F.3d 541 (D.C. Cir. 2020); *Sorenson Commc'ns v. FCC*, 755 F.3d 702, 709-10 (D.C. Cir. 2011).

[310] *See Physicians for Social Responsibility v. Wheeler*, 956 F.3d 634, 647 (D.C. Cir. 2020).

[311] *See* Exec. Order No. 12,898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, 59 Fed. Reg. 7629 (Feb. 16, 1994).

[312] 85 Fed. Reg. at 35,625.

[313] Exec. Order No. 12,898 § 2-2.

[314] EPA, *The Benefits and Costs of the Clean Air Act from 1990 to 2020: Summary Report*, at 2 & Exhibit 1 (2011).

would be additional and in what types of rulemakings those additional requirements would apply, and assess the costs to the agency of carrying out the extra steps.

For example, EPA proposes to require that every rulemaking in which there is a "continuum of options" assess the benefits and costs of at least three regulatory options, with one more stringent and one less stringent than the proposed or finalized option.[315] Alternatively, the agency may "explain why it is not appropriate to analyze more options."[316] There may be instances in which it would be appropriate to select the most or least stringent regulatory option as the preferred alternative. EPA does not offer any reason why additional explanation is required where the agency decides, at proposal or upon finalization, that its preferred regulatory option is the most or least stringent option it analyzed.[317] This requirement could deter EPA from selecting the most stringent regulatory option available when a rule is ready for proposal or finalization, as the agency could need to add and analyze a more-stringent option, possibly through a supplemental proposal with subsequent notice and comment. It could also impose costs on the agency of carrying out an unnecessary analysis of a weaker option, even where the agency has determined that any lesser level of protection is unlawful or otherwise unacceptable. The additional analysis that the Proposal would require, which is entirely unmoored from any statutory directives that govern the agency's decision-making, could entail significant cost. EPA cannot finalize the Proposal unless it examines the costs to the agency and the public of conducting superfluous analysis, or selecting less stringent regulatory options.

The proposed requirements for selecting benefit endpoints and quantifying health benefits—which, as discussed above, are themselves arbitrary[318]—would impose significant unanalyzed costs. The Proposal stipulates that:

> The Agency must select benefit endpoints that the scientific evidence indicates there is [*sic*]:
> (i) A clear causal or likely causal relationship between pollutant exposure and effect, and subsequently [*sic*]; and
> (ii) An anticipated change in that effect in response to changes in environmental quality or exposures expected as a result of the regulation under analysis. The Agency must quantify effects for endpoints which scientific evidence is robust enough to support such quantification.[319]

This proposed requirement is incomprehensible, with key terms (*e.g.*, "robust enough to support . . . quantification") undefined, and it therefore provides inadequate notice to commenters as to the agency's intentions.[320]

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[315] 85 Fed. Reg. at 35,626 (proposed 40 C.F.R. § 83.3(a)(3)).

[316] *Id.*

[317] *See* 85 Fed. Reg. at 35,618.

[318] *See supra* section V.

[319] *Id.* at 35,626 (proposed 40 C.F.R. § 83.3(a)(7)).

[320] *See Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 549 (D.C. Cir. 1983) ("Agency notice must describe the range of alternatives being considered with reasonable specificity. Otherwise, interested parties will not know what to comment on, and notice will not lead to better-informed agency decisionmaking."); *see also*

In any event, the provision could entail significant costs. The terms "causal relationship" and "likely to be causal relationship" are defined in EPA's Preamble to the Integrated Science Assessments.[321] There, the agency explains that it finds such relationships to exist after a "weight-of-evidence evaluation . . . based on the integration of findings from various lines of evidence from across health and environmental effect disciplines that are integrated into a qualitative statement about the overall weight of the evidence and causality."[322] If no such weight-of-evidence evaluation is available for any given pollutant exposure, the Proposal could block EPA from estimating benefits from pollutant reductions that it reasonably believes would improve public health. Furthermore, EPA offers no criteria for "scientific evidence [that] is robust enough to support . . . quantification."[323] This nebulous requirement could deter EPA from estimating some benefits, or it could induce the agency to confirm scientific evidence that would already suffice for purposes of quantifying benefits. EPA must assess the costs to the agency and the public of failing to regulate pollution that it is statutorily charged with addressing, or conducting superfluous analysis, under this provision as well.

Compounding its demands for unnecessary analysis, the Proposal would impose numerous new and amorphous criteria on EPA's use of concentration-response functions in selecting the health endpoints to quantify in its benefits analyses—without any demonstration that these criteria will improve the agency's ability to fulfill its statutory mandates.[324] Regarding concentration-response functions in epidemiological studies, these specific criteria would apply: "that the study must assess the influence of confounders, that the study location must be appropriately matched to the analysis, and that the study population characteristics must be sufficiently similar to those of the analysis."[325] The Proposal does not define any of these terms, leaving agency staff to guess at which studies would be "appropriately matched" in location or "sufficiently similar" in population characteristics.[326]

If multiple studies satisfy the criteria, EPA must "characterize multiple concentration-response functions."[327] Then:

> (v) The Agency must base decisions about the choice of the number of alternative concentration-response functions quantified for each endpoint on the extent to which it is technically feasible to quantify alternative concentration-response relationships given the available data and resources.
> (vi) The Agency must select and clearly identify concentration-response functions with the strongest scientific evidence, as well as evidence necessary to demonstrate

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id. ("This is doubly true under Clean Air Act § 307(d)(3), which requires EPA to issue a specific 'proposed rule' as a focus for comments.").

[321] EPA, Office of Research and Development, Preamble to the Integrated Science Assessments 22-23 (2015).

[322] *Id.* at 22.

[323] *See* 85 Fed. Reg. at 35,620.

[324] *Id.* at 35,626 (proposed 40 C.F.R. § 83.3(a)(9)).

[325] *Id.* (proposed 40 C.F.R. § 83.3(a)(9)(iii)(D)).

[326] *See id.* at 35,621.

[327] *Id.* at 35,626 (proposed 40 C.F.R. § 83.3(a)(9)(iv)).

> the sensitivity of the choice of the concentration-response function on the magnitude and the uncertainty associated with air pollution-attributable effects.[328]

Determining whether it is "technically feasible" to quantify alternative concentration-response relationships would add a step to EPA's assessment of the scientific evidence. Even more unnecessary (and improper), staff would have to ascertain which concentration-response function would have the greatest effect on benefits, an exercise that appears to be designed to enable manipulation of the benefits analysis. EPA cannot finalize the rule without considering the costs to the agency of running this gauntlet of analytical requirements, as well as the likely effect of the new requirements on public-health protections.

Perhaps most onerous of all, the Proposal would require EPA to disclose all data and models used in the analysis of benefits and costs:

> (12) To the extent permitted by law, the Agency must ensure that all information (including data and models) used in the development of the BCA is publicly available. If the data and models are proprietary, the Agency must make available, to the extent permitted by law, the underlying inputs and assumptions used, equations, and methodologies used by EPA, while continuing to provide appropriate protection for information claimed as confidential business information (CBI), personally identifiable information (PII), and other privileged, non-exempt information.[329]

This provision contemplates that EPA will be responsible for disseminating all of the data and models underlying scientific studies that it relies upon in assessing benefits and costs. EPA must also provide "appropriate protection" for proprietary or personal information—still another undefined term with which agency staff must grapple. And, under this provision, the Office of General Counsel would likely need to make numerous determinations that disclosure is permitted by law.

As commenters have thoroughly explained in opposing EPA's ill-advised Restricted Science proposal, there is no reason that all underlying data and models need to be available to the public in order for valid science to support EPA's regulations.[330] That proposal, at least, makes clear that it would not require the agency to make available to the public all data and models underlying "pivotal regulatory science" and "pivotal science."[331] The present Proposal, however, *does* appear to contemplate—and require—EPA to disseminate the data and models itself.[332] EPA must examine the enormous costs of this requirement to the agency[333]—as well as

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[328] *Id.* at 35,626 (proposed 40 C.F.R. § 83.3(a)(9)(v), (vi)).

[329] *Id.* at 35,627 (proposed 40 C.F.R. § 83.3(a)(12)).

[330] *See supra* n.256.

[331] *See* 85 Fed. Reg. 15,396, 15,402 (Mar. 18, 2020).

[332] *See* 85 Fed. Reg. at 35,627 (proposed 40 C.F.R. § 83.3(a)(12)).

[333] *See* EDF Comments, Docket ID EPA-HQ-OA-2018-0259-12727, at 75-83 (discussing the potential—though unexamined—costs of limiting the scientific information available to the agency to that for which underlying data and models are publicly available).

its implications for public health and environmental protections—if it truly intends to impose them here.

All of these costs are unnecessary under the CAA and would hinder the agency's fulfillment of its statutory mandates. The CAA does not demand a definitively established causal or likely causal relationship between pollution exposure and health impacts. Nor does it require EPA to confine itself to concentration-response functions that satisfy certain criteria, or to seek out concentration-response functions that are not supported by the best available science. Instead, the CAA frequently instructs EPA to regulate where, in the agency's "judgment," the subject of regulation contributes to air pollution that "may reasonably be anticipated to endanger public health or welfare."[334] And EPA has acknowledged that the "best available science must serve as the foundation of EPA's regulatory actions,"[335] a directive with which the proposed disclosure requirements could interfere if it is not feasible for EPA to make underlying data and models public. Thus, the Proposal would interfere with the agency's duties under the CAA by requiring extraneous analysis and disclosure—and by limiting the information available to the agency where it is unable to satisfy the Proposal's numerous, murky, and unjustified requirements. EPA cannot finalize the rule unless it examines the costs to the public of failing to secure the health and environmental protections that the CAA requires.

Aside from additional requirements in conducting benefit-cost analyses, the Proposal would also entail costs associated with EPA's compliance activities, rulemaking decisions, and defense of its rules from attacks stemming from the Proposal.[336] EPA must carefully consider the full range of these likely costs before it can finalize any rule along these lines.

In sum, EPA has completely disregarded the numerous and substantial costs that its rule would likely impose on the agency and the public. The agency has thus ignored an important aspect of the problem, and any action on its Proposal without such analysis—short of withdrawal—would be arbitrary and unlawful.[337]

XII. EPA MUST ALLOW ADDITIONAL OPPORTUNITY FOR PUBLIC COMMENT.

The Administrative Procedure Act "requires that the public have a meaningful opportunity to submit data and written analysis regarding a proposed rulemaking."[338] The purposes of the APA's notice and comment requirements are "(1) to ensure that agency regulations are tested via exposure to diverse public comment, (2) to ensure fairness to affected

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[334] *See* 42 U.S.C. §§ 7408(a)(1)(A), 7411(b)(1)(A), 7521(a)(1), 7545(c)(1), 7571(a)(2)(A); *see also Coal. for Responsible Regulation v. EPA*, 684 F.3d 102, 122 (D.C. Cir. 2012) ("This language requires a precautionary, forward-looking scientific judgment about the risks of a particular air pollutant, consistent with the CAA's precautionary and preventive orientation." (internal quotation marks and citation omitted)), *rev'd on other grounds sub nom. Util. Air Regulatory Grp. v. EPA*, 573 U.S. 302 (2014).

[335] 83 Fed. Reg. 18,768, 18,769 (Apr. 30, 2018) (citing Exec. Order No. 13,563, 76 Fed. Reg. 3821 (Jan. 21, 2011)).

[336] *See supra* section III.E.

[337] *State Farm*, 463 U.S. at 43.

[338] *Prometheus Radio Project v. FCC*, 652 F.3d 431, 453 (3d Cir. 2011) (citing 5 U.S.C. § 553(c)); *see also Rural Cellular Ass'n v. FCC*, 588 F.3d 1095, 1101 (D.C. Cir. 2009) ("The opportunity for comment must be a meaningful opportunity.").

parties, and (3) to give affected parties an opportunity to develop evidence in the record to support their objections to the rule and thereby enhance the quality of judicial review."[339] The Clean Air Act likewise requires that the public be permitted to meaningfully comment on EPA's proposed rulemakings.[340]

Many of the undersigned organizations requested that EPA extend the comment period for this Proposal. These requesters noted the "novel and complex issues raised in the proposed rule" and "far-reaching and significant impacts this proposal would have on EPA's obligation to protect public health and the environment."[341] They explained that "[t]he proposed rule is especially consequential and requires careful scrutiny because it has implications for multiple Clean Air Act standards."[342] On July 22, EPA denied these requests without addressing the arguments for extension.[343]

In a notice published July 23, 2020, the EPA "Science Advisory Board (SAB) staff office announce[d] two public teleconferences of the chartered SAB to review the scientific and technical basis of [this] proposed rule."[344] These meetings are scheduled for August 11, 2020, and September 15, 2020.[345] Particularly in light of the opaque and technical nature of the Proposal, the SAB's discussion will likely provide the public with informative perspectives on the design and possible impacts of this rulemaking. Information from the SAB meetings could significantly enhance the public's ability to comment on this Proposal.

It is indefensible for EPA to retain its comment deadline of August 3, 2020, when the public is likely to become much more informed about the Proposal shortly thereafter. The current

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[339] *Int'l Union, United Mine Workers of Am. v. Mine Safety & Health Admin.*, 407 F.3d 1250, 1259 (D.C. Cir. 2005); *United States v. Reynolds*, 710 F.3d 498, 519-20 (3d Cir. 2013) ("[T]he essential purpose of according § 553 notice and comment opportunities is to reintroduce public participation and fairness to affected parties after governmental authority has been delegated to unrepresentative agencies." (alteration in original) (quoting *Dia Nav. Co., Ltd. v. Pomeroy*, 34 F.3d 1255, 1265 (3d Cir. 1994)); *Idaho Farm Bureau Fed'n v. Babbitt*, 58 F.3d 1392, 1404 (9th Cir. 1995) ("The purpose of the notice and comment requirement is to provide for meaningful public participation in the rule-making process."). "[T]hese policy goals of maximum participation and full information" are of "obvious importance." *Am. Hosp. Ass'n v. Bowen*, 834 F.2d 1037, 1044 (D.C. Cir. 1987).

[340] 42 U.S.C. § 7607(d); *Small Refiner Lead Phase-Down Task Force*, 705 F.2d at 518-19, 550 ("[T]he additional notice requirements in § 307(d)(3) suggest that Congress intended agency notice under the Clean Air Act to be more, not less, extensive than under the APA."); *Sierra Club v. Costle*, 657 F.2d at 398 (D.C. Cir. 1981) (public must be able to meaningfully comment on proposed Clean Air Act rule).

[341] Letter from Environmental Defense Fund, Clean Air Task Force, Earthjustice, Environmental Law & Policy Center, Environmental Protection Network, National Parks Conservation Association, and Sierra Club to EPA Administrator Andrew R. Wheeler re: Request to Immediately Halt and Withdraw EPA's Clean Air Act Cost-Benefit Rulemaking Action, and Extend Deadline for Public Comments on EPA's Notice of Proposed Rulemaking, Docket ID No. EPA-HQ-OAR-2020-0044-0052 (June 26, 2020).

[342] Letter from Gretchen Goldman and Rachel Cleetus, Union of Concerned Scientists, to Administrator Andrew Wheeler, Docket ID No. EPA-HQ-OAR-2020-0044-0053 (June 29, 2020).

[343] *See* Letter from Principal Deputy Assistant Administrator Anne L. Austin to Stakeholders, re: Request to immediately halt and withdraw EPA's Clean Air Act Cost-Benefit Rulemaking Action, and extend deadline for public comments on EPA's Notice of Proposed Rulemaking (July 22, 2020).

[344] EPA, Notification of Two Public Teleconferences of the Chartered Science Advisory Board, 85 Fed. Reg. 44,535 (July 23, 2020).

[345] *Id.* at 44,536.

deadline is in tension with all three of the above-listed purposes of public comments. First, it limits the Proposal's exposure to diverse public comment by requiring the public to engage from a position of relatively little information. Second, it is unfair to the affected parties. The SAB meetings will likely clarify how the public will be affected—and, more fundamentally, who the affected parties are, since EPA provides no explanation of how this Proposal would affect the public. And third, the current deadline limits the evidence in the record, as the SAB meetings will likely present new impacts, critiques, and other considerations for commenters to react to. Further, the SAB's statements on the Proposal should themselves be part of the rulemaking record and record for judicial review, and the agency must extend the public comment period to allow interested parties to collect and submit this vital information.

As noted elsewhere in these comments, the Proposal does not solve any problem or mitigate any threat to public health or the environment that the agency has articulated. No harm would arise from the modest extension necessary to allow the public to hear and react to the SAB's discussions, but refusing to allow additional comments after those discussions would further tarnish this deeply flawed rulemaking.

Submitted by:

CHESAPEAKE BAY FOUNDATION
CLEAN AIR TASK FORCE
ENVIRONMENTAL DEFENSE FUND
ENVIRONMENTAL LAW & POLICY CENTER
ENVIRONMENTAL PROTECTION NETWORK
NATURAL RESOURCES DEFENSE COUNCIL
UNION OF CONCERNED SCIENTISTS

Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/28/2021 7:44:13 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Britain wrestles with climate dilemma as it navigates post-Brexit trade

Britain wrestles with climate dilemma as it navigates post-Brexit trade

By Anna Isaac

02/28/2021 02:41 PM EST

LONDON — Britain wants to be a lean, green, free-trading machine, but there's a catch. Without fixing its trade policy, it risks outsourcing its pollution problem.

And as host of November's global climate summit, COP26, the U.K. has staked its diplomatic credentials on going green.

Like other major economies, it's committed to reaching net-zero carbon emissions by 2050. That means balancing the carbon it adds to the atmosphere against the carbon it removes. Countries are taking this step in a race to stop the most devastating impacts of global warming.

But in stepping up efforts to clean up their domestic economies, countries risk merely shifting the problem by pushing polluting activities overseas.

This is why, economists and trade experts say, Britain can only be a leader on tackling climate change if it matches a "green industrial revolution" with a revolutionary plan for its international trade. With COP26 looming, they say now is the moment to follow through.

"If the U.K. government is serious about addressing climate change, the goal needs to be embedded in all areas of policy including trade," said Gwen Buck, policy adviser at think tank the Green Alliance. "Trade has historically had quite negative, if unintended, consequences for the climate."

The target

The 2015 Paris climate agreement, which the U.S. rejoined under President Joe Biden this year, is the linchpin of international carbon-cutting efforts. It lays out Nationally Determined Contributions — each country or bloc's estimate of the emissions cuts it believes are needed to limit climate change in line with the agreement. The U.K. has also enshrined obligations to cut carbon in its own domestic law with that net-zero 2050 pledge.

Since quitting the EU, the U.K. has said it will go further and faster on the issue, feeding talk of a "Green Brexit." Last December, Prime Minister Boris Johnson said the U.K. would seek to reduce its carbon emissions by 68 percent (compared to 1990 levels) by 2030.

Yet big gaps remain in Britain's math, according to experts. While it lists energy, industrial processes, product use, agriculture, land use and waste, it skips over shipping and aviation. And these are key sectors for trading goods and the movement of people, a crucial aspect of trade in services.

This is regarded as a retrograde step even within Britain's own union of nations, said Emily Lydgate, deputy director at the UK Trade Policy Observatory, and senior lecturer at the University of Sussex. She and doctoral researcher Chloe Anthony recently penned an in-depth study on how the U.K. could craft a green trade policy to match its rhetorical ambitions, arguing that "England has fallen behind global leaders, including Scotland," by not adding shipping and aviation to the mix.

Paying the bill

The U.K. has to find a way to pay its dues for the carbon it consumes without putting up too many trade barriers. Britain, like the EU, has created routes for trying to reduce domestic carbon generation. Industries have been given a cap governing the amount of greenhouse gases they can produce. This allowance will be lowered over time toward the U.K.'s 2050 net zero target.

Under this ceiling, so-called energy-intensive industries like aviation and power generators can trade chunks of their allowance, creating an Emissions Trading Scheme. The U.K. was party to an ETS as an EU member and will now create its own.

Carbon trading has become a growth area in financial markets, letting participants buy and sell emission allowances at auctions. Britain's first will be held in May 2021.

The ETS helps address some of the pollution the U.K. makes at home, but it's focused on only the very dirtiest industries, and doesn't account for swaths of economic consumption. Economists argue that the U.K. simply cannot reach net zero without broad carbon taxes, which means putting carbon-linked levies on more products and services.

Yet too high a price for carbon in the U.K. could make domestic companies less competitive at home and abroad. They could be undercut by foreign competitors if imports don't face the same standards or levies and it could also make British exporters less competitive if they have to pass on additional costs to buyers overseas.

"How do you get political buy-in for these measures if it just leads to carbon leakage?" said Sam Lowe, senior research fellow at the Centre for European Reform.

The answer to this problem, which Lowe, Lydgate and others point toward, is a carbon border adjustment mechanism (CBAM). This would, Lowe explained in a recent report, target taxes on imports from countries without the same carbon pricing mechanisms as the U.K. to encourage fair competition over outsourcing carbon creation.

No quick fix

While a fee on environmentally unfriendly goods can do some of the work, the U.K.'s net zero target will require trade restrictions, Lydgate said. "We can tailor trade policy to our environmental goals, but that might involve restrictions, and that might cause diplomatic issues."

A border levy cannot do enough, even with an ETS regime and expanded domestic taxes, according to Lydgate. Britain might have to introduce screening to ensure inward investment is green enough for domestic standards, and introduce new outright bans on some dirtier goods. The U.K. is already phasing out petrol and diesel cars, for instance.

To avoid penalizing less developed economies, which are often more skewed to heavy industry, there may need to be exemptions from a CBAM up and until these markets reach a higher level of economic growth (as measured by gross domestic product) or if specific industries could compete with the same requirements as domestic companies, Lowe argued.

Any plan to factor shipping pollution into a CBAM would also need to avoid discriminating against exporters based on their distance from the U.K.

Quick wins and high standards

The U.K.'s already taken an important unilateral step in greening its trade policy. When the U.K. set its own global tariffs for the first time post-Brexit, it liberalized tariffs on 104 environmental goods, from energy efficiency products to those linked to recycling and reducing single-use plastics.

In December, Johnson also made a public commitment to end taxpayer support for fossil fuel projects as soon as possible, preventing export finance, aid money and trade promotion funds being used for new oil, gas or coal projects. It came with a strict timeline of being in force ahead of COP 26.

The government has not yet signed up to the Agreement on Climate Change, Trade and Sustainability which binds six countries including Switzerland and New Zealand to driving sustainability through trade. It does this with three aims: making environmental goods and services cheaper by removing tariffs on them; eliminating fossil fuel subsidies; and creating labeling regimes that mean eco-labels are actually meaningful and readily understood by consumers.

A spokesperson for the Department for International Trade said the government was "actively exploring trade policy options to support ambitious action on climate change, including those set out as part of the Agreement on Climate Change, Trade and Sustainability (ACCTS) negotiations."

The U.K. has also reiterated its support for trying to end environmentally harmful fishing subsidies through multilateral efforts at the World Trade Organization. Britain is meanwhile signatory to a host of international agreements that cover polluting goods and actions such as the Rotterdam, Basel and Stockholm agreements on pollutants. In November last year, Zac Goldsmith, minister for the Pacific and environment, said the U.K. would support a new treaty on plastic pollution.

The U.K. has relatively tight rules on trade in endangered species and wildlife as a signatory of the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

Baked-in problems

Still, progress has stalled in other areas. Britain missed some important opportunities to refresh bilateral relationships with the environment in mind post Brexit, experts said. The U.K. managed to roll over a long list of trade deals and agreements with third countries it had accessed previously under EU deals, but it didn't use this as a chance to improve on the agreements' green credentials. Some have little or no sustainability commitments.

Trade deals can also have unforeseen consequences for climate policy. Many trade agreements come with investor-state dispute settlement provisions, which are meant to protect the assets of multinational companies

against state action. Some legal cases arising from ISDS pacts have involved environmental regulations and incentives for renewable energy.

"This can cause regulatory chill. States might not introduce environmental regulation in the first place because they're scared of being taken to court," said Buck from the Green Alliance.

As governments look to move away from fossil fuels, it will create swaths of so-called stranded assets, a problem flagged by the Bank of England, NGOs and academics. Some businesses that lose out are likely to demand compensation from governments, not only at a domestic level, but internationally.

A study from the International Institute for Environment and Development published last year found there were more than 2,600 investment treaties that could fall under ISDS agreements. Like other states caught in the web of these agreements, the U.K. would likely need to set aside money in case fossil fuel companies win legal fights triggered by government efforts to improve the environment.

When it comes to bilateral relationships, the U.K. is being urged to pursue free trade agreements with states that also want to improve their green credentials. "There's a diplomacy angle here," said Buck. "We should be prioritizing those states who are taking climate seriously or states who want to learn from how the U.K. is doing climate change policy."

Pushing a strategy of tying climate standards to FTAs could prove challenging in Britain's efforts to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership. The pact, which includes 11 countries, includes palm oil producers such as Malaysia. Palm oil is used in a vast number of ordinary household goods and is a major driver of deforestation.

"When the U.K. is going into those negotiations, are they talking to them about concerns about palm oil? Could those two things be linked?" said Buck.

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Message

From: Murphy, Tina [Murphy.Tina@epa.gov]
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CC: Newberg, Cindy [Newberg.Cindy@epa.gov]; Hall-Jordan, Luke [Hall-Jordan.Luke@epa.gov]; Chang, Wei-An (Andy) [Chang.Andy@epa.gov]; Clarke, Deirdre [clarke.deirdre@epa.gov]; Kocchi, Suzanne [Kocchi.Suzanne@epa.gov]
Subject: AIM Act HFC Allocation Rule Options Selection (Wednesday, February 17th: 4-4:45pm)
Attachments: AA-Options-Selection-NPRM-2.17.21.docx

Dear OAR Leadership Team:

Please find attached briefing material for tomorrow's AIM Act HFC Allocation Rule Options Selection, scheduled with Joe at 4-4:45 pm.

Just let us know if you have any questions.

Thank you.

Message

From: Michaels, Lauren [Michaels.Lauren@epa.gov]
Sent: 3/18/2021 1:17:11 PM
To: OAR Briefings [OAR_Briefings@epa.gov]
CC: OTAQ Materials [OTAQMaterials@epa.gov]; Charmley, William [charmley.william@epa.gov]
Subject: For Ale's Pre-Signature Review: RFS Compliance Date Extension FRM
Attachments: Compliance Date FRM 3-18-21.docx

Attached is the RFS Compliance Date Extension FRM for Ale's pre-signature review.

Please let me know if you have any additional questions or concerns.

Thanks,
Lauren

Lauren A. Michaels
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The Honorable Jane Nishida
Interim Acting Administrator, Environmental Protect Agency
1200 Pennsylvania Ave NW
Washington, DC 20004

February 4, 2021

The American Institute of Architects
1735 New York Avenue NW
Washington, DC 20006

T (800) 242 3837
F (202) 626 7547

aia.org

Dear Ms. Nishida:

On behalf of the more than 95,000 members of the American Institute of Architects (AIA), we offer our best wishes to President Biden and Vice President on their win. AIA looks forward to working with you and to serving as a resource as you address the many challenges we are facing as a country.

The purpose of this letter is to highlight AIA's climate action priorities and to respectfully request a meeting with you to discuss these priorities, which we appreciate are a shared concern. AIA acknowledges the overwhelming scientific evidence that human activity is warming our climate to dangerous levels, and carbon from buildings is a primary culprit. Buildings must consume less energy, use only renewable sources, and contribute power back to the energy grid. AIA is taking action to eliminate all building carbon emissions by 2040.

AIA looks forward to working with the Biden Administration and the new leadership at the EPA on the following climate action initiatives:

Provide American leadership: Rejoin the Paris Climate Accord

AIA commends the Biden Administration's efforts to rejoin the United States to the Paris Climate Accord. On November 5, 2019, AIA issued a statement opposing the United States' withdrawal from the Paris Climate Accord, stating that withdrawal from the Paris Accord was an "abdication of America's leadership on climate action [that] undermines our nation's credibility on the global stage." Climate change, and its causes and impacts, cannot adequately be addressed by state or municipal governments or effectively remediated in isolation. AIA urges the Biden administration to support science-based environmental regulation and urges the continued funding of advanced scientific research on the relationship between the built environment and human health.

Promote science-based environmental regulation & research

AIA supports Department of Energy (DOE) and Environmental Protection Agency (EPA) programs that are critical to the practice of sustainable design including Energy Star and its suite of programs (Portfolio Manager, Target Finder, etc.), the Commercial Building Energy Consumption Survey (CBECS) database, and NOAA's U.S. Climate Reference Network (USCRN) and others. AIA supports the advancement of the 2012 EPA Guidelines for Water Reuse in developing rigorous guidelines for graywater and storm water reuse. We also strongly support chemical safety research including the EPA's Integrated Risk Information System (IRIS) database and Chemicals of Concern Action Plan.

Provide federal leadership on climate & cross-departmental integration:

AIA appreciates the Biden Administration pledge to make addressing climate change a top priority of national policy. Our government must integrate and better coordinate the administrative departments that assist communities and individuals in responding to disaster recovery and weather-related impacts. EPA should work to improve coordination with other agencies, including continued support for the General Service Administration's (GSA) leadership in lowering building operating costs through high performance, designing healthy and sustainable buildings, and attracting top talent to public service.

Actively address the disproportionate impact of climate change & environmental degradation on communities of color:

In order to address the disparity of impact, the Biden Administration should strengthen and expand intra-governmental partnerships to focus specifically on providing direct assistance and planning support to overburdened and underserved communities. Part of this should involve an expansion of the EPA's national Technical Assistance Services for Communities (TASC) Program to help overburdened and underserved communities access environmental impact analysis tools and advance environmental protections. EPA should also accelerate the work of the EPA's National Environmental Justice Advisory Council (NEJAC) to provide independent advice to the Administrator on broad, crosscutting matters of environmental justice, and greatly expand its national agenda for public meetings.

Thank you for your consideration of this letter. We would make every effort to accommodate your schedule and meet whenever you have availability. Thank you for your public service during this critical period in our nation's history.

Sincerely,

Sarah Dodge

Sarah Dodge
Senior Vice-President of Advocacy + Relationships

Message

From: Rakosnik, Delaney [rakosnik.delaney@epa.gov]
Sent: 2/25/2021 3:42:56 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Gunning, Paul [Gunning.Paul@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Koerber, Mike [Koerber.Mike@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Culligan, Kevin [Culligan.Kevin@epa.gov]; Kocchi, Suzanne [Kocchi.Suzanne@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]
Subject: FW: Follow Up to Today's Meeting
Attachments: Forest Utilization Slides.pptx

FYI: Follow up from the NAFO (Dave Tenny) meeting yesterday.

Many thanks!

Delaney Rakosnik
Staff Assistant
Immediate Office of the Assistant Administrator
Office of Air and Radiation, USEPA
Room 5406A, 1200 Pennsylvania Avenue NW
Washington, DC 20460
Voice: 202-564-0935
Email: rakosnik.delaney@epa.gov

From: Dave Tenny <dtenny@nafoalliance.org>
Sent: Wednesday, February 24, 2021 6:03 PM
To: Rakosnik, Delaney <rakosnik.delaney@epa.gov>
Subject: Follow Up to Today's Meeting

Hi, Delaney – thanks again for your help in scheduling our meeting with Joe and the team today. Would you mind sharing the following with the meeting participants?

1. The attached forest utilization slide deck describing how private working forests are harvested and used; and
2. This link to the Food and Agriculture Climate Alliance describing the work we are doing with the ag sector on land-based climate solutions

These will provide greater context for future discussions.

Thanks, Delaney!

Dave

David P. Tenny
President and CEO

National Alliance of Forest Owners
122 C Street N.W., Suite 630
Washington, D.C. 20001

703-964-7519 – Mobile
NAFOAlliance.org

NAFO

Healthy markets for forest products provide clean air and water, wildlife habitat, and jobs

Message

From: Culligan, Kevin [Culligan.Kevin@epa.gov]
Sent: 3/16/2021 10:05:06 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]
CC: Shoaff, John [Shoaff.John@epa.gov]
Subject: 111(b) and (d) entries
Attachments: EG_Fossil_Fuel_Reg_Agenda_Entry3_16_21.docx; Review of NSPS for GHG Emissions New Modified Reconstructed Stationary Sources EGUs 3_16_21.docx

John's team will get these formally loaded tomorrow morning, but wanted to give you an opportunity to review tonight if you wanted.

Kevin (202)222-5351

Sent from my iPhone

Begin forwarded message:

> **From:** "Iglesias, Amber" <Iglesias.Amber@epa.gov>
> **Date:** March 16, 2021 at 5:51:18 PM EDT
> **To:** "Culligan, Kevin" <Culligan.Kevin@epa.gov>
> **Subject: Reg Agenda Entries**
>
> Kevin,
>
> Attached are the reg agenda entries for OAR.
>
> Amber Iglesias
> EPA Office of Air Quality Planning and Standards
> 1200 Pennsylvania Ave., NW
> Washington, D.C. 20460
> 202-564-3175

Message

From: Dave Tenny [dtenny@nafoalliance.org]
Sent: 2/24/2021 8:44:53 PM
To: Joe Goffman - Environmental Protection Agency (Goffman.joseph@epamail.epa.gov) [Goffman.joseph@epamail.epa.gov]
Subject: Context for Today's Meeting

Hi, Joe – As context for our meeting this afternoon, I thought it would be helpful to share the CEO Climate Principles adopted by NAFO member company CEOs and the CEOs of EDF, TNC, American Forests and the American Forest Foundation. These give you a good idea of our climate priorities. Looking forward to talking at 4:30 today.

Dave

David P. Tenny
President and CEO

National Alliance of Forest Owners
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Washington, D.C. 20001

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NAFOAlliance.org

NAFO *Healthy markets for forest products provide clean air and water, wildlife habitat, and jobs*

Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/8/2021 10:02:48 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: POLITICO Pro Q&A: Sen. Ed Markey

POLITICO Pro Q&A: Sen. Ed Markey

By Anthony Adragna

02/08/2021 05:00 AM EST

A decade after his push for a major cap and trade bill derailed in the Senate, now-Sen. Ed Markey (D-Mass.) says the drive for a Green New Deal is helping boost momentum and pave the way for Congress to make major progress on climate change in 2021.

Markey, who touted his climate change work to help fend off a primary challenge last year from former Rep. Joe Kennedy III, is pleased with President Joe Biden's early moves on climate change as "very consistent with the goals" of the Green New Deal resolution he unveiled two years ago alongside Rep. Alexandria Ocasio-Cortez (D-N.Y.).

In an interview Friday, the member of the Environment and Public Works Committee wants Democrats to pursue a clean energy standard rather than carbon pricing in their push for climate legislation. And one of his lessons he says he learned from the 2009 battle over his cap and trade legislation with former Rep. Henry Waxman is to move quickly, and he's warning fellow Democrats not to allow the push for climate change legislation "to slip into 2022."

This transcript has been edited for length and clarity.

President Biden set this overarching goal of delivering 40 percent of benefits from his climate agenda to disadvantaged communities. Your THRIVE resolution kind of outlines the principles for that. Your legislation H.R. 516 (117) with Rep. Cori Bush (Mo.) helps identify those communities. Where does the money come from?

The goal is going to be to spend what is necessary in order to ensure that we have dealt with the climate crisis and the environmental justice agenda. And our goal will be to identify revenues where possible and necessary, but not to the exclusion of paths in the agenda because we know that in the long run, the benefits which flow to individuals and communities across the country — in reduced environmental harm, increased health care benefits — will pay huge dividends to our country's well-being.

Do you see that 40 percent goal including coal communities or other fossil fuel dependent communities that are at risk of being left behind in the clean energy transition?

One hundred percent. The agenda has to reflect the concern for communities that are being impacted, economically and environmentally, by the existing energy structure in our country. And in the same way that in 2009, [former Energy and Commerce Committee Chair] Henry Waxman and I included a huge program to deal with impacted communities and workers, we are going to have to do so in any legislation that we pass this year and in a significantly increased way because the damage to workers and to the environment is something that is central [to] an environmental justice agenda.

A lot of labor leaders are saying "a lot of these Democratic proposals sound good to me," but they're worried about getting buy in-from the workers on the ground who perhaps are not voting Democratic or are skeptical of these promises. What lessons have you learned from Waxman-Markey?

In 2009, Henry and I were very focused on ensuring that the AFL-CIO endorsed the bill. Building trades endorsed the bill. The steel workers endorsed the bill. The utility workers would endorse the bill. The United Auto Workers would endorse the bill. And they all did. What we were able to determine retrospectively as a problem — and I think it was the Yale School of Environment which did this study — and they determined that Waxman-Markey had more lobbying money against it than any other bill in the history of Congress. That's quite a high bar — number one in the whole history of Congress. So, yeah there was a lot of misinformation that was spread about that bill and its impacts.

What I decided that we needed — and that's why I partnered with Alexandria Ocasio-Cortez — is that we needed a movement. We needed our army. We needed our own political muscle that we were going to bring into this fight. So now the issue of climate change and environmental justice has moved up to the very top of all issues in our country. It was always an important issue, but the political intensity was low.

Now that political intensity gap has collapsed, so it's an important issue and there's an intense amount of interest around it. So our goal has to be that we message into these communities that we want to ensure that we're creating union jobs, we're taking care of any existing workers, and we want to ensure that 40 percent of this funding in the Biden climate plan is spent in a way that reflects the historic impact of the fossil fuel industry on communities — and that includes West Virginia communities and other traditionally fossil fuels employment-heavy states.

Are you thinking through it that a coal job becomes a solar job, or what that new economic reality looks like in a place like West Virginia, for example?

Well, I know there's a new wind company project that's quite significant in West Virginia that the state government is touting and I think that's a reflection of the transition that West Virginia's economy — the whole country's economy — is going through. And we have to ensure that we do have a transition that's a just transition for workers who are impacted, but also that those states derive a huge benefit from the new energy developments and infrastructure, which is going to be created in our country over the next 10 to 15 years.

To the extent that the Biden administration is bringing back a lot of people deeply involved with these issues in the Obama administration, how has the landscape or dynamic changed in four years?

Well, I think the Green New Deal resolution — Alexandria Ocasio-Cortez and I, we introduced it two years ago this week. And when we introduced it, obviously Fox News and Republican leaders attacked it quite bitterly, but the effect of the Green New Deal was to integrate climate change and energy issues with environmental justice. And so now for the Biden administration, the key test for a climate package will be: Does it center justice and repair harms to communities? Does it avoid false solutions that could actually do more damage? Does it enact change with the speed and urgency demanded by the scope of the crisis? And does it create good-paying, union, green jobs as part of the new clean energy economy?

Minority Leader Mitch McConnell said earlier this week that Biden's early executive actions amounted to a "piecemeal Green New Deal." As the Green New Dealmaker, do you think he is right?

I would say that it's an excellent start. Talking about Joe Biden, it's an agenda that in my opinion is going to have climate justice built into every reconciliation package — in any legislative vehicle, wherever that's possible — because environmental justice deserves to be a part of pandemic response legislation. And everything that President Biden has said thus far reflects that goal of elevating climate justice to the top of the

political agenda. So I think that what President Biden is doing is very consistent with the goals of the Green New Deal and the THRIVE agenda, which again centers energy policy, climate policy in environmental justice.

You've been beating this drum for decades. Are you surprised at just how much traction you've gotten in the last couple of years through the Green New Deal and these other initiatives?

Henry Waxman and I were able to draft the Waxman-Markey bill, all 1,400 pages, that today looks prescient. But it needed another ingredient, and that additional ingredient was the Green New Deal resolution that created the political dynamic and the high ambition that activated young people and old across the country into a movement that has very, very powerful political strength. So that was my plan. That was the goal, which Alexandria and I had when we introduced the Green New Deal. It was to take that high ambition agenda and to put it in a position where there would be a political consensus, at least in the Democratic Party, that we had to move big and fast to deal with this crisis. And that's where we are across the entirety of the Biden administration and for the most part, across the entirety of the Democratic Party. And the polling, I think, indicates that many Republicans agree with that agenda.

So, in other words, it was successful. What Henry and I were able to do is lay out the framework for utilities, for fuel economy and renewables. It's all there and now it's going to be the agenda. It has to have higher ambitions because of four years of [former President Donald] Trump. But it is gratifying to see how it's all coming together — the policy and the political movement to thrust the climate justice agenda to the top of the list of priorities for our country to deal with in 2021.

Republicans seem to have retrenched to very familiar talking points from half a decade ago on things like the Keystone XL pipeline and carbon pricing, while corporate America in many ways has shifted quite dramatically. Are you surprised by that dynamic?

Is Republican Party a lagging indicator of where the country is on climate issues? Yes, absolutely. The decision made by General Motors to announce that in 2035 that they are going to go to 100 percent zero-emissions vehicles — and the now supplemental decision by Chrysler and Toyota and other companies to join in moving in that direction — is an indication that now there is a great divide between Republican Party orthodoxy and where the private sector has now moved on these clean technology issues.

I think what's happening in the utility sector, what's happening in the automotive sector, is the reflection of how industry chieftains now realize the inevitability of their need to square up their business agenda with the climate crisis that our country and the world is facing. And for many of the companies, especially the ones that are multinationals, they have to implement this agenda anyway in Europe, which has moved very aggressively. And [with] China and other countries making announcements about their goals in the automotive sector, American companies finally are realizing that if they don't move in that direction, they won't have international markets in 15 years because they won't have product that complies with the national goals of other countries around the world — China, India and others.

General Motors' decision is a very important moment in this debate because the largest of our companies has now recognized that there is an existential threat to their business model that is being posed by Tesla and by the global movement towards an all-electric vehicle. That gives us the working political, and economic recombinant DNA to produce good legislation this year.

In light of that landscape, do you have a view on whether it's better to push for carbon pricing, a clean energy standard or something else, through reconciliation if it comes to that? Or is the best path in regular order?

That's a great question, and my view is that sector-wide solutions like a clean energy standard can help enact the Biden campaign promise of moving toward 100 percent carbon-free electricity sector by 2035. And there's a

strong case to be made that this policy proposal can be done through reconciliation. It's effective, it's endorsed by the Biden campaign, [and] it polls very well. And I think it should be our starting point for climate negotiations, not a carbon tax.

Is that view shaped by your past battles? Or has the landscape shifted?

I think that goal has to be, again as I said earlier, does it center justice? Does it avoid solutions that could wind up with those who are less economically well-off being disproportionately impacted? So, my feeling is that a clean energy standard enables the federal government to map out and prioritize environmental justice communities that have been historically marginalized and burdened with toxic pollution — and to do so in a way that has the double [impact] of a carbon tax. That's from my perspective, what the Green Deal in the THRIVE agenda is all about and so from my perspective, I think that's the direction that we should be heading.

You must feel pretty good about how Majority Leader Chuck Schumer has been talking about these issues and placing them very much front and center of his agenda.

Chuck Schumer has been great on these issues. And he's a co-sponsor of the THRIVE agenda that we introduced. He came to the press conference when we introduced it back last fall with [Rep.] Deb Haaland, as the house sponsor. And I will say this: That that was not on the scoreboard last year that Deb Haaland, my co-partner on the THRIVE agenda, would become the Secretary of Interior. But it just shows how quickly the perspective has changed in what has to be accomplished in [the] climate sector and Chuck Schumer has been a real voice for fundamental change.

Are there any other lessons from Waxman-Markey a decade ago that you're going to take with you as you begin to think about enacting a climate agenda this Congress?

Henry Waxman and I decided to draft that bill and to finish it quickly. We passed the bill through the House of Representatives on June, 26 2009, Barack Obama had been inaugurated on Jan. 20. We started the hearings before he was sworn in as a president. So my belief is that we had the right strategy in the House in 2009, and in 2021, the House and Senate both must move quickly to implement a climate crisis response legislative package and to not allow it to slip into 2022. It must be done, and it must be done quickly, and we should go.

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https://subscriber.politicopro.com/energy/article/2021/02/politico-pro-q-a-sen-ed-markey-2033402

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Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/4/2021 6:24:39 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Wind power sets new record in 2020 despite pandemic

Wind power sets new record in 2020 despite pandemic

By Kelsey Tamborrino

02/04/2021 01:23 PM EST

Despite the pandemic that produced the worst U.S. economic performance since the 1940s, the U.S. wind power industry notched its best year in history and finished with a strong fourth quarter.

The fourth quarter of 2020 represented a record for the industry, a timely tailwind as the Biden administration doubles down on expanding renewables and transitioning to a clean energy economy.

"Up front, it's a pretty incredible year for the industry — in fact it's the best year ever in terms of new capacity additions," John Hensley, vice president of research and analytics at the American Clean Power Association told reporters Thursday.

Most of that record growth in 2020 occurred in the fourth quarter, when the industry added 10,593 megawatts of new power capacity, enough to power about 3 million homes.

"It's not only the strongest fourth quarter that we've ever seen in the industry, but it's actually more capacity coming online in a single quarter than we've seen in any other full year, except for 2012. So, just an incredible amount of wind all coming in, in the last three months of the year," Hensley added.

For all of 2020, the industry commissioned 16,913 MW in wind power installations, representing an 85 percent increase over 2019, according to the ACP, a trade group that formally launched earlier this year and was formed out of American Wind Energy Association and other companies.

In total, there are 122,468 MW of wind energy capacity operating in the U.S., the report said, with more than 60,000 wind turbines spread across 41 states and two U.S. territories. That figure does not include the pipeline of new projects across the U.S. totaling 34,757 MW that were under construction or in advanced development by the end of December 2020.

That pipeline of activity decreased by 20 percent at the end of the fourth quarter from the previous quarter, the report said, "due to the record level of commissioning in 2020."

The strong growth across the industry comes on the heels of President Joe Biden's executive order last month that called for increasing renewable energy production on public lands and waters.

The order is part of Biden's aggressive plan to combat climate change while creating millions of union jobs. He has set a goal to achieve a carbon pollution-free power sector by 2035 and a net-zero economy by 2050, goals that will require "rapid rates of change and unprecedented levels of funding," according to a report released Tuesday by the National Academies of Sciences.

Thursday's report also cited strong growth elsewhere in the clean power sector, with solar power and energy storage setting their own annual capacity addition records in 2020.

Utility-scale solar additions more than doubled from 2019, with 11,158 MW installed across the sector — a 37 percent improvement on the previous record set in 2016, while utility battery storage also increased over 300 percent from 2019 as the industry installed 734 MW.

Still, the coronavirus pandemic has affected employment in the renewables industry hard.

More than 67,000 total renewable electric power generation workers — or about 12 percent of the sector's workforce — remain unemployed due to the pandemic, according to a January report from BW Research Partnership.

Hensley noted that ACP had been tracking more projects to come online in 2020 than what was actually seen.

"I think that's a reflection of some of the challenges that we did see with Covid whether it was in terms of logistics, supply chain or issues directly on site as companies race to ensure the safety and well being of everybody that was putting these projects together," he said.

But he added that a number of those expected projects have slipped to 2021, calling it a "testament to the added flexibility" that came through IRS guidance that extended the safe harbor period by an extra year.

"The pipeline is still quite large," he said. "We've got 35 gigawatts that are either under construction or advanced development — a good portion of that is expected online in 2021. [But] we're going to continue to see some challenges from Covid, supply chain related."

Looking ahead, Morgan Stanley said this week it projects renewable generation will make up 55 percent of the U.S. power mix by 2035. By 2030, renewables will comprise 39 percent of U.S. electricity, outpacing coal, which by that time would make up 3 percent of the mix, and nuclear and gas, which the analysts predict will make up 18 percent and 28 percent, respectively.

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https://subscriber.politicopro.com/energy/article/2021/02/wind-power-sets-new-record-in-2020-despite-pandemic-2032503

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March 3, 2021

Mr. Joseph Goffman
Principal Deputy Assistant Administrator
Office of Air and Radiation
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dear Mr. Goffman,

On behalf of the National Biodiesel Board's members, I want to express our appreciation for the administration's commitment to ensure that America's agriculture sector has a seat at the table in addressing climate change. Because we share President Biden's vision of decarbonization of the nation's transportation sector, we would respectfully request to meet with you to discuss the biodiesel industry's role – right now and in the future – in that priority.

NBB represents U.S. biodiesel, renewable diesel, Bioheat®, and sustainable aviation fuel producers as well as soybean growers and waste fats and oil processors. We look forward to working with the Biden administration to meet the nation's pressing need for clean transportation options to address environmental challenges.

In his climate plan, President Biden pledged to "double down on the liquid fuels of the future, which make agriculture a key part of the solution to climate change." He highlighted advance biofuels that create "jobs and new solutions to reduce emissions in planes, ocean-going vessels, and more."

Biodiesel and renewable diesel are the most widely used advanced biofuels today. Every year, they meet more than 90 percent of the Renewable Fuel Standard's advanced biofuel volumes and an important portion of the overall renewable fuel volumes. Our industry also produces other emerging advanced biofuels – such as sustainable aviation fuel, heating oil, and naphtha – to meet the RFS goals. To fully emerge, these advanced biofuels need additive market space under the RFS.

Biodiesel and renewable diesel are also vital to the success of state programs. Combined, they generate 45 percent of the carbon credits for both California's Low Carbon Fuel Standard and Oregon's Clean Fuels Program every year. California achieved an overall 6 percent reduction in the carbon intensity of its fuel in 2019, with biomass-based diesel leading the way.

Both California and Oregon have extended their programs through the next decade to capitalize on this success. Other states – from the Midwest to New York – are looking at these programs as models.

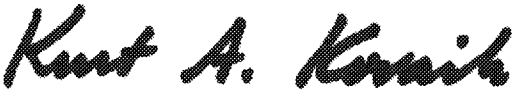
Biodiesel and renewable diesel also reduce particulate matter and hydrocarbon emissions that contribute to higher lung and heart disease rates associated with poor air quality. Progress in reducing the health costs and impacts of lung disease is vital right now. Several large cities, such as New York and Chicago, rely on biodiesel to fuel city fleets and heat buildings to meet their clean air goals.

Sustainable growth in the federal RFS is necessary to support these state goals and address the nation's climate challenge.

We would appreciate the chance to meet with you at your earliest convenience to discuss our industry's vision to double production and use of biodiesel, renewable diesel, sustainable aviation fuel, and Bioheat® over the next decade. We will be happy to answer any questions you have about our industry's sustainable future growth under the RFS and ability to contribute to the nation's goal to address carbon emissions.

I can be reached at the phone number below and will look forward to hearing from you regarding a date and time that you can meet with NBB.

Thank you for your consideration,



Kurt Kovarik
Vice President of Federal Affairs
National Biodiesel Board
Washington, DC
202-737-8801

Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 3/8/2021 4:39:04 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]
CC: Kabanda, Thierry [Kabanda.Thierry@epa.gov]; Rakosnik, Delaney [rakosnik.delaney@epa.gov]
Subject: ECOS Agenda
Attachments: Agenda-Spring-2021-Meeting-030421.pdf

Joe, Tomas, Ale – attached is the full ECOS Agenda. I've flagged below those sessions I think you may want to make time to attend.

TUESDAY

1:30 – 1:55 p.m. Eastern	**Welcome & Introductions** ❖ Welcome, ECOS President Patrick McDonnell, Secretary, Pennsylvania Department of Environmental Protection ❖ Roll Call & Self-Introductions, ECOS Deputy Director Carolyn Hanson & ECOS members ❖ Update on ECOS Activities with the New Administration and Congress, ECOS Executive Director Don Welsh ❖ Agenda Preview, Patrick McDonnell
1:55 – 2:40 p.m. Eastern	**Keynote Presentation followed by Q&A: The Honorable Michael Regan, Administrator, U.S. EPA (invited pending confirmation), on Federal Priorities & Partnering with ECOS, moderated by ECOS President Patrick McDonnell, Secretary, Pennsylvania Department of Environmental Protection**
2:40 – 3:25 p.m. Eastern	**Roundtable & Open Discussion: Complex Challenges – Tackling PFAS, Harmful Algal Blooms, & 1,4-Dioxane** *This session will showcase the latest policy and research surrounding three contaminants presenting unique challenges for state and federal regulators– PFAS, Harmful Algal Blooms, and 1.4-Dioxane. Presenters will also offer insight on regulatory best practices and risk communication.* ❖ ECOS Cross-Media Committee Chair Richard Whitman, Director, Oregon Department of Environmental Quality (moderator) ❖ Jennifer Orme-Zavaleta, Acting Assistant Administrator, U.S. EPA Office of Research & Development ❖ Mitch Olson, PE, Environmental Engineer, Trihydro
3:25 – 3:40 p.m. Eastern	**Break**

3:40 – 4:20 p.m. Eastern

Roundtable & Open Discussion: Advances in Air & Water Monitoring – Augmenting Data while Conserving Resources

The past decade has seen significant advances in the development and use of environmental monitoring technology. Join speakers from states, U.S. EPA, and a technology firm as they explore innovative ways that low-cost sensors and monitors are being put to good use.

- ECOS Region 5 Executive Committee Representative Liesl Eichler Clark, Director, Michigan Department of Environment, Great Lakes, & Energy (moderator)
- ECOS Cross-Media Chair Richard Whitman, Director, Oregon Department of Environmental Quality
- Meghan Smart, Lead Environmental Scientist and Citizen Science Coordinator, Arizona Department of Environmental Quality
- Tim Watkins, Director, Center for Environmental Measurement & Modeling, U.S. EPA Office of Research & Development
- Meena Sankaran, Founder & CEO, KETOS Inc.

WEDNESDAY

2:00 – 2:40 p.m. Eastern

Roundtable & Open Discussion: Innovative Policy Approaches to Greenhouse Gas Reduction

As climate moves to center stage at the federal level, states will continue to play a key role in driving reductions of greenhouse gas (GHG) emissions. Join this panel of state and federal policymakers as they explore strategies for GHG reduction in various sectors.

- ECOS Air Committee Chair Sheila Holman, Assistant Secretary for the Environment, North Carolina Department of Environmental Quality (moderator)
- Janet Coit, Director, Rhode Island Department of Environmental Management
- Trisha Oeth, Acting Environmental Programs Policy Advisor, Colorado Department of Public Health & Environment
- The Honorable Gina McCarthy, White House National Climate Advisor (invited)
- Vicki Arroyo, Associate Administrator for Policy, U.S. EPA

2:40 – 3:20 p.m. Eastern

Roundtable & Open Discussion: Groundbreaking Partnerships for Methane Reduction

Many industries are pioneering voluntary approaches to reducing their carbon footprint. This session will provide an overview of some creative partnerships surrounding methane, including a record-setting carbon capture project involving livestock lagoons and a joint effort by the gas and utility industries to enhance reporting.

- ECOS Air Committee Vice Chair and Region 6 Executive Committee Representative Jon Niermann,

	Chairman, Texas Commission on Environmental Quality (moderator) ❖ Mandy Tornabene, Vice President, Environmental Services, Dominion Energy ❖ Stewart Leeth, Chief Sustainability Officer, Smithfield ❖ Karen Obenshain, Senior Director, Fuels, Technology & Commercial Policy, Edison Electric Institute ❖ Pam Lacey, Chief Regulatory Counsel, American Gas Association
3:55 – 4:35 p.m. Eastern	**Roundtable & Open Discussion: Environmental Equity – Getting to Know Our Communities & Recognize Disparities** *To ensure that all Americans have healthy environments in which to live, learn, and work, states are pursuing an array of initiatives to provide fair treatment in delivering favorable environmental outcomes. Hear from three states on their approaches, successes, and lessons learned.* ❖ ECOS President Patrick McDonnell, Secretary, Pennsylvania Department of Environmental Protection (moderator) ❖ Environmental Research Institute of the States President David Paylor, Director, Virginia Department of Environmental Quality ❖ Serena McIlwain, Undersecretary for Environmental Protection, California Environmental Protection Agency ❖ ECOS Secretary-Treasurer and Planning Committee Chair Myra Reece, Director of Environmental Affairs, South Carolina Department of Health & Environmental Control
4:35 – 5:00 p.m. Eastern	**Keynote Presentation followed by Q&A: The Honorable Tom Carper (D-DE), Chairman, Senate Environment & Public Works Committee, on Environmental Priorities for the 117th Congress, moderated by ECOS Vice President Ben Grumbles, Secretary, Maryland Department of the Environment**

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

2021 ECOS Virtual Spring Meeting Agenda
Navigating Change
March 16 at 12:00-5:30 p.m. Eastern
March 17 at 12:00-5:15 p.m. Eastern
#ECOSSpring21

In a time of mounting environmental and budgetary challenges and transition to a new federal Administration, the ECOS platform for partnership and innovation is more critical than ever. ECOS member agencies are successfully navigating change through strategic alliances; creative use of technology; and the sharing of policies and best practices in air, water, land, compliance, PFAS and other emerging contaminants, pandemic adaptation, environmental justice, and more. The 2021 ECOS Spring Meeting will showcase many of these initiatives while marking the start of cooperative work with new U.S. EPA and congressional leaders.

Notes: 1) To promote full audience participation during work hours in all U.S. time zones, ECOS will conduct separate webinars on other days for states-only business.
2) Except where otherwise indicated, all sessions are open to all registrants.
3) Dress is business casual. Wear green on March 17 in honor of St. Patrick's Day – and the environment.

Tuesday, March 16 ECOS Workgroups, Partnering with U.S. EPA & State Agencies, Water, Compliance, & Contaminants	
12:00 – 1:15 p.m. Eastern	**Breakout Option #1: ECOS Oil & Gas Caucus (OGC) on Considerations for Produced Water Permitting (open to all)** *States are undertaking a variety of innovative activities on produced water discharge and reuse in order to promote sound permitting practices. Hear from ECOS, NGO, and industry voices on rulemakings, research, and other efforts.* ❖ ECOS OGC Co-Chair Dave Glatt, Director, North Dakota Department of Environmental Quality (moderator) ❖ Joe de Almeida, Director of Water Strategy & Technology, Occidental Oil & Gas Corporation ❖ Shellie Chard, Director, Water Quality Division, Oklahoma Department of Environmental Quality ❖ Jim Rizk, Senior Advisor, Texas Commission on Environmental Quality ❖ Rebecca Roose, Director, Water Protection Division, New Mexico Environment Department ❖ Nichole Saunders, Senior Attorney, Environmental Defense Fund ❖ Matthias Sayer, Vice President, Legal – Regulatory Compliance, Policy, & Environment, NGL Energy Partners
12:00 – 1:15 p.m. Eastern	**Breakout Option #2: ECOS Digital Business Workgroup (DBWG) on State and U.S. EPA Priorities & Virtual Lean Boards (open to states and U.S. EPA)** *This breakout will feature updates from workgroup chairs on key DBWG issues for 2021. It will also include presentations on Arizona's virtual Lean boards and top priorities for U.S. EPA's Chief Information Officer.* ❖ ECOS DBWG Chair Victoria Phillips, Director, Enterprise Information Office, Massachusetts Department of Environmental Protection (co-moderator) ❖ ECOS DBWG Vice Chair Neil Chakrabarty, Chief Information Officer, West Virginia Department of Environmental Protection (co-moderator) ❖ Mike Keyack, Deputy Director, Arizona Department of Environmental Quality ❖ Vaughn Noga, Chief Information Officer, U.S. EPA

12:00 – 1:15 p.m. Eastern	**Breakout Option #3: ECOS-U.S. EPA Partnership & Performance (P&P) Workgroup on Connecting the Dots among Workplans, Strategic Plans, & Performance Reporting (open to states and U.S. EPA)** *This breakout will include a discussion with U.S. EPA on the Evidence Act and the agency's Learning Agenda for Grant Commitments, and on "connecting the dots" between state grant workplans and U.S. EPA's performance reporting to Congress.* ❖ P&P Workgroup ECOS Co-Chair Elaine Boyd, Senior Advisor, Tennessee Department of Environment & Conservation (co-moderator) ❖ P&P Workgroup ECOS Co-Chair Lloyd Kirk, Director, Office of External Affairs, Oklahoma Department of Environmental Quality (co-moderator) ❖ P&P Workgroup U.S. EPA Co-Chair Robin Richardson, Acting Associate Administrator, U.S. EPA Office of Congressional & Intergovernmental Relations ❖ P&P Workgroup U.S. EPA Co-Chair Kathy O'Brien, Director, Office of Planning, Analysis, & Accountability, U.S. EPA Office of the Chief Financial Officer
1:15 – 1:30 p.m. Eastern	**Break**
1:30 – 1:55 p.m. Eastern	**Welcome & Introductions** ❖ Welcome, ECOS President Patrick McDonnell, Secretary, Pennsylvania Department of Environmental Protection ❖ Roll Call & Self-Introductions, ECOS Deputy Director Carolyn Hanson & ECOS members ❖ Update on ECOS Activities with the New Administration and Congress, ECOS Executive Director Don Welsh ❖ Agenda Preview, Patrick McDonnell
1:55 – 2:40 p.m. Eastern	**Keynote Presentation followed by Q&A: The Honorable Michael Regan, Administrator, U.S. EPA (invited pending confirmation), on Federal Priorities & Partnering with ECOS, moderated by ECOS President Patrick McDonnell, Secretary, Pennsylvania Department of Environmental Protection**

2:40 – 3:25 p.m. Eastern	**Roundtable & Open Discussion: Complex Challenges – Tackling PFAS, Harmful Algal Blooms, & 1,4-Dioxane** *This session will showcase the latest policy and research surrounding three contaminants presenting unique challenges for state and federal regulators– PFAS, Harmful Algal Blooms, and 1.4-Dioxane. Presenters will also offer insight on regulatory best practices and risk communication.* ❖ ECOS Cross-Media Committee Chair Richard Whitman, Director, Oregon Department of Environmental Quality (moderator) ❖ Jennifer Orme-Zavaleta, Acting Assistant Administrator, U.S. EPA Office of Research & Development ❖ Mitch Olson, PE, Environmental Engineer, Trihydro
3:25 – 3:40 p.m. Eastern	**Break**
3:40 – 4:20 p.m. Eastern	**Roundtable & Open Discussion: Advances in Air & Water Monitoring – Augmenting Data while Conserving Resources** *The past decade has seen significant advances in the development and use of environmental monitoring technology. Join speakers from states, U.S. EPA, and a technology firm as they explore innovative ways that low-cost sensors and monitors are being put to good use.* ❖ ECOS Region 5 Executive Committee Representative Liesl Eichler Clark, Director, Michigan Department of Environment, Great Lakes, & Energy (moderator) ❖ ECOS Cross-Media Chair Richard Whitman, Director, Oregon Department of Environmental Quality ❖ Meghan Smart, Lead Environmental Scientist and Citizen Science Coordinator, Arizona Department of Environmental Quality ❖ Tim Watkins, Director, Center for Environmental Measurement & Modeling, U.S. EPA Office of Research & Development ❖ Meena Sankaran, Founder & CEO, KETOS Inc.
4:20 – 4:45 p.m. Eastern	**Keynote Presentation followed by Q&A: ECOS Missouri Alum Sara Parker Pauley, Director, Missouri Department of Conservation, and President, American Fish & Wildlife Agencies, on Partnering with Your State Natural Resources or Conservation Agency and Navigating Change, moderated by ECOS Region 7 Executive Committee Representative Carol Comer, Director, Missouri Department of Natural Resources**

4:45 – 5:25 p.m. Eastern	**Roundtable & Open Discussion: New Directions for Inspections – Prioritizing Inspections via Predictive Analytics & Leveraging Remote Inspections to Assess Compliance** *The inspection job of many state environmental agencies has been enhanced through new predictive analytics tools that can prioritize inspections and remote technologies that are being further refined during the COVID pandemic. These recent advances are helping regulators to determine which facilities to visit and to more efficiently confirm that violations have been addressed.* ❖ ECOS Past President and E-Enterprise for the Environment Leadership Council Member Jim Macy, Director, Nebraska Department of Environment & Energy (moderator) ❖ ECOS Vice President and E-Enterprise for the Environment Leadership Council State Co-Chair Ben Grumbles, Secretary, Maryland Department of the Environment ❖ Daniel E. Ho, Professor of Law, Stanford University, Director, Regulation, Evaluation, & Governance Lab (RegLab), and Associate Director, Stanford Institute for Human-Centered Artificial Intelligence
5:25 – 5:30 p.m. Eastern	**Announcements & Wrap-up, ECOS President Patrick McDonnell, Secretary, Pennsylvania Department of Environmental Protection**
Wednesday, March 17 **Agency Management, Partnering with Congress, GHG Reduction, & Environmental Equity**	
12:00 – 1:00 p.m. Eastern	**Workshop Option #1: Podcasting to Promote Environmental Awareness, led by John Bernard, Host, *The New Bureaucrat* Podcast** *With podcasts an increasingly popular tool for news and entertainment, they are now making their way into the governmental realm. This discussion will offer tips on how state environmental agencies and other interested parties can use podcasting to spread their message and promote environmental awareness.*
12:00 – 1:00 p.m. Eastern	**Workshop Option #2: Thriving in the Virtual Environment, led by Laura Watson, Director, Washington State Department of Ecology** *Despite the indisputable negative impacts of the COVID crisis, the disruption also presents a chance for organizations to improve our pre-COVID habits and processes. This conversation will build on previous ECOS discussions of remote operations and explore opportunities to thrive, not just survive, in the post-COVID environment. It will also feature a presentation on Washington's Remote Inspections Workgroup.*

12:00 – 1:00 p.m. Eastern	**Workshop Option #3: Moving Ahead on ECOS Results, led by ECOS Secretary-Treasurer & Planning Committee Chair Myra Reece, Director of Environmental Affairs, South Carolina Department of Health & Environmental Control, and Partnership & Performance Workgroup ECOS Co-Chair Chair Elaine Boyd, Senior Advisor, Tennessee Department of Environment & Conservation** *ECOSResults.org is a state-led performance dashboard that highlights the outcomes of state efforts to protect human health and the environment. Now in their fourth year, the ECOS Results team is thinking ahead about how the site can evolve. This workshop will feature a review of the site and an open discussion on how members can further leverage the tool.*
1:00 – 1:10 p.m. Eastern	**Break**
1:10 – 1:15 p.m. Eastern	**Call to Order & Announcements, ECOS President Patrick McDonnell, Secretary, Pennsylvania Department of Environmental Protection**
1:15 – 2:00 p.m. Eastern	**Open Discussion: Best Practice Sharing – Boosting Agency Productivity to Get the Job Done, led by ECOS Waste Committee Chair Darsi Foss, Environmental Management Division Administrator, Wisconsin Department of Natural Resources** *State environmental agencies are leaders in implementing new approaches to promote more efficient and effective use of fiscal and staff resources. While ECOS spotlights state innovations at each Fall Meeting, this session will provide an open forum for states and our partners to share ways big and small in which we are working to boost productivity in the workplace.*
2:00 – 2:40 p.m. Eastern	**Roundtable & Open Discussion: Innovative Policy Approaches to Greenhouse Gas Reduction** *As climate moves to center stage at the federal level, states will continue to play a key role in driving reductions of greenhouse gas (GHG) emissions. Join this panel of state and federal policymakers as they explore strategies for GHG reduction in various sectors.* ❖ ECOS Air Committee Chair Sheila Holman, Assistant Secretary for the Environment, North Carolina Department of Environmental Quality (moderator) ❖ Janet Coit, Director, Rhode Island Department of Environmental Management ❖ Trisha Oeth, Acting Environmental Programs Policy Advisor, Colorado Department of Public Health & Environment ❖ The Honorable Gina McCarthy, White House National Climate Advisor (invited) ❖ Vicki Arroyo, Associate Administrator for Policy, U.S. EPA

2:40 – 3:20 p.m. Eastern	**Roundtable & Open Discussion: Groundbreaking Partnerships for Methane Reduction** *Many industries are pioneering voluntary approaches to reducing their carbon footprint. This session will provide an overview of some creative partnerships surrounding methane, including a record-setting carbon capture project involving livestock lagoons and a joint effort by the gas and utility industries to enhance reporting.* ❖ ECOS Air Committee Vice Chair and Region 6 Executive Committee Representative Jon Niermann, Chairman, Texas Commission on Environmental Quality (moderator) ❖ Mandy Tornabene, Vice President, Environmental Services, Dominion Energy ❖ Stewart Leeth, Chief Sustainability Officer, Smithfield ❖ Karen Obenshain, Senior Director, Fuels, Technology & Commercial Policy, Edison Electric Institute ❖ Pam Lacey, Chief Regulatory Counsel, American Gas Association
3:20 – 3:35 p.m. Eastern	**Break**
3:35 – 3:55 p.m. Eastern	**Keynote Presentation followed by Q&A: The Honorable South Carolina Representative Harold Mitchell, Jr., Founder, ReGenesis Project of Spartanburg, SC, on Community Revitalization & Collaborative Problem-Solving, moderated by ECOS Secretary-Treasurer & Planning Committee Chair Myra Reece, Director of Environmental Affairs, South Carolina Department of Health & Environmental Control**
3:55 – 4:35 p.m. Eastern	**Roundtable & Open Discussion: Environmental Equity – Getting to Know Our Communities & Recognize Disparities** *To ensure that all Americans have healthy environments in which to live, learn, and work, states are pursuing an array of initiatives to provide fair treatment in delivering favorable environmental outcomes. Hear from three states on their approaches, successes, and lessons learned.* ❖ ECOS President Patrick McDonnell, Secretary, Pennsylvania Department of Environmental Protection (moderator) ❖ Environmental Research Institute of the States President David Paylor, Director, Virginia Department of Environmental Quality ❖ Serena McIlwain, Undersecretary for Environmental Protection, California Environmental Protection Agency ❖ ECOS Secretary-Treasurer and Planning Committee Chair Myra Reece, Director of Environmental Affairs, South Carolina Department of Health & Environmental Control

4:35 – 5:00 p.m. Eastern	**Keynote Presentation followed by Q&A: The Honorable Tom Carper (D-DE), Chairman, Senate Environment & Public Works Committee, on Environmental Priorities for the 117th Congress, moderated by ECOS Vice President Ben Grumbles, Secretary, Maryland Department of the Environment**
5:00 – 5:15 p.m. Eastern	**Final Reflections, Announcements, & Wrap-up, ECOS President Patrick McDonnell, Secretary, Pennsylvania Department of Environmental Protection**

Message

From: Carbonell, Tomas [Carbonell.Tomas@epa.gov]
Sent: 3/5/2021 10:29:01 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]
Subject: RE: how are things looking re: reg agenda
Attachments: Reg agenda draft 3.5.2021.xlsx

Agreed. Btw, I am attaching here an Excel export of the current version of the draft reg agenda – found it much easier to work with than the Sharepoint site. Have a good weekend all –

Tomás

From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Friday, March 5, 2021 5:25 PM
To: Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Kim, Eun <Kim.Eun@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>
Subject: RE: how are things looking re: reg agenda

Noted. It's the least problematic of the three options – **Ex. 5 Deliberative Process (DP)**

Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency

From: Carbonell, Tomas <Carbonell.Tomas@epa.gov>
Sent: Friday, March 5, 2021 5:22 PM
To: Kim, Eun <Kim.Eun@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: RE: how are things looking re: reg agenda

Thanks Eunjung, just reviewed the BCA and SO2 designations items and think they look good. Also agree re withdrawing the CAA Science Transparency rule.

Ex. 5 Deliberative Process (DP)

Best,

Tomás

From: Kim, Eun <Kim.Eun@epa.gov>
Sent: Friday, March 5, 2021 2:54 PM
To: Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>; Carbonell, Tomas <Carbonell.Tomas@epa.gov>
Subject: RE: how are things looking re: reg agenda

Thanks Ale. Tomas if you're also good with the items, I will go ahead and send things through on Sharepoint.

Eunjung Kim
Special Assistant
Office of Air and Radiation
(202) 815-7252

From: Nunez, Alejandra <Nunez.Alejandra@epa.gov>
Sent: Friday, March 5, 2021 2:40 PM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Kim, Eun <Kim.Eun@epa.gov>
Subject: RE: how are things looking re: reg agenda

Following-up on this, Joe and I talked briefly. The Biogenic CO2 action should remain in the list.

From: Nunez, Alejandra
Sent: Friday, March 5, 2021 1:52 PM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Kim, Eun <Kim.Eun@epa.gov>
Subject: FW: how are things looking re: reg agenda

I reviewed the items John listed below and everything looks good to me. Tomas – can you also take a look and confirm? Thanks.

Ex. 5 Deliberative Process (DP)

Thanks.

From: Shoaff, John <Shoaff.John@epa.gov>
Sent: Friday, March 5, 2021 1:16 PM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Kim, Eun <Kim.Eun@epa.gov>
Cc: Campbell, Ann <Campbell.Ann@epa.gov>; Lubetsky, Jonathan <Lubetsky.Jonathan@epa.gov>; Farrar, Wanda <farrar.wanda@epa.gov>; Whitehurst, Shanika <whitehurst.shanika@epa.gov>
Subject: FW: how are things looking re: reg agenda

All,

Here's the latest-greatest re: the Spring Reg Agenda and with thanks to Jonathan, Wanda and Shanika for weathering system challenges in the midst of attempting to refine and finalize our inputs.

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Welcome your review and feedback on the above so we can submit to OP asap. Thank you!

John

JOHN SHOAFF (HE/HIM/HIS) | DIRECTOR
OFFICE OF AIR POLICY & PROGRAM SUPPORT (OAPPS)
OFFICE OF AIR & RADIATION | U.S. EPA | WJC NORTH 5442-C
1200 PENNSYLVANIA AVE. NW | MC 6103A | WASHINGTON, D.C. | 20460 | USA
Shoaff.john@epa.gov | **1-202-564-0531 DIRECT | 1-202-257-1755 MOBILE**

Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/16/2021 9:11:59 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]
Subject: FOR YOUR REVIEW: 100 day list for OA
Attachments: Administrator-Level Tracker Through May '21_OAR.xlsx

Joe, please find attached the 100 day list. I am still waiting for last approvals from Sarah but I wanted to share with you what I believe to be the (near) final draft for your review.

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

March 9, 2021

The Honorable Michael S. Regan
Administrator, U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W., Mail Code 1101A
Washington, DC 20460

Dear Administrator Regan:

On behalf of the board of the directors of the Edison Electric Institute, I invite you to make remarks during a special Friday afternoon dialogue with our board on Friday, March 26, at 5:00 p.m. EST. As you may know, EEI is the Washington-based association that represents all U.S. investor-owned electric companies, including Duke Energy and Dominion, who provide power for more than 220 million Americans in all 50 states.

We very much look forward to working with you in your new role as the EPA Administrator in President Biden's cabinet at a time when clean energy, climate and environmental justice issues will be center stage. EEI's member companies take their commitment to environmental stewardship very seriously. In fact, our member companies have been leading the nation's clean energy transformation, reducing their carbon emissions by 33 percent from 2005 levels by the end of 2019—a decade earlier than what was called for in the Paris Agreement. Yet, we also know that we have more work ahead of us, in combating climate change and on other environmental issues. I know our board members would be very eager to hear your own views about the Biden administration's vision surrounding the environmental landscape, particularly in light of your most recent post as a key state environmental policymaker in North Carolina.

We would be delighted to have you make remarks of perhaps 15-20 minutes, beginning at 5:00 pm, followed by Q&A with our board members. It will be a great opportunity for you to interact directly with the CEOs who lead our industry. We anticipate that approximately 50-55 CEOs would be joining the virtual session. Our board dialogues are invitation-only and are closed to the news media.

I thank you in advance for your consideration of this request, and please let me know of any questions you may have. I hope you are able to join us.

Sincerely,

Tom Kuhn

Message

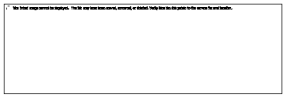
From: Miles Keogh [mkeogh@4cleanair.org]
Sent: 2/12/2021 7:20:01 PM
To: epa@lists.4cleanair.org
Subject: The Washington Update
Attachments: ATT00001.txt

EPA friends: y'all are an important part of our NACAA family, and we're happy to share our weekly Washington Update with you. This week's edition is below (it always come with a note from me but it doesn't usually focus on my amateur interest in entomology!) As new faces come aboard at EPA, or if you have longtime colleagues who may not have received this before, always feel free to forward it, or please let them know they're welcome to sign up for this once-a-week digest of all things clean air and climate by emailing NACAA's Member Services Manager, Monique Faye, at mfaye@4cleanair.org. Thanks for reading the Washington Update, thanks for being a part of our community, and thanks for everything you do.

Wishing you well, Miles

Miles E Keogh
NACAA
(571) 970-6795

From: Miles Keogh
Sent: Friday, February 12, 2021 2:10 PM
To: washington_update@lists.4cleanair.org; mjo@lists.4cleanair.org; members@lists.4cleanair.org
Subject: The Washington Update



Clean air friends,

I'm bracing for a million horrified replies, because today I'm making an unpopular case for the clumsy, noisy but lovable cicada. I know these insects make some people very uncomfortable with their fat green bodies, bulging (sometimes bright red) eyes, their see-through windowpane wings, and the chaotic symphony of noise they can make when they come together in huge numbers. We're expecting the famous "Brood X" event in May this year, which happens every seventeen years in the Mid-Atlantic. Around the same time that lilacs will bloom this spring, a few trillion (yes with a "t") of these big, harmless, bumbling bugs will emerge together to sing their hearts out, sprout wings, and find love. If you're in the area, I hope you'll see it not as an invasion, but as one of nature's great celebrations - It's the entomological equivalent of seeing Halley's Comet! Everyone deserves to feel joy (even lowly *magicicada*), and as we human beings begin to break the grip of this awful pandemic my wish is that we'll all get to spill out into the world together and feel that kind of ebullience soon.

Now *The Week In Review* in this week's *Washington Update*:

- D.C. Circuit Orders One National Program Rule (SAFE Vehicles Rule Part 1) Litigation Held in Abeyance
- NACAA Recommends that EPA Establish Certification Program for Aftermarket Catalysts
- Emissions from Fossil Fuel Combustion Responsible for Nearly One in Five Total Global Deaths in 2018
- EPA Pulls Back Recent PFAS-Related Toxicity Assessment Due to "Political Interference"
- D.C. Circuit Begins Granting Motions to Halt Cases While EPA Reviews Challenged Rules
- EPA Inspector General to Examine Grant Flexibilities Provided During COVID-19
- Ninth Circuit Declines to Rehear Kids' Climate Suit

- Environmental and Public Health Organizations Challenge EPA's Retention of 70-ppb Ozone NAAQS
- Researchers Find Rush Hour Levels of PM2.5 in Northeastern Subway Stations Higher than Outdoors
- EPW Advances Regan to Full Senate Floor Vote
- Oregon Senator Merkley to Chair Appropriations Subcommittee on Interior and Environment
- White House Convenes First Climate Task Force Meeting

We've also got events linked in *The Week Ahead*. Did you miss last week's Coffee Break webcast on tribal air agencies? We recorded it, and it's available for NACAA members on AirWeb! Next week, on Thursday February 18, NACAA's Board of Directors and Committee Chairs will gather on Zoom (if you're one of those folks, we're excited to see you.) Details on upcoming committee activities and NACAA events are always available on AirWeb.

Here's this week's *Washington Update*:
http://www.4cleanair.org/sites/default/files/Documents/WashingtonUpdate-2021-02-12.pdf

Hey, today kicks off the year of the Ox - "xin nian hao", as they say in China. Enjoy the Lunar New Year!

Until next week,

Wishing you well, Miles

Miles Keogh
Executive Director
National Association of Clean Air Agencies
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(571) 970-6795
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Message

From: Carbonell, Tomas [Carbonell.Tomas@epa.gov]
Sent: 2/25/2021 3:32:55 PM
To: Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Culligan, Kevin [Culligan.Kevin@epa.gov]
CC: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: FW: Letter from National Conference of State Legislatures - Greenhouse Gas Emission Regulations
Attachments: AirLetter_EPA_NCSL.pdf

FYI

From: Kristen Hildreth <Kristen.Hildreth@ncsl.org>
Sent: Friday, February 19, 2021 4:18 PM
To: Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: Letter from National Conference of State Legislatures - Greenhouse Gas Emission Regulations

Mr. Goffman and Mr. Carbonell,

I hope this email finds you both well – attached is a letter on behalf of the National Conference of State Legislatures, the bipartisan organization representing the legislatures of our nation's states, commonwealths, and territories, which outlines NCSL policy positions and guidelines should the agency choose to promulgate a new rule to reduce greenhouse gas emissions from stationary sources given the vacatur of the Affordable Clean Energy Rule.

We look forward to continuing a strong relationship with EPA and working together as the agency moves forward on future greenhouse gas emission regulations.

Best,

Kristen Hildreth
National Conference of State Legislatures
Sr. Policy Specialist, Natural Resources and Infrastructure
202.624.3597 (o) | **703.405.3700 (m)**

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NCSL
NATIONAL CONFERENCE OF STATE LEGISLATURES
Strong States, Strong Nation

Robin Vos
Assembly Speaker
Wisconsin
President, NCSL

Martha R. Wigton
Director
House Budget & Research Office
Georgia
Staff Chair, NCSL

Tim Storey
Executive Director

February 19, 2021

Joseph Goffman
Acting Assistant Administrator, Office of Air and Radiation
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Tomás Carbonell
Deputy Assistant Administrator for Stationary Sources, Office of Air and Radiation
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

RE: Future Greenhouse Gas Emission Regulations

Dear Mr.Goffman and Mr. Carbonell,

On behalf of the National Conference of State Legislatures (NCSL), the bipartisan organization representing the legislatures of our nation's states, commonwealths, and territories, we want to congratulate you on joining the Environmental Protection Agency's Office of Air and Radiation and look forward to working with you to protect natural resources and combat environmental degradation and pollution in the upcoming months, and years to come. Following the U.S. Court of Appeals for the D.C. Circuit's recent ruling on the Affordable Clean Energy Rule (ACE) which vacated and remanded the rule back to the Environmental Protection Agency (EPA) to consider a new regulatory action, we wanted to update you, and the agency, on NCSL's policy positions and guidelines should the agency choose to promulgate a new rule to reduce greenhouse gas emissions from stationary sources.

Most importantly, should EPA choose to regulate greenhouse gas emissions from existing electric utility generating units, we are hopeful it will be done so with extensive consultation with state and local officials and their national representative organizations. Flexibility in federal action and maintenance of existing state authorities is key—any regulation must allow for a range of complementary strategies and maintain a strong role for state, local and tribal governments. States must be provided the authority and maximum levels of flexibility to work within an overall framework and ensure achievement of any prescribed goals in the most effective, timely and efficient manner.

Equally as important is the need to ensure that state and local governments not be preempted from enacting policy options that differ from federal choices, or likewise, from enacting stricter

or stronger measures within their jurisdiction. In preserving state authority and flexibility, the federal government should also avoid further cost-shifts to states—should a mandate be imposed, it must be accompanied by funding for states to use in a manner which they deem appropriate.

Any action to regulate greenhouse gas emissions must be designed to balance competing criteria such as equity, economic efficiency and ease of administration while also considering the implications of actions, or inactions, on economic development, energy security and vulnerable populations.

It is NCSL's policy that the design components of federal regulations must consider:

- The inclusion of goals—short, medium, and long term—as well as a rigorous oversight program that will provide for ongoing study and analysis of the system.
- Provisions for transparent reporting and accountability and incorporate third-party verification to ensure reported outcomes are verifiable.
- The adoption of a system of performance audits and objectively quantifiable benchmarks that allow the federal government to certify state performance results in meeting set minimum standards.
- Uncertainties that are hampering investment in generation, transmission, and distribution and enhance the likelihood that appropriate technologies will be developed in order to achieve desired reductions in GHG emissions in the most economical way possible.
- Potential adaptation issues and provide necessary accommodations for them.
- Should a national program include the auctioning of allowances, the allocation of emissions allowances at no cost can serve as an appropriate transition measure necessary to ensure continued reliability, minimize economic dislocation resulting from the carbon intensity of the existing infrastructure, and allow for development and deployment of needed new technologies and measures to reduce emissions.

Additionally, if the federal government is to act to reduce GHG emissions, appropriate funding must be authorized and appropriated to spur expanded research and development—a task EPA cannot accomplish on its own but can work with its congressional counterparts to obtain. Regulation should not limit the diversity of technologies supported to reach reduction targets as technological advancements cannot be predicted, and state and regional differences must be accounted for to ensure enough flexibility in achieving prescribed national goals.

Further, cost-benefit analysis should be performed as part of any environmental decision making. Sound public policy decision making demands that benefits be proportionate to costs, after factoring in the totality of the circumstances. However, cost-benefit analysis should not be the only determinative factor, but one of many tools that inform decision makers in any environmental decision-making process. In the face of uncertainty in devising analytical methods, any default assumptions that are employed should favor enhanced environmental protection.

NCSL looks forward to continuing a strong relationship with EPA and looks forward to working with the agency as regulations are reviewed and revised, and new ones promulgated. A copy of

NCSL's Climate Change Resolution and Environmental Federalism Directive are attached, but if you have any questions, please do not hesitate to contact NCSL staff Kristen Hildreth (202-624-3597 or kristen.hildreth@ncsl.org).

Sincerely,

Representative Stephen Handy
NCSL Natural Resources and Infrastructure
Committee Co-Chair
Utah House of Representatives

Representative David Tarnas
NCSL Natural Resources and Infrastructure
Committee Co-Chair
Hawaii House of Representatives

COMMITTEE: **NATURAL RESOURCES AND INFRASTRUCTURE**

POLICY: **ENVIRONMENTAL FEDERALISM**

TYPE: **DIRECTIVE**

The National Conference of State Legislatures (NCSL) urges the federal government to renew its commitment to the state-federal partnership for environmental protection.

State governments, acting in partnership with the federal government, play an indispensable role in our mutual effort to protect natural resources and combat environmental degradation and pollution. State implementation of federal law is the cornerstone of our current system of environmental protection. States are particularly dependent upon federal pollution control laws to address the interstate migration and effects of pollutants. Given the increasing trend of delegating more authority to the states, it is essential that the federal government not abandon its commitment to uniform minimum federal standards, the state-federal partnership and the very laws and agencies that guarantee the success of our partnership.

In furtherance of the above, the following principles should guide NCSL's federal lobbying efforts with respect to the state-federal environmental partnership:

- NCSL supports the prevention of pollution at its source and believes that federal legislation and regulation, through delegated authority to the states, should encourage the implementation of activities designed to minimize the generation of hazardous pollution by regulated entities.
- NCSL further supports federal funding of pollution prevention research and development, training, technical assistance, and regulatory guidance for states.
- The present level of commitment and funding for natural resource and environmental protection efforts should be enhanced; specifically, the federal government should prevent efforts to further erode its commitment to provide technical support, research and financial assistance to states and avoid further cost shifts to the states.

- The federal government should provide funding to the states in the form of block grants that provide for maximum state flexibility to use federal monies in the manner which they deem proper and in a manner which is consistent with their intended purpose.
- Environmental protection should be based on a holistic comprehensive, flexible and integrated program that addresses environmental issues, the nation's broader economic prosperity, and policies that ensure long-term energy affordability & reliability.
- Uniform minimum federal standards for environmental protection should be preserved and strengthened.
- Statutory authority for states to enact state environmental standards that are more stringent than their minimum federal counterparts should be maintained and renewed.
- Within the framework of uniform minimum federal standards, states should have maximum flexibility in devising approaches and methods for obtaining compliance with such standards. The federal government should adopt performance-based standards which prescribe the end to be accomplished and leave the means of obtaining the end up to individual states. In return for this new level of autonomy, the federal government should adopt a system of performance audits and objectively quantifiable benchmarks that would allow the federal government to certify state performance results in meeting uniform minimum federal standards.
- Implementation schedules established under the framework of uniform minimal federal standards should ensure that the time to deploy emissions control technology reflects normal construction industry experience, technology availability and practices that maximize order and efficiency to avoid wasteful financial expenditures and any risks to energy reliability.
- Within this framework, states should have the flexibility to work with utilities to coordinate the closure and retrofitting of existing power generation stations in a manner that will ensure the continued supply of electricity and that will allow power generators to upgrade their facilities in a manner that provides reasonable

cost while attaining environmental compliance. State flexibility should allow for regulatory options for units that are necessary for grid reliability, that commit to retire or repower and establishing interim progress standards that ensure generation units meet EPA regulations in an orderly, cost-effective manner.

- There should be consistent, uniform and vigorous federal enforcement of environmental laws to deter non-compliant behavior and to reward those who are acting in compliance with such laws. The federal government should continue its present role of overseeing the efficacy of state efforts to enforce uniform minimal federal environmental protection standards.
- In light of the Supreme Court rulings in Seminole Tribe of Florida v. Florida and Alden v. Maine, which suggest that citizens will no longer be able to sue states in federal court for violations of federal environmental protection laws, the federal government needs to allocate adequate resources to ensure compliance among the states.
- Cost-benefit analysis should be performed in environmental decision making. Sound public policy decision making demands that benefits should be proportionate to costs, after factoring in the totality of the circumstances. However, cost-benefit analysis should not be the only determinative factor in any environmental decision making process. Rather, such an analysis should be one of the many tools that inform decision makers in formulating sound public policy. In the face of uncertainty in devising analytical methods, any default assumptions that are employed should favor enhanced environmental protection.
- In order to finance environmental protection efforts, Congress should create funding mechanisms that consistently generate revenue solely for such uses. All monies from such funds should be fully appropriated for their intended uses.
- NCSL supports a citizen's right to access public information. NCSL supports "right-to-know" laws and other statutory and regulatory mechanisms that readily provide public access to public information while acknowledging the need to balance this right with security concerns relating to the distribution of sensitive material such as water security information regarding water infrastructure and sources of supply.

- NCSL supports the preservation of state authority to enforce chemical security standards that are more stringent than those established by the federal government.
- NCSL opposes any attempt to preempt or circumvent the authority of state courts and local administrative bodies. Proposed federal legislation that would centralize decision-making in the Federal courts for compensation for land use and other regulatory actions represents a major threat to our Constitutional system of federalism. Improving the efficiency of the state and local judicial process is an issue for state legislatures, not Congress. Land use and regulatory policy must remain a primary responsibility of the states. The authority of state courts must be preserved.
- NCSL opposes federal trade agreements containing mechanisms that undermine state environmental laws and regulations -- or that usurp state authority to set and maintain environmental policy and investments in the public interest -- including tactics such as "regulatory cooperation entities," "harmonization," "mutual recognition," "international standardization," "reducing trade irritants" or other means by which the Constitutional powers or decisions of the states could be directly or indirectly overridden, modified or preempted.
- In acknowledgement of the unique needs and concerns of the arctic ecosystem that is undergoing rapid environmental change and extensive exploration for natural resources, NCSL urges ratification of the United Nations (UN) Convention on the Law of the Sea, negotiated in 1982, and of the Treaty on Persistent Organic Pollutants, adopted by the U.S. in 2001 but never ratified.
- NCSL believes federal environmental health regulations require more and better data about the unique exposure patterns and sensitivities of children who are uniquely vulnerable to environmental exposures because they are in a dynamic state of growth, with many vital systems not fully developed upon birth.
- NCSL supports consideration of the sensitivity of children to environmental contamination in all federal environmental policy, legislation, and regulation.

- NCSL supports federal funding for health research on the effects of exposure of children to environmental toxicants, and consistent reporting and tracking of birth defects, cancer, and other relevant diseases in children.

COMMITTEE: **NATURAL RESOURCES AND INFRASTRUCTURE**

POLICY: CLIMATE CHANGE

TYPE: **RESOLUTION**

The National Conference of State Legislatures (NCSL) urges the federal government to consult with state elected officials, their national representative organizations and existing interstate partnerships in developing a federal program. As Congress and the administration examine proposals for reducing greenhouse gas emissions, NCSL encourages the federal government to always take the following principles into account:

- Federal action should be flexible, allowing for a range of complementary strategies at the state and federal level maintaining a strong role for state, local and tribal government in any federal action.
- Federal legislation should provide states the authority and flexibility to work within an overall framework; to apply the law effectively to all sources of emissions and ensure achievement of climate change goals in the most cost effective, timely and efficient manner for each state.
- Federal legislation should not preempt state or local governments from enacting policy options that differ from federal choices or from enacting stricter or stronger measures within their jurisdiction.
- Federal legislation should afford states the flexibility to form regional cooperatives and implement innovative policies that advance federal efforts to reduce the effects of climate change.
- Congress must authorize and appropriate sufficient funds for federal, state and local governments to implement any federal legislation. These funds should be newly authorized appropriations, not reprogrammed resources.
- Federal legislation should ensure state legislative authority in any federal climate change legislation and affirm the active role played by state legislatures in both fiscal and substantive aspects of state policymaking.

- Federal legislation providing for the allocation of greenhouse gas reduction programs to states should include language making decisions related to such allowances subject to state legislative approval.

NCSL urges the federal government, should it choose to act on this issue, to take into account the following principles regarding program design components:

- Any national system must include short, medium and long-term goals and incorporate a rigorous oversight program that provide for ongoing study and analysis of the system to ensure it is achieving intended goals.
- A new national program should serve to address uncertainties that are hampering investment in generation, transmission and distribution and enhance the likelihood that appropriate technologies will be developed, and other solutions implemented so as to achieve the desired reductions in greenhouse gas (GHG) emissions in the most economical manner possible.
- Federal legislation should be designed appropriately to balance competing criteria, including, but not limited to, equity, economic efficiency and ease of administration.
- Revenue derived from a greenhouse gas reduction program should be directed to complementary policies focused on mitigating climate change consumer costs including but not limited to energy research & development, weatherization, conservation and energy efficiency activities.
- A national program to reduce GHG emissions must also address adaptation issues.
- Auctioning of allowances may be the most economically efficient mechanism for achieving a GHG emissions reductions goal. However, the allocation of emissions allowances at no cost can serve as an appropriate transition measure necessary to ensure continued reliability, minimize economic dislocation resulting from the carbon intensity of the existing infrastructure, and allow for development and deployment of needed new technologies and measures to reduce emissions.

- Priority distribution of allowances at no cost should be to those entities in affected sectors where existing regulatory structure provides the necessary oversight to ensure that the value of such allowances is accounted for in establishing price rates for consumers.
- The allocation of GHG reduction program to states under a federal GHG reduction program should include language making decisions related to such allowances subject to state legislative approval.
- The establishment of any new federal program should include provisions for transparent reporting and accountability and incorporate the use of third-party verification to ensure reported outcomes are verifiable.

Unintended Consequences

NCSL believes that federal legislation regarding the reduction of greenhouse gases should take into account the implications of actions and/or inactions on economic development, energy security, and those most vulnerable citizens. Evaluation should include the life cycle impacts of policy options including ancillary impacts.

NCSL believes that federal legislation should require continuing assessments of the potential impacts to the United States of climate change, by state or region including effects on water resources, agriculture, infrastructure, natural systems, environmental quality, public health, biodiversity and the cultures of our native peoples. Such an assessment will support the development of domestic and international adaptation-mitigation strategies. The Environmental Protection Agency (EPA) should provide funding and assist states in developing assessments and adaptation plans at the state and regional level.

NCSL also urges the federal government to fully consider how legislation will affect low-income households that already struggle to balance needs and expenses. NCSL encourages the federal government to expand and enhance long-term funding for the Department of Energy's Weatherization Assistance Program and to ensure that any new

federal program does not undermine existing federal, state and private sector energy assistance and outreach programs that assist our most vulnerable citizens.

Research and Development

NCSL strongly urges the federal government to authorize and appropriate funding and provide other incentives to spur expanded research and development (R&D), as well as advance the demonstration and deployment of new and existing technologies to improve energy efficiency, advance mitigation strategies and reduce GHG emissions.

NCSL urges the federal government:

- To ensure that legislation not limit the diversity of technologies supported, as future advancements cannot be predicted.
- To take into account state and regional differences, and not limit or specify the technologies used in each state and ensure sufficient flexibility for each State to determine how to best achieve nationally-set goals.
- To promote current and future innovations and expand the use of such technology through R&D transfer agreements with other countries.
- To promote policies and procedures to increase natural carbon sequestration of CO2 that will include sustainable timber harvesting, control burns, reseeding and rehabilitation of natural and introduced grassland plants.

Message

From: Millett, John [Millett.John@epa.gov]
Sent: 2/9/2021 10:34:39 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]
CC: DeLuca, Isabel [DeLuca.Isabel@epa.gov]; Stevens, Katherine [stevens.katherine@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]
Subject: REVIEW: 2020 Power Plant Emissions comms
Attachments: PowerSectorAnnual Emissions_Communications Plan DRAFT 020921.docx; 2020 Emissions Data Fact Sheet Feb 9.pdf; 2020 Power Plant Emissions Press Release DRAFT v3_clean.docx

Hi All – Presenting the materials supporting the 2020 power sector data and analysis posting by the Clean Air Markets Division for your review and awareness. No pressing or firm deadline for this one. We'll be looking to tee this up for announcement with OPA for later this week or early next, and CAMD will time their posting of the data with the announcement. We're expecting it to be fairly newsworthy because there has been curiosity to see how the pandemic response affected electricity demand and emissions. The quick answer is that there was a small dip in demand from March~June, but that overall trends toward cleaner generation of the past several years continued in 2020. Thanks to Kati, Isabel and the CAMD team for a good set of materials.

Thanks –

John

Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/2/2021 9:06:42 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Democrats issue updated EPW, Energy committee rosters

Democrats issue updated EPW, Energy committee rosters

By Anthony Adragna

02/02/2021 04:05 PM EST

Senate Majority Leader Chuck Schumer on Tuesday announced the Democratic composition of committees, revealing the full slate of lawmakers who will shape environmental and energy policy this Congress.

Joining the Environment and Public Works Committee are Sens. Debbie Stabenow (Mich.), Alex Padilla (Calif.) and Mark Kelly (Ariz.), while Sens. Kirsten Gillibrand (N.Y.), Cory Booker (N.J.) and Chris Van Hollen (Md.) will depart the panel.

Sens. John Hickenlooper (Colo.) and Kelly will join the Energy and Natural Resources Committee, while Stabenow will depart.

Sen. Martin Heinrich (N.M.) will join the powerful Appropriations Committee.

Kelly, who cited observed climate change from his time in space as part of his motivation for running, now has a key spot on both committees largely responsible for shaping that policy. Padilla's role at EPW will give sway over thorny water policy issues in California.

Burgess Everett contributed to this report.

To view online:
https://subscriber.politicopro.com/energy/whiteboard/2021/02/democrats-issue-updated-epw-energy-committee-rosters-3986770

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1000 Wilson Blvd.
Arlington, VA 22209
USA

Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 3/1/2021 7:02:12 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: FOR YOUR SIGNATURE: Final Response to Xavier Becerra, AG for CA -- AX-21-000-1948
Attachments: 21-000-1948.pdf; Final Response to Xavier Becerra, AG for CA - AX-21-000-1948.docx

Joe, the attached word document is ready for your review and signature. The attached uses the same language as found in the other 2 responses you signed regarding petitions for reconsideration of the PM NAAQS.

Thank you,

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

From: Hamilton, Sabrina <Hamilton.Sabrina@epa.gov>
Sent: Friday, February 26, 2021 11:03 AM
To: Campbell, Ann <Campbell.Ann@epa.gov>
Subject: FOR CONCURRENCE & SIGANTURE: Final Response to Xavier Becerra, AG for CA -- AX-21-000-1948

Good Morning Ann!

The attached response is ready for Joe's signature. Please let me know who I should copy of documents ready for the AAA signature or concurrence. Thanks

Sabrina

From: Carroll, Maria <carroll.maria@epa.gov>
Sent: Friday, February 26, 2021 10:26 AM
To: Hamilton, Sabrina <Hamilton.Sabrina@epa.gov>
Subject: AX-21-000-1948

Sabrina:

Attached is OAQPS concurrence for the above control. Thanks

Maria

Maria A. Carroll
Correspondence Specialist
Office of Air and Radiation – Correspondence Unit
U.S. Environmental Protection Agency (EPA)

1200 Pennsylvania Avenue, N.W. (6101-A)
Washington, DC 20460
Tel: (202) 564-7417
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carroll.maria@epa.gov

Be the change you want to see in the world. Show others how it is done. Be a leader in change. It starts with each of us.

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Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/2/2021 12:59:28 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: FOR YOUR SIGNATURE: Landfills Letters
Attachments: Landfill Letter to Environmental Defense Fund - Ms Rachel Fullmer and Peter Zalzal.docx; Landfill Letter to the State of Maryland - Mr Joshua M Segal Special Assistant Attorney General.docx; Landfill Letter to New Jersey Divsion of Law - Ms Lisa J Morelli.docx; Landfills Letter to Donahue Goldberg Weaver Littleton - Ms Susannah L Weaver and Mr. Matthew Littleton.docx; Landfill Letter to the State of Rhode Island - Mr. Gregory S Schultz.docx; Landfill Letter to State of Oregon - Mr. Paul Garrahan and Steve Novick - Oregon Department of Justic.docx; Landfills Letter to the State of Vermont - Mr Nicholas Persampieri.docx; Landfills Letter to State of Pennsylvania - Ms Ann R Johnston.docx; Landfills Letter to State of New Mexico - Mr Bill Grantham.docx

Joe, the attached are ready for your signature. I will call you on Teams to walk you through the process.

Thank you,

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

February 1, 2021

OFFICE OF
AIR AND RADIATION

Ms. Rachel Fullmer
Mr. Peter Zalzal
Environmental Defense Fund
2060 Broadway, Suite 300
Boulder, Colorado 80302
[HYPERLINK "mailto:rfullmer@edf.org"]

RE: *Environmental Defense Fund v. EPA, Case No. 19-1222 (and consolidated Case No. 19-1227)*

Dear Counsel:

Since the above-referenced case was briefed, certain significant intervening events have occurred relevant to the subject matter of this case and the underlying rulemaking at issue. In particular, on January 20, 2021, President Biden issued an Executive Order entitled "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis" that directs EPA to review certain agency regulations that may affect health and the environment. In a list of agency actions accompanying the Executive Order, the President specifically identified the rule at issue in this case as falling within the scope of the Executive Order. Moreover, the United States Court of Appeals issued an opinion in *American Lung Ass'n, et al. v. EPA*, Case No. 19-1140 (D.C. Cir. Jan. 19, 2021), partially vacating the general implementing regulations for Clean Air Act Section 111(d).

We are continuing to evaluate the impact of these events on the regulation at issue in this case. While that evaluation continues, EPA does wish to communicate at this time that, with respect to states that do not have an approved state plan for 2016 Municipal Solid Waste Landfills Emission Guidelines, the Agency intends to take final action on its proposed federal plan, 84 Fed. Reg. 43,745 (Aug. 22, 2019), by May 2021.

Sincerely,

Joseph Goffman
Acting Assistant Administrator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

February 1, 2021

OFFICE OF
AIR AND RADIATION

Mr. Joshua M. Segal
Special Assistant Attorney General
200 St. Paul Place
Baltimore, Maryland 21202
[HYPERLINK "mailto:jsegal@oag.state.md.us"]

RE: *Environmental Defense Fund v. EPA, Case No. 19-1222 (and consolidated Case No. 19-1227)*

Dear Counsel:

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Sincerely,

Joseph Goffman
Acting Assistant Administrator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

February 1, 2021

OFFICE OF
AIR AND RADIATION

Ms. Lisa J. Morelli
Deputy Attorney General
New Jersey Division of Law
25 Market Street
Trenton, New Jersey 08625
[HYPERLINK "mailto:Lisa.morelli@law.njoag.gov"]

RE: *Environmental Defense Fund v. EPA, Case No. 19-1222 (and consolidated Case No. 19-1227)*

Dear Counsel:

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Sincerely,

Joseph Goffman
Acting Assistant Administrator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

February 1, 2021

OFFICE OF
AIR AND RADIATION

Ms. Susannah L. Weaver
Mr. Matthew Littleton
Donahue, Goldberg, Weaver & Littleton
1008 Pennsylvania Avenue SE
Washington, DC 20003
[HYPERLINK "mailto:susannah@donahuegoldberg.com"]

RE: *Environmental Defense Fund v. EPA, Case No. 19-1222 (and consolidated Case No. 19-1227)*

Dear Counsel:

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Sincerely,

Joseph Goffman
Acting Assistant Administrator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

February 1, 2021

OFFICE OF
AIR AND RADIATION

Mr. Gregory S. Schultz
Special Assistant Attorney General
Rhode Island
Office of Attorney General
150 South Main Street
Providence, Rhode Island 02903
[HYPERLINK "mailto:gschultz@riag.ri.gov"]

RE: *Environmental Defense Fund v. EPA, Case No. 19-1222 (and consolidated Case No. 19-1227)*

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Sincerely,

Joseph Goffman
Acting Assistant Administrator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

February 1, 2021

OFFICE OF
AIR AND RADIATION

Mr. Paul Garrahan, Attorney-in-charge
Mr. Steve Novick, Special Assistant Attorney General
Natural Resources Section
Oregon Department of Justice
1162 Court Street, N.E.
Salem, Oregon 97301-4096
[HYPERLINK "mailto:paul.garrahan@doj.state.or.us"]
[HYPERLINK "mailto:steve.novick@doj.state.or.us"]

RE: *Environmental Defense Fund v. EPA, Case No. 19-1222 (and consolidated Case No. 19-1227)*

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Sincerely,

Joseph Goffman
Acting Assistant Administrator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

February 1, 2021

OFFICE OF
AIR AND RADIATION

Mr. Nicholas F. Persampieri
Assistant Attorney General
Office of the Vermont Attorney General
109 State Street
Montpelier, Vermont 05609
[HYPERLINK "mailto:nick.persampieri@vermont.gov"]

RE: *Environmental Defense Fund v. EPA, Case No. 19-1222 (and consolidated Case No. 19-1227)*

Dear Counsel:

Since the above-referenced case was briefed, certain significant intervening events have occurred relevant to the subject matter of this case and the underlying rulemaking at issue. In particular, on January 20, 2021, President Biden issued an Executive Order entitled "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis" that directs EPA to review certain agency regulations that may affect health and the environment. In a list of agency actions accompanying the Executive Order, the President specifically identified the rule at issue in this case as falling within the scope of the Executive Order. Moreover, the United States Court of Appeals issued an opinion in *American Lung Ass'n, et al. v. EPA*, Case No. 19-1140 (D.C. Cir. Jan. 19, 2021), partially vacating the general implementing regulations for Clean Air Act Section 111(d).

We are continuing to evaluate the impact of these events on the regulation at issue in this case. While that evaluation continues, EPA does wish to communicate at this time that, with respect to states that do not have an approved state plan for 2016 Muncipal Solid Waste Landfills Emission Guidelines, the Agency intends to take final action on its proposed federal plan, 84 Fed. Reg. 43,745 (Aug. 22, 2019), by May 2021.

Sincerely,

Joseph Goffman
Acting Assistant Administrator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

February 1, 2021

OFFICE OF
AIR AND RADIATION

Ms. Ann R. Johnston
Senior Deputy Attorney General
Pennsylvania Office of Attorney General
Strawberry Square
Harrisburg, Pennsylvania 17120
[HYPERLINK "mailto:ajohnston@attorneygeneral.gov"]

RE: *Environmental Defense Fund v. EPA, Case No. 19-1222 (and consolidated Case No. 19-1227)*

Dear Counsel:

Since the above-referenced case was briefed, certain significant intervening events have occurred relevant to the subject matter of this case and the underlying rulemaking at issue. In particular, on January 20, 2021, President Biden issued an Executive Order entitled "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis" that directs EPA to review certain agency regulations that may affect health and the environment. In a list of agency actions accompanying the Executive Order, the President specifically identified the rule at issue in this case as falling within the scope of the Executive Order. Moreover, the United States Court of Appeals issued an opinion in *American Lung Ass'n, et al. v. EPA*, Case No. 19-1140 (D.C. Cir. Jan. 19, 2021), partially vacating the general implementing regulations for Clean Air Act Section 111(d).

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Sincerely,

Joseph Goffman
Acting Assistant Administrator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

February 1, 2021

OFFICE OF
AIR AND RADIATION

Mr. Bill Grantham
Assistant Attorney General
201 Third Street NW, Suite 300
Albuquerque, New Mexico 87102
[HYPERLINK "mailto:wgrantham@nmag.gov"]

RE: *Environmental Defense Fund v. EPA, Case No. 19-1222 (and consolidated Case No. 19-1227)*

Dear Counsel:

Since the above-referenced case was briefed, certain significant intervening events have occurred relevant to the subject matter of this case and the underlying rulemaking at issue. In particular, on January 20, 2021, President Biden issued an Executive Order entitled "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis" that directs EPA to review certain agency regulations that may affect health and the environment. In a list of agency actions accompanying the Executive Order, the President specifically identified the rule at issue in this case as falling within the scope of the Executive Order. Moreover, the United States Court of Appeals issued an opinion in *American Lung Ass'n, et al. v. EPA*, Case No. 19-1140 (D.C. Cir. Jan. 19, 2021), partially vacating the general implementing regulations for Clean Air Act Section 111(d).

We are continuing to evaluate the impact of these events on the regulation at issue in this case. While that evaluation continues, EPA does wish to communicate at this time that, with respect to states that do not have an approved state plan for 2016 Municipal Solid Waste Landfills Emission Guidelines, the Agency intends to take final action on its proposed federal plan, 84 Fed. Reg. 43,745 (Aug. 22, 2019), by May 2021.

Sincerely,

Joseph Goffman
Acting Assistant Administrator

Message

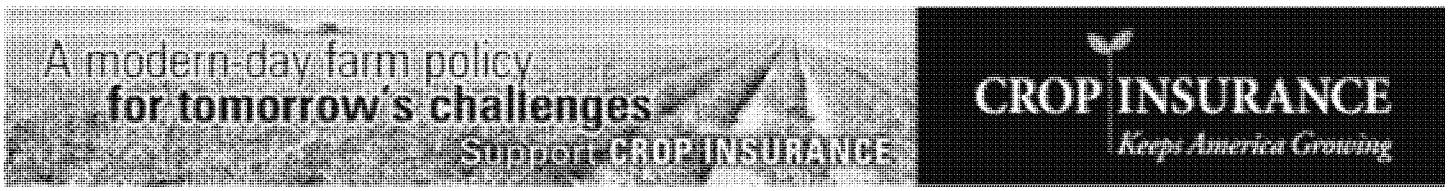
From: Agri-Pulse Daily Harvest [sara@agri-pulse.com]
Sent: 2/16/2021 11:11:37 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Agri-Pulse Daily Harvest 2/16/2021

Agri-Pulse Daily Harvest 2/16/2021

Agri-Pulse Daily Harvest

Agri-Pulse Daily Harvest -- 2/16/2021

Here's your daily summary of top news from www.Agri-Pulse.com and regional headlines from across the country. Do you know someone who should also be on our list? Please ask them to click here.



FARM & RURAL POLICY

Agri-Pulse: Daybreak for February 16, 2021

Link - (Audio) Senate sets Vilsack vote; Farm wages up 6%; Baldwin takes reins on Ag Approps.

Agri-Pulse: DriveTime: February 12, 2021

Link - (Audio) A House Agriculture Committee Republican and Democrat list priorities for this Congress and extreme cold threatens livestock and winter wheat fields.

Agri-Pulse: Open Mic: Farm Bureau President Zippy Duvall

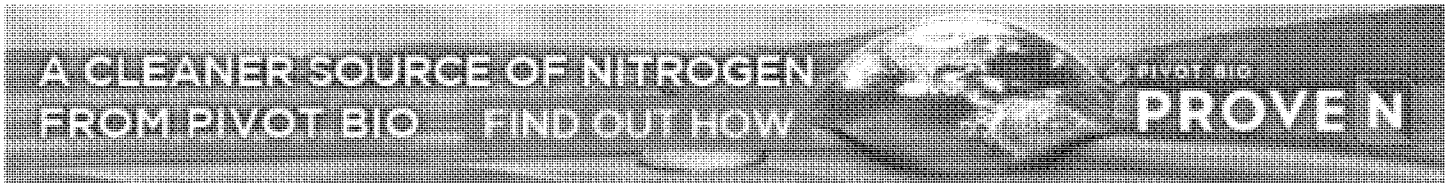
Link - (Audio) This week's Open Mic Guest is Zippy Duvall, president of the American Farm Bureau Federation. The Georgia farmer spent time at a socially distanced county president's conference in Kentucky last week. On the sidelines of the event, Duvall shared his thoughts on the pending debate about climate policy and agriculture's efforts in sustainability. Duvall reflects on conversations with Ag Secretary Nominee Tom Vilsack and EPA Administrator Nominee Michael Regan. Duvall is hopeful the Biden trade team will work diligently to keep trade flowing with China, consider joining the other nations of the CPTPP and find a meaningful trade deal with the U.K. He remains adamant that Washington find a solution to the ag labor crisis and is hopeful a solution could come with this Congress and administration.

Agri-Pulse: Agri-Pulse webinar: Top rural issues in the new Congress
Link - Agri-Pulse's Spencer Chase moderates a discussion between Reps. Dusty Johnson, R-S.D., and Abigail Spanberger, D-Va., and Kip Eideberg with the Association of Equipment Manufacturers about the biggest ag and food policy topics Capitol Hill will address in the 117th Congress.

Forbes: Disadvantaged Farmers At Center Of House Committee Ag Relief Bill
Link - The $1.9 trillion relief package making its way through the House of Representatives has approximately $16.1 billion earmarked for agriculture and the two centerpieces of the bill include $12 billion for food-aid benefits and a landmark $4 billion program of debt relief for socially disadvantaged farmers.

WUWM: Gov. Evers' Budget Proposes Millions Toward Wisconsin
Link - Gov. Tony Evers recently announced that he wants to invest more than $43 million in his biennial budget in Wisconsin's agricultural economy.

MyChesCo: PA Agriculture Secretary: Proposed Third Round of PA Farm Bill Funding Will Further Strengthen Resiliency of Agriculture
Link - Agriculture Secretary Russell Redding is commending Governor Tom Wolf for proposing to fund the Pennsylvania Farm Bill to continue strengthening the resiliency of the industry so many rely on for life's essential needs.



ENERGY

Lincoln Journal Star: 'A dump for seed corn companies' — Mead residents worry what comes next for troubled ethanol plant

Link - year after state regulators ordered AltEn Ethanol to stop selling its pesticide-contaminated soil conditioner to local farmers, the Mead ethanol plant remained the final destination for millions of pounds of treated seed in North America.

Des Moines Register: Farm interests, fuel retailers battle over Gov. Kim Reynolds' plan to require higher ethanol, biofuel blends

Link - Some powerful industries have begun battling over Gov. Kim Reynolds' proposal to set a renewable fuel standard in Iowa, a move that would require retailers to offer motor fuel with higher levels of ethanol and biodiesel.

Herald-Mail Media: Sunpro Solar Brings Affordable Solar Power and Jobs to Iowa

Link - Driven by strong customer demand, Sunpro Solar will offer clean energy, job growth and affordable solar power in Iowa.

The Dallas Morning News: Frozen wind turbines, soaring spot electricity prices: How the Artic freeze is roiling Texas' energy market

Link - The extreme cold appears to have caught Texas's highly decentralized electricity market by surprise.

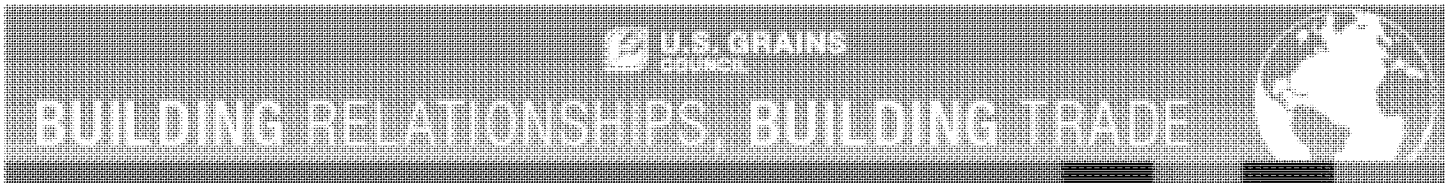
Nevada Appeal: Sales surge for Northern Nevada solar companies

Link - Simple Power Solar President Mark Dickson said his company has seen increased demand for residential solar panel installations, such as this project it completed in Truckee last August.

CBS San Francisco: San Francisco Assemblyman's Bill Boosts Building Wind Farms Off

California Coast

Link - California Assemblymember David Chiu introduced a bill to the legislature on Thursday intending to shift the state's energy sources to rely more on offshore wind power.



FOOD & NUTRITION

Eater Los Angeles: LA County Restaurant Workers Prioritized For Vaccines, Can Receive Within Weeks

Link - As essential workers within food and agriculture, restaurant employees could begin receiving first doses in two to three weeks.

Des Moines Register: Iowa meatpacking employees wait for COVID-19 vaccine while Illinois neighbors get theirs

Link - While Iowa meatpacking workers don't know when they will receive COVID-19 vaccinations, their counterparts in neighboring Illinois are getting their first shots this week.

Delish: The FDA Has Issued A Warning About Cheeses Like Queso Fresco Due To A Listeria Outbreak That May Be Linked

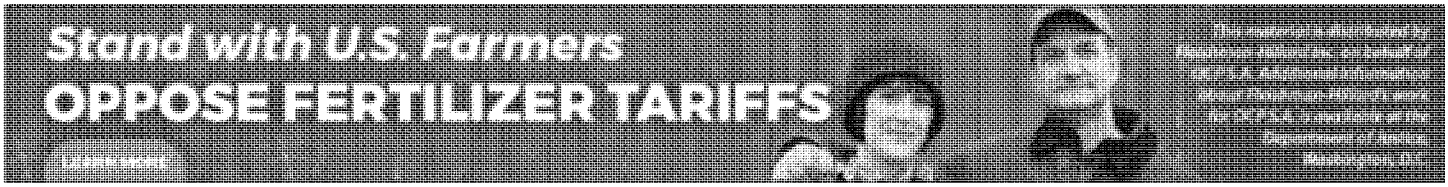
Link - Seven people across four states have been hospitalized.

Associated Press: Got no milk: Nestle creates vegan KitKat bar

Link - Coming soon to a selected retailer near you: a vegan version of the iconic KitKat candy bar.

The Washington Post: There's an invisible climate threat seeping from grocery store freezers. Biden wants to change that.

Link - New undercover survey suggests leaks of powerful planet-warming gases pervade many supermarkets.



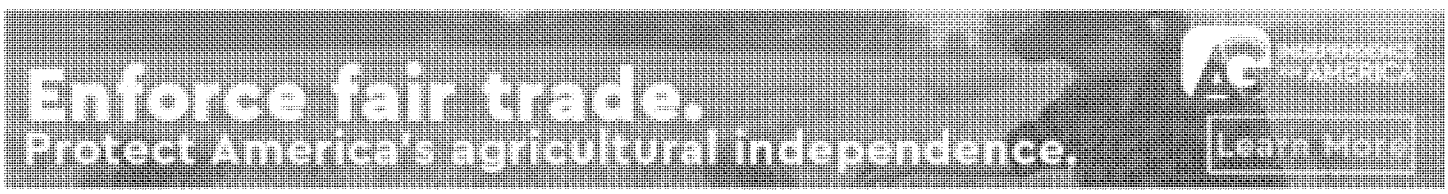
TRADE & INTERNATIONAL

The Guardian: Farmers' protests in India: why have new laws caused anger?
Link - Hundreds of thousands have joined demonstrations against agricultural changes introduced last year

The Press and Journal: NFU Scotland conference: McCornick demands farming policy roadmap
Link - The outgoing president of NFU Scotland (NFUS) has urged the Scottish Government to develop a future policy roadmap for the sector.

South China Morning Post: China food security: time to boost domestic output as focus on imports 'fundamentally incompatible'
Link - China's focus on self-reliance in food security this year means stronger domestic production and so fewer imports over time, analysts say

The Tribune: Farmer deaths: They would have died anywhere, says Haryana Agriculture Minister in controversial remarks
Link - Haryana Agriculture Minister Jai Prakash Dalal said 200 farmers who died during the ongoing protests would have died anywhere—remarks that could be seen as insensitive.



LABOR & IMMIGRATION

TIME: Minari and the Real Korean-American Immigrants Who Have Farmed U.S. Soil for More Than a Century

Link - There are many Korean American farmers who acutely recognize the experiences portrayed in Minari—and, until now, had never seen themselves reflected onscreen with such specificity

Michigan Radio: Nearly 80000 farm, agriculture workers eligible for vaccine

Link - On March 1, tens of thousands of Michiganders will be added to the growing pool of those eligible to receive the COVID-19 vaccine, the state health department announced Monday.

The River Newsroom: Essential, Invisible, Ineligible: Food and Farm Workers Wait for Vaccine

Link - New York has not included vulnerable agricultural workers alongside other essential employees in vaccine eligibility thus far.

NPR: As California Expands Vaccination, Some Worry Farm Workers Will Lose Out

Link - some labor groups worry that farmworkers are losing their place in line, a problem for California's Latino population, which has been disproportionately affected by COVID-19.

NBC News: Biden, Hill Democrats plan to unveil immigration reform bill this week

Link - The proposal is expected to include an earned pathway to citizenship for 11 million undocumented immigrants and expand the refugee resettlement program.

CONSERVATION & WILDLIFE

CNBC: Biden's climate change strategy looks to pay farmers to curb carbon footprint

Link - The Biden administration is looking to steer farm aid from the USDA's Commodity Credit Corporation to encourage carbon emissions reductions on farms.

Associated Press: Congressman hopes politics align on divisive Northwest dams

Link - This month, Republican U.S. Rep. Mike Simpson of Idaho issued a bold plan that called for removing those same dams to save the salmon. In between those two acts were decades of litigation that show no sign of ending and $17 billion worth of improvements to the dams that did little to help fish.

Reuters: Bill Gates warns that manufacturing could challenge climate goals

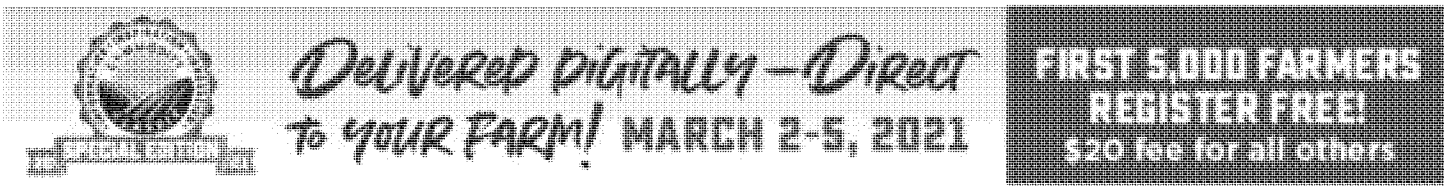
Link - Bill Gates exudes optimism in discussing the world's ability to tackle climate change – until he hits on manufacturing. About that, he is worried.

CNN: Study shows New York subways have a pollution problem

Link - In the Big Apple, even mass transit can be a pollution risk.

60 Minutes: Bill Gates: How the world can avoid a climate disaster

Link - "Without innovation, we will not solve climate change. We won't even come close," Gates says.



MISCELLANEOUS

Agri-Pulse: Opinion: Our roadmap for diversity and inclusion brings more than plant potential to life

Link - In this opinion piece, Brandon Bell with Syngenta, dives in on Syngenta's diversity and inclusion progress and explains how both are needed to foster innovation in the agriculture industry.

Des Moines Register: In patent battle over high-speed planter, Iowa-based Kinze accuses Deere of 'unlawful monopoly'

Link - Kinze Manufacturing is accusing Deere & Co. of operating an "unlawful monopoly" as the two

agricultural equipment makers tangle over a patent dispute.

Honolulu Civil Beat: These 2 Companies Are Putting Big Money Into Hawaii's Agricultural Future. Will Their Bets Pay Off?
Link - A pair of companies backed by a billionaire and a pension fund are trying to revitalize fallow farmland in the state.

Grand Forks Herald: Former US Rep. Collin Peterson still wants to help agriculture
Link - Former U.S. House Agriculture Chairman Collin Peterson, D-Minn., 76, talks about life after being defeated by Rep. Michelle Fischbach, R-Minn. Fischbach was endorsed by former President Donald Trump.

IoT Business News: Smart Farm Technologies: Shaping Security on Farms
Link - Data-led farming is improving security and preventing losses – with other benefits around safe, sustainable agriculture.

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1400 Independence Ave. SW Ste 1639
Washington, DC 20250

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Message

From: POLITICO Pro [alert@email.politicopro.com]
Sent: 3/3/2021 7:54:49 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Exxon calls for carbon storage on federal and state lands

Exxon calls for carbon storage on federal and state lands

By Lorraine Woellert

03/03/2021 02:54 PM EST

Exxon Mobil on Wednesday called for regulations that would allow the company to use federal or state land to store carbon emissions.

Demand for carbon offsets will increase as more companies look to mitigate climate risk, Chair and CEO Darren Woods said. Large-scale carbon capture and storage, or CCS, can be a cost-effective way to deliver those potentially valuable offsets, which he noted the Intergovernmental Panel on Climate Change believes "can be done for half the cost of other lower-carbon solutions."

"Governments need to implement legal and regulatory frameworks for large-scale deployments, including permitting for new carbon capture projects" and mechanisms to grant storage rights on federal or state lands, Wood said at the company's annual presentation to investors and reporters on Wednesday.

"People with higher standards of living are driving demand for electricity and are going to lead to more industrial activity. And that requires oil and gas for fuel and feedstock, also increasing demand for commercial transportation," Woods said. "For society to meet its ambitions for a lower carbon-energy future, emissions in these hard-to-decarbonize sectors need to be addressed."

Market pressures: As companies pledge to cut emissions, many are counting on carbon storage or capture to meet their goals, and relying on nature-based carbon sinks, such as forests and agriculture, to offset their emissions. And some governments and corporations are moving toward a cross-sector price on carbon, which will create a market incentive for carbon capture. With natural sinks limited, carbon capture has emerged as a new source for offsets, a market the fossil fuel giant hopes to capitalize on.

"We're very much in favor of a price on carbon that cuts across sectors and allows the market to work," Woods said. "There's work needed to facilitate investments in this space."

Governments need to set rules on infrastructure permits and build legal frameworks for storage rights, he said. And more money needs to flow to carbon-capture technology. With large sums flowing into transportation, such as EVs, other harder-to-decarbonize sectors are being neglected.

"Sectors that account for more than two-thirds of global emissions are receiving less than 20 percent of the available funding," Woods said. "This presents opportunities for a low-carbon solutions business to play a key role."

To view online:
https://subscriber.politicopro.com/sustainability/whiteboard/2021/03/exxon-calls-for-carbon-storage-on-federal-and-state-lands-3987364

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Arlington, VA 22209
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Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/11/2021 12:10:31 PM
To: Harris, Sincere [Harris.Sincere@epa.gov]; Mercado Violand, Fernando [MercadoVioland.Fernando@epa.gov]
CC: Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]; Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: RE: OAR Inputs for Cabinet Report

Resending with Joe cc'd.

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

From: Campbell, Ann
Sent: Thursday, February 11, 2021 7:09 AM
To: Harris, Sincere <Harris.Sincere@epa.gov>; Mercado Violand, Fernando <MercadoVioland.Fernando@epa.gov>
Cc: Goodin, John <Goodin.John@epa.gov>; Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Kim, Eun <Kim.Eun@epa.gov>
Subject: OAR Inputs for Cabinet Report

Please find below, OAR's inputs for this week's Cabinet Report. Thank you.

CLIMATE

Ex. 5 Deliberative Process (DP)

Ann (Campbell) Ferrio
Chief of Staff

EPA/Office of Air and Radiation
Office: 202 566 1370

Message

From: Shoaff, John [Shoaff.John@epa.gov]
Sent: 3/10/2021 7:31:02 PM
To: Dunham, Sarah [Dunham.Sarah@epa.gov]; Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Edwards, Jonathan [Edwards.Jonathan@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]
CC: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]; Lubetsky, Jonathan [Lubetsky.Jonathan@epa.gov]
Subject: RE: Question regarding draft Spring Regulatory Agenda

All,

With thanks to those that have already provided, just a friendly reminder for any add'l feedback on questions below, see highlighted bullets, and on top of prior input, scroll down further.

Will compile and pass at the end of the day in order to follow up with Alison and also pass noted Reg Agenda description clarifications on to our team to update as appropriate.

Thanks!

John

JOHN SHOAFF (HE/HIM/HIS) | DIRECTOR
OFFICE OF AIR POLICY & PROGRAM SUPPORT (OAPPS)
OFFICE OF AIR & RADIATION | U.S. EPA | WJC NORTH 5442-C
1200 PENNSYLVANIA AVE. NW | MC 6103A | WASHINGTON, D.C. | 20460 | USA
Shoaff.john@epa.gov | **1-202-564-0531 DIRECT** | **1-202-257-1755 MOBILE**

From: Shoaff, John
Sent: Tuesday, March 9, 2021 1:03 PM
To: Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Campbell, Ann <Campbell.Ann@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>
Cc: Dunham, Sarah <Dunham.Sarah@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Edwards, Jonathan <Edwards.Jonathan@epa.gov>; Grundler, Christopher <grundler.christopher@epa.gov>; Lubetsky, Jonathan <Lubetsky.Jonathan@epa.gov>
Subject: RE: Question regarding draft Spring Regulatory Agenda

Thanks Tomas for the feedback and Ann for flagging.

ODs,

Getting some input on this already, but please see question below from deputy Chief of Staff, email chain and **pass back any feedback by COB tomorrow (Wed).**

- ***Are there any items on this [Spring Reg Agenda] list for which the timing or rule status may raise questions/concerns from external stakeholders (i.e. the timeline is "too long", why aren't we doing it sooner, etc)?***
- ***Asked another way: Are there any judgment calls on this list that need the attention of Dan and the Administrator before it is finalized?***

Welcome items on top of Joe's example, reconsideration of the Ozone NAAQS, and Tomas' input below. And, among

Ex. 5 Deliberative Process (DP)

I'll plan to compile and circulate for quick discussion with Air Issues Thurs AM and then also loop in our reg team to fine tune agenda entries program reg contacts/OP as may be needed. Thanks!

John

JOHN SHOAFF (HE/HIM/HIS) | DIRECTOR
OFFICE OF AIR POLICY & PROGRAM SUPPORT (OAPPS)
OFFICE OF AIR & RADIATION | U.S. EPA | WJC NORTH 5442-C
1200 PENNSYLVANIA AVE. NW | MC 6103A | WASHINGTON, D.C. | 20460 | USA
Shoaff.john@epa.gov | **1-202-564-0531 DIRECT | 1-202-257-1755 MOBILE**

From: Carbonell, Tomas <Carbonell.Tomas@epa.gov>
Sent: Tuesday, March 9, 2021 12:11 PM
To: Campbell, Ann <Campbell.Ann@epa.gov>; Goffman, Joseph <Goffman.Joseph@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>
Cc: Dunham, Sarah <Dunham.Sarah@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Edwards, Jonathan <Edwards.Jonathan@epa.gov>; Grundler, Christopher <grundler.christopher@epa.gov>
Subject: RE: Question regarding draft Spring Regulatory Agenda

Thanks all – a few items that we may want to flag:

Ex. 5 Deliberative Process (DP)

Best,

Tomás

From: Campbell, Ann <Campbell.Ann@epa.gov>
Sent: Tuesday, March 9, 2021 11:38 AM

To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>
Cc: Dunham, Sarah <Dunham.Sarah@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Edwards, Jonathan <Edwards.Jonathan@epa.gov>; Grundler, Christopher <grundler.christopher@epa.gov>
Subject: RE: Question regarding draft Spring Regulatory Agenda

Adding John Shoaff so he can help run the drill.

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Tuesday, March 9, 2021 11:33 AM
To: Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>
Cc: Campbell, Ann <Campbell.Ann@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>; Tsirigotis, Peter <Tsirigotis.Peter@epa.gov>; Edwards, Jonathan <Edwards.Jonathan@epa.gov>; Grundler, Christopher <grundler.christopher@epa.gov>
Subject: RE: Question regarding draft Spring Regulatory Agenda

In addition to the question below, Alison also would like us to flag actions not on the list that might create concerns. I

Ex. 5 Deliberative Process (DP)

The AO would like to hear back from us on Thursday.

Thanks.

Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency

From: Cassady, Alison <Cassady.Alison@epa.gov>
Sent: Tuesday, March 9, 2021 10:56 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>
Subject: Question regarding draft Spring Regulatory Agenda

Hi all,

Question for you about this LOOOONG list of regulatory actions for the spring regulatory agenda. You guys are such over-achievers!

Ex. 5 Deliberative Process (DP)

Thanks,

Alison

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Alison L. Cassady
Deputy Chief of Staff for Policy
U.S. Environmental Protection Agency
Cell: (202) 941-6036

Message

From: Shaw, Betsy [Shaw.Betsy@epa.gov]
Sent: 3/5/2021 10:27:26 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Hyde, Courtney [Hyde.Courtney@epa.gov]; Marusiak, Eleanor [Marusiak.Eleanor@epa.gov]; Wolfe, Michael [Wolfe.Michael@epa.gov]
Subject: OAR Passback Appeal
Attachments: OAR FY2022 Funding Needs Core Program 2-25-21.docx; OAR FY2022 Funding Template Critical Infrastructure 2-25-21.docx

Importance: High

Hi Joe,

Once you've added your edits, please send to David copying the folks below with the attachments.

Thanks and have a great weekend!

Betsy

****
To: David Bloom Bloom.David@epa.gov

Cc: Carol Terris <Terris.Carol@epa.gov>; Williams, Maria <Williams.Maria@epa.gov>; Boyd, Wyatt Boyd.Wyatt@epa.gov; Betsy Shaw00 <Shaw.Betsy@epa.gov>; Courtney Hyde (Hyde.Courtney@epa.gov); Eleanor Marusiak <Marusiak.Eleanor@epa.gov>; Mike Wolfe (wolfe.michael@epa.gov)

Subject: OAR Passback Appeal

David,

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Thank you for your consideration and please let me know if you have any questions.

Joe

Message

From: Nunez, Alejandra [Nunez.Alejandra@epa.gov]
Sent: 3/2/2021 2:15:23 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Dunham, Sarah [Dunham.Sarah@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]; Simon, Karl [Simon.Karl@epa.gov]
Subject: FW: Howdy, and a letter as FYI
Attachments: Letter from ESB Coalition to Biden_Harris Admistration 3-1-21.pdf

FYI

From: Cassady, Alison <Cassady.Alison@epa.gov>
Sent: Tuesday, March 2, 2021 8:42 AM
To: Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Rosemary Enobakhare <rosemaryenobakhare@gmail.com>
Subject: FW: Howdy, and a letter as FYI

From: Matthew Davis <matthew_davis@lcv.org>
Sent: Monday, March 1, 2021 10:39 PM
To: Cassady, Alison <Cassady.Alison@epa.gov>
Subject: Howdy, and a letter as FYI

Hi Alison,
I hope you're doing well and getting settled in at EPA!
I realize that you may not be the right person to receive this letter as a heads up from the Electric School Bus Coalition, but I thought you might be able to direct it to the right person(s) in OPEEE, OCFO or elsewhere. No response needed, but thought you all might find it helpful to see what we're encouraging on school buses in the Build Back Better plan. We've sent copies to the White House and DOE (who would likely have a role on the charging infrastructure and/or technical assistance).
Let me know if you have any questions.
Thanks and take care!
Matthew

Matthew H. Davis, MPH (*he/him*)
Legislative Director
League of Conservation Voters
cell: 617-529-5855

March 1, 2021

President Joseph R. Biden
Vice President Kamala Harris
The White House
1600 Pennsylvania Avenue, NW
Washington D.C. 20500

Dear Mr. President and Madam Vice President:

On behalf of the Electric School Bus (ESB) Coalition, a diverse partnership of civil society organizations, we write to encourage your administration to take action on school bus electrification consistent with your commitment to reach all new zero-emission American-made buses by 2030. Deploying zero-emission school buses would help meet our climate goals while reducing harmful air pollution, protecting children's health, and even boosting academic performance.

The anticipated recovery, or Build Back Better, package presents a critical opportunity to advance school bus electrification and to build back better and greener after the devastation of COVID-19. **A federal investment of $25 billion over 10 years would jumpstart the electric transition of the nation's school bus fleet until price parity for the technology is reached and other sources of private investments catalyze the sector. This level of federal funding would cover the price differential, training, and infrastructure costs for nearly 200,000 electric school buses, almost half of the nation's fleet. In order for these dollars to reach the communities where they are most needed, we request that you tailor this program to prioritize low-income communities of color who bear the highest pollution**

burden and worst air quality. These communities -- our communities -- should be consulted and included in the decision-making process as sites and fleet choices are selected.

Nearly 95 percent of America's school buses run on diesel, a fossil fuel that has been shown to cause numerous health problems, including asthma, bronchitis, and cancer. Each year, pollution from cars, trucks, and other vehicles cuts short an estimated 58,000 lives, and increases the risk of lung cancer, stroke, and heart disease. This pollution also makes people more vulnerable to diseases like COVID-19. Transitioning to all-electric school bus fleets would prevent the release of 5.3 million tons of greenhouse gas emissions each year, and protect our kids' lungs by keeping diesel fumes out of the air inside and outside of the buses.

Electric school buses are the buses of the future, and taking bold action to spur deployment now provides the opportunity to both safeguard and create long-term, high-quality manufacturing jobs in the United States; provide career paths in underserved communities; and ensure opportunities for workers experienced in incumbent technologies. To achieve these critical objectives, and enhance the overall economic benefits of this shift, an equitable ESB policy must require high road labor standards; strong Buy America provisions for assembly, manufacturing, and the entire EV supply chain, including charging infrastructure; and ensure job retention and workforce training tied to the maintenance and operation of school buses into the future. As President Biden has said, our move toward EVs is also an American jobs story, and that includes school buses.

In 2019, members of our coalition were pleased to work closely with then-Senator Kamala Harris to help develop the Clean School Bus Act, a bill establishing a federal grant program to help school districts electrify school buses. To rally political support for the act, the coalition mobilized parents, students, and youth to contact their Members of Congress, securing 16 co-sponsors in the Senate and 52 co-sponsors in the House of Representatives. We are excited to see backing for this bill and similar measures grow exponentially, especially now that Senators Catherine Cortez Masto and Patty Murray and Reps. Jahana Hayes and Tony Cárdenas have reintroduced similar legislation into the 117th Congress. It is clear that lawmakers, industry groups, manufacturers, and school transportation officials across the country recognize that our children deserve a clean ride to school.

Racial, social, economic, and environmental justice principles are the guiding force of the ESB Coalition. The ESB Coalition was established by Chispa, a program of the League of Conservation Voters organizing communities of color, the Environmental Law & Policy Center (ELPC), Sierra Club, and VEIC in 2017. The coalition has focused on organizing local community members and stakeholders to seek a transition from dirty diesel to zero-emission electric school buses, starting in the communities most harmed by air pollution. We have organized thousands of families and school districts across the country through educational workshops, petition collections, electric school bus demonstrations and tours, marches and rallies, press conferences, and citizen lobbying, succeeding in securing initial investments in electric school buses for students in Arizona, Maryland, California, Michigan, Florida, Illinois, Indiana, New York, Massachusetts, and Vermont.

Today, the ESB Coalition has grown to include a diverse set of equity, labor, clean energy, and environmental organizations working towards one goal: a full transition of the nation's school bus fleet to electric models that will result in 25 million children breathing cleaner air. Momentum is on our side; a myriad of pilot projects across the country have proven that electric school buses are significantly safer and healthier for our children and communities, while also costing less to operate. Electric school buses are the ideal vehicle to pioneer the widespread use of vehicle-to-grid (V2G) and vehicle-to-building (V2B) technologies. These technologies will provide financial benefits for school districts, improve grid resilience and emergency response, pave the way for the increased adoption of renewable energy sources, and promote environmental justice outcomes by reducing the need for heavily-polluting peaker plants. It's no wonder that school districts from Nevada to Minnesota to Texas to Connecticut are now seeking funding to replace dirty diesel models with clean school buses.

We enter 2021 renewed and inspired by the opportunities your administration presents and cognizant of the challenge before us. Fully transitioning the nation's fleet will require coordination across school districts, utilities, manufacturers, and government agencies; a firm commitment to equity; inclusive procurement practices; and most importantly, funding. Yet we have never been more optimistic that the time has come to transform how we transport students and, in the process, reach other crucial climate, health, resilience, and economic benefits.

The nation's school children are counting on us. Let's show them we're ready to deliver.

Respectfully,

Chispa, a program of the League of Conservation Voters
Chispa Arizona
Chispa Florida
Chispa Maryland
Chispa Nevada
Clean Energy Works
Dream Corps Green For All
Earthjustice
Environmental Law and Policy Center
Florida Conservation Voters
League of Conservation Voters
Maryland League of Conservation Voters
Moms Clean Air Force
Mothers Out Front Virginia
New York League of Conservation Voters
Protegete
Sierra Club
VEIC
U.S. Public Interest Research Group

Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 3/18/2021 12:27:06 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Re: Meeting request on behalf of the Composite Panel Association

We'll send this to OAQPS to be vetted. My initial reaction is a conversation between them and the sender of the request might be a good first stop. But we will check.

Thank you.

Ann (Campbell) Ferrio
Chief of Staff
Office of Air and Radiation
(202) 566-1370

On Mar 18, 2021, at 8:16 AM, Goffman, Joseph <Goffman.Joseph@epa.gov> wrote:

Ex. 5 Deliberative Process (DP)

Sent from my iPhone

Begin forwarded message:

> **From:** David Beaudreau <dbeaudreau@dclrs.com>
> **Date:** March 18, 2021 at 8:03:25 AM EDT
> **To:** Goffman.Joseph@epamail.epa.gov
> **Subject: Meeting request on behalf of the Composite Panel Association**
>
> Hi Joe,
>
> Hope you're well. I wanted to reach out to introduce the new President of the Composite Panel Association. You may recall we met way back in 2015 when Jackson Morrill was the President. The new one is Andy O'Hare and he'd like to meet to introduce himself and talk about a couple of issues related to renewable biomass and composite panels.
>
> Composite panels are made primarily from wood residuals and are used in furniture, cabinets and other products. These residuals are sometimes now being diverted to made wood pellets which are then burned. We've been working on updating the CPA policy with respect to these areas and would like to chat with you for a few minutes about this and see where it may connect to some of the work EPA will be doing on these types of issues and their connection to climate change going forward.
>
> Do you have a few minutes next week to meet via video chat/Zoom?
>
> Thank you,

David G. Beaudreau Jr.

Senior Vice President

D.C. Legislative and Regulatory Services, Inc.

Cell: 202-360-0649

www.dclrs.com

Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/5/2021 2:02:12 PM
To: Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Edwards, Jonathan [Edwards.Jonathan@epa.gov]; Dunham, Sarah [Dunham.Sarah@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Shaw, Betsy [Shaw.Betsy@epa.gov]; Goffman, Joseph [Goffman.Joseph@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]
Subject: FOR 9:15: REVISED First draft of EO Response, Due to OP today
Attachments: OAR Actions Subj to OMB 2021_draft 020521.xlsx

Thank you everyone for your feedback. Please find attached a revised response capturing your comments.

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

ENVIRONMENTAL INTEGRITY PROJECT—CLEAN AIR COUNCIL
AIR ALLIANCE HOUSTON—CHESAPEAKE CLIMATE ACTION NETWORK
EARTHWORKS—ENVIRONMENT AMERICA—ENVIRONMENT TEXAS
HOOSIER ENVIRONMENTAL COUNCIL—PENNENVIRONMENT
TEXAS CAMPAIGN FOR THE ENVIRONMENT

March 2, 2021

Jane Nishida, Acting Administrator
U.S. Environmental Protection Agency
Office of the Administrator, Mail Code 1101A
1200 Pennsylvania Avenue N.W.
Washington, D.C. 20460

*Via Certified Mail and Electronic Mail (*nishida.jane@epa.gov*)*

Re: Supplemental Notice of Intent to Sue the Environmental Protection Agency for Failure to Perform a Nondiscretionary Duty under the Clean Air Act

Dear Acting Administrator Nishida,

We write on behalf of the Environmental Integrity Project, Clean Air Council, Air Alliance Houston, Chesapeake Climate Action Network, Earthworks, Environment America, Environment Texas, Hoosier Environmental Council, PennEnvironment, and Texas Campaign for the Environment ("Parties") to provide supplemental notice of the Parties' intent to sue the U.S. Environmental Protection Agency (EPA) for failure to review the general control device requirements for flares ("NSPS General Flare Requirements") under the New Source Performance Standards (NSPS), 40 C.F.R. § 60.18(b)–(f), or, in the alternative, the overdue source categories identified in Table 1 below that incorporate the NSPS General Flare Requirements at least every eight years, as required by section 111(b) of the Clean Air Act. *See* 42 U.S.C. § 7411(b)(1)(B), (h)(1), (h)(5).

On Parties' information and belief, EPA has not conducted the statutorily mandated review of the NSPS General Flare Requirements since EPA's initial promulgation in 1986. At the very least, EPA has not conducted this review within the last eight years. In addition to EPA's failure to conduct the statutorily mandated review of the NSPS General Flare Requirements themselves, there are presently at least nine categories of stationary sources within ten subparts under 40 C.F.R. Part 60 that reference and incorporate the NSPS General Flare Requirements, yet also are overdue for EPA's statutorily mandated review.

In providing this supplemental notice, Parties cite and incorporate by reference the notice that Parties previously provided to EPA in a letter dated June 11, 2020 ("June 2020 Notice Letter").[1] While Parties believe that previous letter adequately put EPA on notice as to the ten NSPS subparts under 40 C.F.R. Part 60 that are also overdue for EPA's review, Parties hereby

[1] The Parties additionally cite and incorporate by reference all relevant regulatory background and supporting facts contained within the Parties' subsequent notice letter dated August 17, 2020, regarding the NESHAP General Flare Requirements ("August 2020 Notice Letter").

provide this supplemental notice out of an abundance of caution in order to make these violations clear.

Section 304(a)(2) of the Clean Air Act authorizes citizen suits "against the Administrator where there is alleged a failure of the Administrator to perform any act or duty under this chapter which is not discretionary with the Administrator." 42 U.S.C. § 7604(a)(2). We hereby provide notice of the Parties' intent to file suit against EPA and you in your official capacity as Acting Administrator of the EPA for failure to perform the nondiscretionary duties under the Clean Air Act. *See* 42 U.S.C. § 7604(b). Parties may commence this suit any time at least sixty days after the postmark date of this letter. *See* 40 C.F.R. § 54.2(d).

I. LEGAL REQUIREMENTS AND REGULATORY BACKGROUND

Section 111(b) of the Clean Air Act requires the Administrator to promulgate and to periodically review and revise the NSPS for each category of stationary source at least every eight years. *See* 42 U.S.C. § 7411(b). Specifically:

> The Administrator shall, at least every 8 years, review and, if appropriate, revise such standards following the procedure required by this subsection for promulgation of such standards. Notwithstanding the requirements of the previous sentence, the Administrator need not review any such standard if the Administrator determines that such review is not appropriate in light of readily available information on the efficacy of such standard.

42 U.S.C. § 7411(b)(1)(B).

Alternatively, section 111(h) allows the Administrator, where he has determined "it is not feasible to prescribe or enforce a standard of performance," to "instead promulgate a design, equipment, work practice, or operational standard, or combination thereof, which reflects the best technological system of continuous emission reduction . . . ." *See* 42 U.S.C. § 7411(h)(1). Any such "design, equipment, work practice, or operational standard, or any combination thereof . . . shall be treated as a standard of performance," including with respect to the eight-year review and revision deadlines of subsection (b). *See* 42 U.S.C. § 7411(h)(5).

As provided in Parties' notice letter dated June 11, 2020, EPA has not conducted the statutorily mandated review of the NSPS General Flare Requirements under section 111(b)(1)(B), nor has the Administrator determined that "such review is not appropriate in light of readily available information on the efficacy of such standard." 42 U.S.C. § 7411(b)(1)(B); *see* June 2020 Notice Letter at 2-5.

In addition to this failure to conduct the statutorily mandated review of the NSPS General Flare Requirements themselves, there are presently at least nine categories of stationary sources within ten subparts under 40 C.F.R. Part 60 that reference and incorporate the NSPS General Flare Requirements, yet also are overdue for EPA's statutorily mandated review.

Table 1: Overdue Source Categories Incorporating NSPS General Flare Requirements

Source Category	40 C.F.R. Part 60 Subpart	Last Revised	Citation
Volatile organic liquid storage vessels	Kb	Oct. 2003	EPA, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, 68 Fed. Reg. 59,328 (Oct. 15, 2003); EPA, Volatile Organic Liquid Storage Vessels - Including Petroleum Storage Vessels: New Source Performance Standards (NSPS), https://www.epa.gov/stationary-sources-air-pollution/volatile-organic-liquid-storage-vessels-including-petroleum-storage (last visited March 1, 2021)
SOCMI Equipment Leaks	VV, VVa	Nov. 2007	EPA, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry; Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries, 72 Fed. Reg. 64,860 (Nov. 16, 2007)
Bulk Gasoline Terminals	XX	Dec. 2003	EPA, Standards of Performance for Bulk Gasoline Terminals and National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations), 68 Fed. Reg. 70,960 (Dec. 19, 2003); EPA, Bulk Gasoline Terminals: New Source Performance Standards (NSPS), https://www.epa.gov/stationary-sources-air-pollution/bulk-gasoline-terminals-new-source-performance-standards-nsps (last visited March 1, 2021)
Polymer manufacturing industry	DDD	Dec. 2000	EPA, Consolidated Federal Air Rule (CAR): Synthetic Organic Chemical Manufacturing Industry, 65 Fed. Reg. 78,267 (Dec. 14, 2000); EPA, Polymer Manufacturing Industry: Standards of Performance for Volatile Organic Compound (VOC) Emissions, https://www.epa.gov/stationary-sources-air-pollution/polymer-manufacturing-industry-standards-performance-volatile (last visited March 1, 2021)

SOCMI air oxidation unit processes	III	Dec. 2000	EPA, Consolidated Federal Air Rule (CAR): Synthetic Organic Chemical Manufacturing Industry, 65 Fed. Reg. 78,267 (Dec. 14, 2000)
Onshore natural gas processing plant equipment leaks	KKK	Aug. 2012	EPA, Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews, 77 Fed. Reg. 49,489 (Aug. 16, 2012); EPA, Equipment Leaks of Volatile Organic Compounds From Onshore Natural Gas Processing Plants for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011: New Source Performance Standards (NSPS), https://www.epa.gov/stationary-sources-air-pollution/equipment-leaks-volatile-organic-compounds-onshore-natural-gas (last visited March 1, 2021)
SOCMI distillation operations	NNN	Dec. 2000	EPA, Consolidated Federal Air Rule (CAR): Synthetic Organic Chemical Manufacturing Industry, 65 Fed. Reg. 78,267 (Dec. 14, 2000)
Petroleum refinery wastewater systems	QQQ	Dec. 2000	EPA, Volatile Organic Compounds (VOC) Emissions from Petroleum Refinery Wastewater Systems: New Source Performance Standards (NSPS), https://www.epa.gov/stationary-sources-air-pollution/volatile-organic-compounds-voc-emissions-petroleum-refinery (last visited March 1, 2021)
SOCMI reactor processes	RRR	Dec. 2000	EPA, Consolidated Federal Air Rule (CAR): Synthetic Organic Chemical Manufacturing Industry, 65 Fed. Reg. 78,267 (Dec. 14, 2000)

For each of these ten subparts incorporating the NSPS General Flare Requirements, EPA has not conducted the statutorily mandated review under section 111(b)(1)(B) within the last eight years, nor has the Administrator determined that "such review is not appropriate in light of readily available information on the efficacy of such standard." 42 U.S.C. § 7411(b)(1)(B).

As provided in greater detail in the June 2020 Notice Letter and August 2020 Notice Letter, there is an urgent need to update the NSPS General Flare Standards themselves and these ten subparts that incorporate them, as EPA itself has determined on multiple recent occasions that the standards are outdated for specific industry sectors, that they lead to the operation of flares with poor destruction efficiency, and that they require revision. *See* June 2020 Notice Letter at 5-8; August 2020 Notice Letter at 7-9. While review and revision of the NSPS General Flare Standards is the best and most efficient way to address this need across the board, there is

also a legal duty and substantive need for EPA to review and revise the ten subparts that continue to incorporate these outdated flare standards.

II. PARTIES GIVING NOTICE

The names, addresses, and telephone numbers of Parties giving notice are:

Environmental Integrity Project
1000 Vermont Ave. NW
Suite 1100
Washington, DC 20005
(202) 296-8800

Clean Air Council
135 S. 19th Street
Suite 300
Philadelphia, PA 19103
(215) 567-4004

Air Alliance Houston
2520 Caroline St.
Suite 100
Houston, TX 77004
(713) 528-3779

Chesapeake Climate Action Network
6930 Carroll Ave., Suite 720
Takoma Park, MD 20912
(240) 396-1981

Earthworks
1612 K St. NW
Suite 904
Washington, DC 20006
(202) 887-1872

Environment America
1543 Wazee St.
Suite 410
Denver, CO 80202
(303) 801-0581

Environment America d/b/a Environment Texas
200 East 30th Street
Austin, TX 78705
(512) 479-0388

Hoosier Environmental Council
3951 N. Meridian St.
Suite 100
Indianapolis, IN 46208
(317) 685-8800

PennEnvironment
1429 Walnut Street
Suite 1100
Philadelphia, PA 19102
(215) 732-5897

Texas Campaign for the Environment
105 W. Riverside Dr.
Suite 120
Austin, TX 78704
(512) 326-5655

Adam Kron is the counsel representing the Environmental Integrity Project, Air Alliance Houston, Chesapeake Climate Action Network, Earthworks, Environment America, Environment Texas, Hoosier Environmental Council, PennEnvironment, and Texas Campaign for the Environment, with contact information provided in the signature block below. Joseph Otis Minott, Alexander G. Bomstein, and Kathryn L. Urbanowicz are the attorneys representing Clean Air Council, with contact information provided in the signature block below.

III. CONCLUSION

Section 111(b) of the Clean Air Act requires the Administrator to promulgate and to periodically review and revise the NSPS at least every eight years. *See* 42 U.S.C. § 7411(b)(1)(B). As provided with respect to the ten subparts above, the Administrator has made no such review within the last eight years, as required by section 111(b) of the Clean Air Act. Furthermore, the Administrator has not made the alternative determination that "such review is

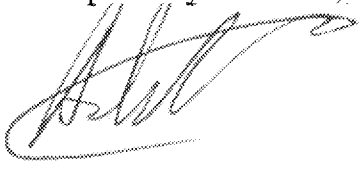
not appropriate in light of readily available information on the efficacy of such standard." *See* 42 U.S.C. § 7411(b)(1)(B). For these reasons, EPA has failed to perform a nondiscretionary act or duty. *See* 42 U.S.C. § 7604(a).

Parties may commence a citizen suit to compel EPA to perform any or all of the above acts or duties at any time beginning sixty days from the postmark date of this letter, which is June 11, 2020. *See* 42 U.S.C. § 7604(a); 40 C.F.R. § 54.2(d). If EPA fails to cure its noncompliance with these statutory mandates, Parties intend to file suit in the U.S. District Court for the District of Columbia, seeking declaratory relief, injunctive relief, and litigation costs, as appropriate.

If you have any questions regarding the allegations in this notice or believe any of the foregoing information may be in error, please do not hesitate to contact us using the contact information listed below. Parties would also welcome an opportunity to discuss a resolution of this matter prior to expiration of the notice period if you are prepared to remedy the violations discussed above.

Thank you for your prompt attention to this matter.

Respectfully submitted,



Adam Kron
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Environmental Integrity Project
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Washington, DC 20005
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akron@environmentalintegrity.org

Attorney for Environmental Integrity Project, Air Alliance Houston, Chesapeake Climate Action Network, Earthworks, Environment America, Environment Texas, Hoosier Environmental Council, PennEnvironment, and Texas Campaign for the Environment

Joseph Otis Minott
Executive Director and Chief Counsel
Alexander G. Bomstein
Senior Litigation Attorney
Kathryn L. Urbanowicz
Staff Attorney
135 S. 19th Street, Suite 300
Philadelphia, PA 19103
(215) 567-4004
joe_minott@cleanair.org
abomstein@cleanair.org
kurbanowicz@cleanair.org

Attorneys for Clean Air Council

Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/2/2021 8:40:01 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Exxon, Chevron to keep spending in check in 2021

Exxon, Chevron to keep spending in check in 2021

By Ben Lefebvre

02/02/2021 03:38 PM EST

Oil and gas companies stung by last year's steep downturn are pledging to keep a lid on their spending in 2021, with some expecting the sluggish conditions to overshadow any effects from the Biden administration's pause on new permits and leasing for federal lands.

Details: Industry giants Exxon Mobil, Chevron and ConocoPhillips told investors this week that they don't plan to significantly increase the capital expenditure budgets that they were slashing last year even before the coronavirus pandemic significantly cut into global fuel demand.

Exxon said its projects budget for 2021 would range between $16 billion and $19 billion, down from $21 billion in 2020 and $31 billion in 2019. Chevron said it would spend $14 billion, up only slightly from 2020 but lower than the $20 billion it invested in 2019. ConocoPhillips said it would spend $5.5 billion in 2021, an increase from the year before, but said only $400 million of that would go toward "major new projects."

The companies' executives also downplayed to investors the effect their individual businesses would feel from President Joe Biden's move last week to place moratoriums on new oil and gas drilling permits and leases on federal land.

ConocoPhillips Chief Executive Ryan Lance said he believed the pauses would be temporary. "If the moratoriums become permanent, they will eliminate well-paying jobs, mainly in rural America, slow economic recovery, negatively impact energy and national security and increase our reliance on higher [polluting] foreign barrels," Lance said.

"As for the question of what a permitting moratorium could mean for ConocoPhillips specifically, let me take that head on," Lance continued. The company "could manage through this issue without materially impacting our plans."

Context: The oil industry is still reeling from the plummet in fuel demand caused by the pandemic. The steep drop in sales came as investors had already become pessimistic on the long-term growth prospects for oil given the larger move toward clean energy and the industry's reliance on debt.

Exxon Mobil CEO and Chairman Darren Woods said the company wouldn't predict where the price of oil would go in the next several years, but the company, which reportedly engaged in merger talks last year with Chevron, set its annual spending budget for the three years starting in 2022 in a range of $20 billion to $25 billion, depending on oil prices.

"We don't know where prices are going to go," Woods said during the company's earnings call. "We've not tried to build plans on speculating where prices will go."

The companies all talked up their investments in carbon capture technology, saying it had the potential to reduce emissions enough that they could continue to drill for oil and meet pollution reductions stipulated in the Paris Climate Agreement.

Exxon, which announced it would spend $3 billion over five years on a new business devoted to the technology, said it thought that operation would fit in with the Biden administration's goals to drive down U.S. methane emissions.

"We're beginning to see a broader recognition of the importance of that technology," Woods said. "It's an important part in achieving the ambitions of the Paris Agreement."

What's Next: The Biden administration is expected to release specific methane reduction targets in the next few months.

To view online:
https://subscriber.politicopro.com/energy/article/2021/02/exxon-chevron-to-keep-spending-in-check-in-2021-2031743

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This email was sent to goffman.joseph@epa.gov by:
POLITICO, LLC
1000 Wilson Blvd.
Arlington, VA 22209
USA

Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 3/16/2021 9:43:48 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: FW: FOR YOUR REVIEW: OAR Weekly Report

Ok, to send this on?

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

From: Campbell, Ann
Sent: Tuesday, March 16, 2021 11:10 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Kim, Eun <Kim.Eun@epa.gov>; Shaw, Betsy <Shaw.Betsy@epa.gov>; Millett, John <Millett.John@epa.gov>; Isabel DeLuca <DeLuca.Isabel@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>; Delaney Rakosnik (rakosnik.delaney@epa.gov) <rakosnik.delaney@epa.gov>; Kabanda, Thierry <Kabanda.Thierry@epa.gov>
Subject: FOR YOUR REVIEW: OAR Weekly Report

Please find below OAR's report for the week ending March 19. Thank you.

Hot Topics

- **Packages for Signature:**
  - Extension of 2019 and 2020 Renewable Fuel Standard Compliance and Attest Engagement Reporting Deadlines (Final Rule)

- **Packages at OMB for Review:**

- **Packages Heading to OMB Soon**
  - HFC Phasedown Rule (Proposed Rule)

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

Message

From: POLITICO Pro [alert@email.politicopro.com]
Sent: 2/24/2021 8:23:26 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: SEC to revise climate disclosure guidelines

SEC to revise climate disclosure guidelines

By Zachary Warmbrodt

02/24/2021 03:22 PM EST

SEC Acting Chair Allison Herren Lee today directed agency staff to begin work on revising decade-old guidance on climate change disclosures by public companies, the agency's first move in the Biden era to address financial risks from global warming.

In a statement, Lee said she was asking the SEC's Division of Corporation Finance to "enhance its focus on climate-related disclosure in public company filings," including a review of the extent to which companies address topics identified in the agency's climate disclosure guidance from 2010 and how the market is managing climate-related risks.

"The staff will use insights from this work to begin updating the 2010 guidance to take into account developments in the last decade," she said.

Why it matters: The SEC is widely expected to develop rules that would require companies to disclose more information about their contributions to climate change and the related risks they face. The review initiated by Lee marks the SEC's first step in that direction since Democrats took back control of the agency.

"Now more than ever, investors are considering climate-related issues when making their investment decisions," she said.

What's next: Biden's pick to lead the SEC, Gary Gensler, is expected to face questions about climate when he testifies about his nomination before the Senate Banking Committee on Tuesday. A growing number of major companies are rallying behind voluntary climate disclosure standards.

Last week, the acting director of the SEC's corporation finance division, John Coates, said the SEC "can and should help" but that the disclosure regime would take time to come together.

"Getting that kind of system in place is not simple," he said. "It's not going to be quick or easy. There are some real and challenging questions to answer."

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Sent: 3/1/2021 7:00:37 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]
CC: Hockstad, Leif [Hockstad.Leif@epa.gov]; Ferland, Henry [Ferland.Henry@epa.gov]
Subject: FW: Climate Summit Deliverables - compilation/follow-up to confirm prior to sending to OITA
Attachments: Leaders' Summit Deliverables- All OAR.xlsx; Leaders' Summit Delieverables OIA proposed items.xlsx

All,

Also appending OITA's compilation of EPA's input thus far for awareness with your review of our proposed additions. Thx!

John

JOHN SHOAFF (HE/HIM/HIS) | DIRECTOR
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From: Shoaff, John
Sent: Monday, March 1, 2021 1:06 PM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Carbonell, Tomas <Carbonell.Tomas@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>
Cc: Leif Hockstad (Hockstad.Leif@epa.gov) <Hockstad.Leif@epa.gov>; Ferland, Henry <Ferland.Henry@epa.gov>
Subject: Climate Summit Deliverables - compilation/follow-up to confirm prior to sending to OITA

Joe, Tomas, Ale,

Attached please find the compilation of programs' input for the proposed Climate Summit Deliverables. Think expected

Ex. 5 Deliberative Process (DP)

John

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Message

From: Agri-Pulse Daybreak [sara@agri-pulse.com]
Sent: 2/16/2021 9:59:25 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Agri-Pulse Daybreak Feb. 16: Senate sets Vilsack vote * Farm wages up 6% * Baldwin takes reins on Ag Approps

Agri-Pulse Daybreak Feb. 16: Senate sets Vilsack vote * Farm wages up 6% * Baldwin takes reins on Ag Approps

Your Agri-Pulse Daybreak for February 16, 2021

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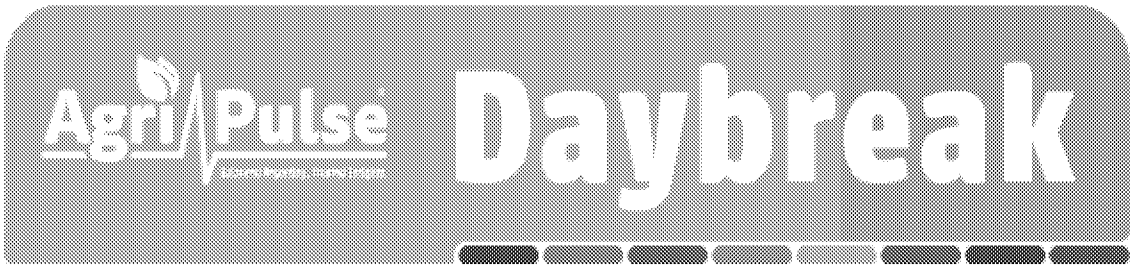

Click Here To Listen

Senate sets Vilsack vote

An end is finally in sight in the wait for a new agriculture secretary. The Senate has scheduled action for Feb. 23 on Tom Vilsack's nomination to return for a second stint at the head of USDA.

That means that USDA will go more than a month without a Senate-confirmed secretary to make the critical decisions needed to move forward with President Joe Biden's agenda for the department.

Farm wages up 6%

The USDA survey that will be used to set the 2021 minimum wage rates for the H-2A program shows farmworker pay rose 6% last year on average.

As usual, there is considerable variation in wage increases from region to region. For example, wage hikes were lower than the national average in Florida and across the Southeast. But increases were significantly higher than the national average in many states, including Iowa, Missouri, Oklahoma, Texas and much of the West. In California, the average wage rose more than 9%, from $16.15 in 2019 to $17.64 in 2020.

The survey is normally released in November, but it was delayed this year. The Trump administration initially killed the survey only to be ordered by a judge to reinstate it.

Baldwin takes reins on Ag Approps

The Senate Agriculture Appropriations Subcommittee, which writes annual budgets for USDA and FDA, is under new leadership. Wisconsin Democrat Tammy Baldwin is taking over as

chairwoman.

John Hoeven, R-N.D., will be the subcommittee's ranking Republican.

Two other Democrats joining the subcommittee are Brian Schatz of Hawaii and Martin Heinrich of New Mexico. There's one new Republican, Indiana's Mike Braun.

By the way: Oregon Sen. Jeff Merkley had been the top Democrat on the Ag panel. He'll now chair the Interior-Environment subcommittee, which is responsible for the Interior Department, EPA and the Forest Service.

Milk producers praise Baldwin's appointment

One of the first farm groups to congratulate Baldwin was the National Milk Producers Federation. NMPF President and CEO Jim Mulhern called her "an effective champion for dairy farmers in Wisconsin and beyond."

"She has fervently fought for dairy's good name in the face of FDA's unwillingness to enforce clear, simple dairy product terms," Mulhern said. "She also has played a key role in efforts to positively reform dairy policy and tirelessly worked on the appropriations committee to champion dairy innovation, as well as initiatives to combat farmer stress in rural America."

Ethanol conference looks ahead after rough year

A leading biofuel group heads into its annual conference looking at opportunities ahead despite production still below year-ago levels. The National Ethanol Conference begins virtually today.

Renewable Fuels Association President and CEO Geoff Cooper says ethanol production is still running 10% to 15% below pre-pandemic levels.

"We still have a ways to go but I have to be honest, we feel really good about how far the industry has come to recover from what we saw last spring," Cooper told *Agri-Pulse*.

Moving ahead, Cooper thinks the Biden administration can optimize the carbon-reducing potential of the Renewable Fuel Standard as it looks for ways to mitigate climate change.
He pointed to an RFA commissioned study released Friday showing carbon intensity of corn-based ethanol is now 45% below the carbon intensity of gasoline.

Ag's share of GHG emissions rose in 2019

The share of agriculture's greenhouse gas emission in the U.S. increased to about 9.6% in 2019 from 9.3% in 2018, according to EPA's annual report, released Friday.

The increased percentage resulted from higher emissions from

agriculture and lower emissions overall. EPA reported GHG emissions dropped 1.7% from 2018 to 2019. Emissions from fossil fuel combustion fell 2.7% between 2018 and 2019, but still accounted for about 74% of all emissions.

Nitrous oxide emissions from soil management made up 58% of all agricultural emissions, methane from cow burps about 28%, and manure management about 10%.

The report also noted that ag soils alone accounted for 75% of all nitrous oxide emissions and 5.2% of total GHG emissions in the U.S. Nitrous oxide has a global warming potential nearly 300 times that of carbon dioxide.

Philippines considers opening border to more US pork

The Philippines' government is working on a plan to open up its border to more pork imports as the country contends with shortages and consumer complaints about high prices, according to the National Pork Producers Council.

"This latest proposal comes on the heels of NPPC's recent meeting with the Philippines Ambassador to the U.S. Jose Manuel Romualdez," says the group representing U.S. producers. "NPPC has been working with the Philippines' government for more than a year to negotiate an expansion of the quota and lower pork import tariffs. NPPC welcomes the government's proposal, as the Philippines holds tremendous market opportunities for U.S. pork

exports."

The current quota is 54,000 metric tons, but the government is proposing to increase that to 400,000 tons.

He said it: "Most people would assume it should be the politician who should be in a jail cell," said Rep. Dusty Johnson, R-S.D. Johnson was commenting on the prison-like brick wall behind *Agri-Pulse*'s Spencer Chase during a webinar Friday.

Philip Brasher, Ben Nuelle and Steve Davies contributed to this report.
Questions? Tips? Contact Bill Tomson at Bill@Agri-Pulse.com

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Sent: 2/17/2021 12:53:10 PM
To: Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Dunham, Sarah [Dunham.Sarah@epa.gov]; Edwards, Jonathan [Edwards.Jonathan@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Shaw, Betsy [Shaw.Betsy@epa.gov]; Shoaff, John [Shoaff.John@epa.gov]
CC: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]
Subject: Final 100 Day List to OA
Attachments: Administrator-Level Tracker Through May '21_OAR.xlsx

Please find attached the spreadsheet provided to the OA.

Ann (Campbell) Ferrio
Chief of Staff
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Message

From: Kemkar, Neal (GE Corporate) [neal.kemkar@ge.com]
Sent: 3/11/2021 1:20:00 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: GE Aviation Sustainability Backgrounder
Attachments: GE Aviation Sustainability White Paper - 10 Mar 21.pdf

Joe – welcome back and congrats to Administrator Regan on confirmation!

Some background on GE Aviation's many sustainability efforts attached if helpful before our meeting later today. NK

Neal Kemkar
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Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/10/2021 4:59:01 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Court will not review dismissal of youth climate lawsuit

Court will not review dismissal of youth climate lawsuit

By Alex Guillén

02/10/2021 11:58 AM EST

The 9th U.S. Circuit Court of Appeals in San Francisco will not revisit a January 2020 ruling that dismissed a novel lawsuit brought by a group of children and young adults seeking sweeping federal action on climate change, leaving the conservative-controlled Supreme Court as the children's last possible chance of appeal.

Background: A split panel ruled last year that the children had made a compelling case about the threat of climate change and the federal government's historical role in promoting fossil fuel use. But the majority "reluctantly" ruled that the matter is a political question that should be resolved by Congress and the president, and the children's request for the courts to effectively order the government to aggressively address climate change was not possible.

Details: The appellate court's full slate of active judges on Wednesday rejected the children's request for an *en banc* rehearing.

"A judge requested a vote on whether to rehear the matter *en banc*. The matter failed to receive a majority of the votes of the non-recused active judges in favor of *en banc* consideration," the court said in a brief order. The court did not reveal the exact vote count.

Four of the circuit's 29 judges recused themselves: Margaret McKeown, a Clinton appointee, and Daniel Collins, Daniel Bress and Lawrence VanDyke, all Trump appointees. The court did not explain why the judges recused themselves. VanDyke had served as a political appointee in the Justice Department's environment division and may previously have worked on this case in that capacity.

What's next: The only remaining appeal option is the Supreme Court, but the children's prospects are poor.

Procedural disputes in the case previously brought it before the justices twice. The high court dodged taking any position on the core questions, but two members, Justices Clarence Thomas and Neil Gorusch, previously said they would have directly ended the case rather than leaving it to the 9th Circuit. Meanwhile, the replacement of the late Ruth Bader Ginsburg with Justice Amy Coney Barrett further diminishes their chances of success on appeal.

Context: Parallel efforts in other states have not even advanced as far as the case, *Juliana v. United States*, did in an Oregon court. Judges in such cases have often expressed sympathy about a lack of significant federal action on climate change but have also declined to step in to correct inaction from Congress or the executive branch. For example, on Monday a state court in Washington rejected a similar lawsuit brought by other young people. And a Florida judge last June dismissed yet another lawsuit.

However, a separate wave of climate litigation may prove more resilient. More than a dozen climate lawsuits have been filed against fossil fuel companies by states, cities or counties in state courts around the U.S. Four

appellate courts have rejected the companies' efforts to remove those suits to federal court, where they are more likely to be barred outright. The Supreme Court is expected to rule by June on whether on that jurisdictional question for these types of lawsuits.

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To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Infrastructure is next on the agenda, but that doesn't mean it will be quick

Infrastructure is next on the agenda, but that doesn't mean it will be quick

By Tanya Snyder

03/11/2021 02:30 PM EST

Democrats have promised that infrastructure is next after the Covid relief package is enacted, but that process won't be quick or easy, with many thorny issues remaining including the scope and size of the package, when and how it will move through Congress and how to pay for it.

For the next few weeks at least, the administration will be focused on selling the $1.9 trillion Covid package to the public. Congress will continue drafting legislation behind the scenes, but the administration isn't expected to release any legislative details to inform their work until closer to when President Joe Biden addresses Congress in what would typically be considered a State of the Union speech.

The timing for that speech has slipped from late February to mid-March and now, as Chief of Staff Ron Klain indicated this week, into April. That means mid-April, as Congress will be on Easter recess until April 13.

Soon after Biden's address, the administration is expected to release a budget, most likely a "skinny" budget with less detail than usual, as well as legislative principles about an infrastructure plan, according to several sources with knowledge of the plan.

That's the cue for Congress to release its bills — something closely modeled off of last year's H.R. 2 (116) in the House Transportation Committee and a revamped surface transportation bill in the Senate Environment and Public Works Committee — in May. The committee chairs have set a target of marking up those bills by Memorial Day.

The goal is to have both chambers pass their bills by the start of the August recess, with an eye toward finishing up conference negotiations before the current authorization expires on Sept. 30 — a very aggressive timetable.

Paying for it: Details about when an infrastructure package will be kicked off are becoming clear, but what might be in the package, how much it will spend and how that spending will be paid for are still murky. Republicans have insisted that it can't just run up the debt, and even House Speaker Nancy Pelosi said Thursday that some of it will have to be paid for.

How much of the bill is paid for, along with exactly what it contains, will be a product of how much bipartisan work can be done — and whether Democrats eventually decide to just use budget reconciliation to push through their priorities. Senate Budget Chair Bernie Sanders (I-Vt.) has proposed using reconciliation for an infrastructure funding bill, an idea Appropriations Chair Patrick Leahy (D-Vt.) rejects.

Reconciliation only works for budgetary provisions, though. Policy would need to be enacted through authorization bills and even if Democrats can jam funding through with reconciliation, one lobbyist suggested that Republicans may revolt when it comes time to vote for the accompanying policy bills.

"Why would Republicans agree to move an infrastructure bill ... knowing that the majority is just going to ram through the funding for it and fund it with things you don't like?" said an infrastructure lobbyist.

Several industry sources said Sen. Ron Wyden (D-Ore.), who chairs the all-important Senate Finance Committee, is working on a tax package that includes some combination of raising corporate tax rates, repealing the 2017 GOP tax cuts and a carbon tax, at least some of which could be dedicated to infrastructure. On Wednesday Wyden hinted at the package in the works, saying his plan would "make polluters pay for the cost of climate change" but didn't elaborate.

But any such package may ultimately just be aspirational, as all of those tax proposals are non-starters for Republicans.

The scope problem: The surface transportation bill provides a natural vehicle for traditional transportation infrastructure. But Democrats' vision for what needs to be included in the bill is vastly more expansive, ranging from water issues to broadband to the energy grid and more, and it's not clear how those ideas will be ultimately meshed together.

And then there's the matter of all the provisions Democrats want to bake into the measure that focus heavily on climate policies, which Republicans have already started hammering as an unrealistic "Green New Deal" that could harm middle America.

In addition, Democrats are considering reviving earmarks. This could be a double-edged sword — in the past, earmarks were key to bringing along support for surface transportation bills, but they also attracted enough ethical concerns that they were eventually banned. Reviving earmarks as part of this legislation could be key to horse trading, but could also open lawmakers up to extra criticism. Plus, many lawmakers, staffers and lobbyists don't have experience with earmarks, setting up a steep learning curve.

One infrastructure lobbyist also said he worried that even with this aggressive timetable, the vaccine rollout and accompanying revival of consumer-dependent businesses could work against a big-spending bill.

"This bill gets much harder to sell if economy gets lit on fire again in Q3," said the lobbyist. "In terms of, 'why do we need to do this, we're going to overheat the economy.'"

The administration could still sell it as a climate initiative or a long-overdue investment in the country's neglected infrastructure — and Congress still needs to reauthorize surface transportation programs — but selling it as an economic stimulus might not work if the economy has already come roaring back.

The Buttigieg factor: Another wild card, according to one veteran infrastructure industry source, is DOT Secretary Pete Buttigieg.

"Biden didn't pick him to set him up to fail," she said. "And Buttigieg is way out there — way, way out there — in terms of making big promises and big projections, it seems to me, without a real sense of how he's actually going to produce something."

Still, she said, there's hope that Buttigieg will "pull a rabbit out of a hat or something."

"That's what he's known for doing," she said. "He's 'innovative.' [Is he] going to do something wild and different and new that all the people that have been churning, churning, churning for all these years haven't really thought of?"

Laura Barrón-López contributed to this report.

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Sent: 3/10/2021 7:11:53 PM
Subject: AO Staff Office Weekly Report for the week ending March 10, 2021.
Attachments: AO Staff Weekly Report 031021v2.docx; AO Staff Weekly Report 031021v2.pdf

Good afternoon Acting Administrator Nishida and colleagues,

Attached please find the **AO Staff Office Weekly Report** (in both PDF and Word) for the week ending March 10, 2021.

Sincerely,
Ruth

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To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Agri-Pulse Daily Harvest 2/24/2021

Agri-Pulse Daily Harvest 2/24/2021

Agri-Pulse Daily Harvest -- 2/24/2021

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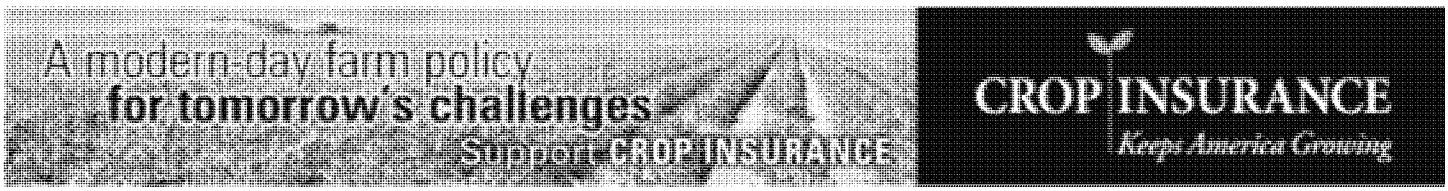


FARM & RURAL POLICY

Agri-Pulse: Daybreak for February 24, 2021

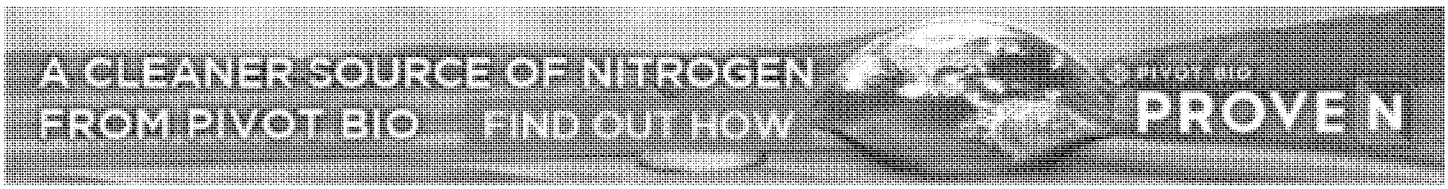
Link - (Audio) Mr. Secretary is back; Interior nominee's moderate tone; Poultry giant pleads guilty.

Agri-Pulse: DriveTime: February 23, 2021

Link - (Audio) The Senate has confirmed Tom Vilsack as Secretary of Agriculture and President Joe Biden will head to Texas later this week to understand winter storm impacts.

Agri-Pulse: Senate overwhelmingly confirms Vilsack to lead USDA

Link - The Senate on Tuesday voted to confirm Vilsack as the nation's Secretary of Agriculture, giving the former Iowa governor another term at the helm of USDA.



ENERGY

WEAU: Ethanol industry reacts to EPA decision

Link - The ethanol industry has gotten some encouraging news from the new leadership at the Environmental Protection Agency.

Southernminn.com: Grassley pleased EPA sides with biofuels in critical RFS case

Link - Iowa Senator Chuck Grassley says he's glad the EPA "has finally come around" after it announced its support for a recent appeals court decision supporting biofuels producers.

The Guardian: Texas freeze casts renewable energy as next battle line in US culture wars

Link - The frigid winter storm and power failure that left millions of people in Texas shivering in darkness has been used to stoke what is becoming a growing front in America's culture wars – renewable energy.

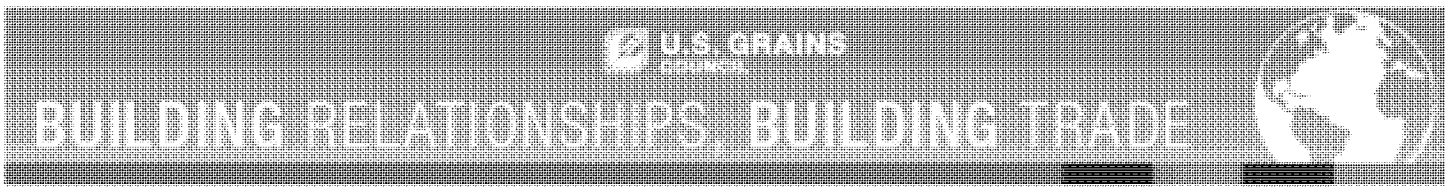
Charlotte Business Journal: Duke Energy expands renewable energy program to South Carolina

Link - The program connects large energy users to renewable energy projects.

CNN: A solar panel in space is collecting energy that could one day be beamed to anywhere on Earth

Link - Scientists working for the Pentagon have successfully tested a solar panel the size of a pizza box in space, designed as a prototype for a future system to send electricity from space back to any point on Earth.

St. Louis Post-Dispatch: Missouri lawmakers again trying to pull plug on wind energy line
Link - Just days after a major winter storm wreaked havoc on a Texas-size chunk of the nation's electrical grid, Missouri lawmakers approved a plan designed to block a company from building a high-voltage electric transmission line across the northern part of the state.

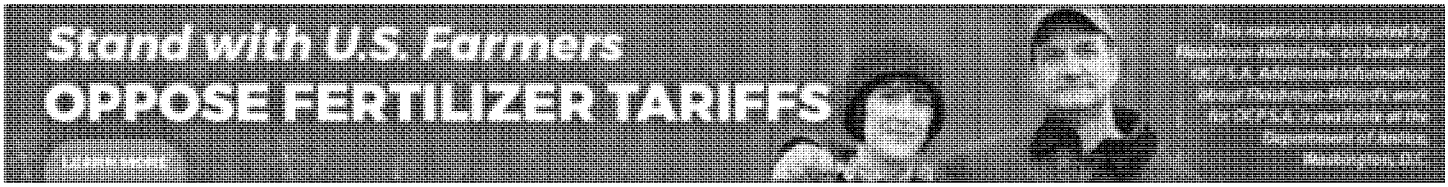


FOOD & NUTRITION

Wichita Eagle: Wichita considers plan to encourage urban farming and reduce food insecurity
Link - The need is profound, said council member Becky Tuttle, who presented the plan to the council Tuesday and has been working on it since before she got in office two years ago.

Chicago Sun-Times: Gov. J.B. Pritzker expands coronavirus pandemic food assistance program
Link - The additional food assistance will come through the state's Pandemic Electronic Benefit Transfer.

oregonlive.com: As federal food box program nears its end, agricultural and anti-hunger groups seek extension
Link - As the Biden administration sets up shop, many policies initiated by its hard-right predecessor are being targeted for extinction. But agricultural groups and anti-hunger organizations are fighting to keep one they've come to depend on, which channels food that might otherwise be plowed under to people reeling under the coronavirus pandemic.



TRADE & INTERNATIONAL

Hellenic Shipping News Worldwide: Huge potential to expand US agriculture exports beyond top markets: USDA official

Link - Agricultural exports from the US have huge possibilities in markets beyond the top importing countries, according to a senior US Department of Agriculture trade official.

Reuters: French government beefs about meat-free school canteens

Link - In the land of coq-au vin, blanquette de veau and boeuf bourguignon, meat-free meals in schools are a sacrilege, as far as some French government ministers are concerned.

DW: How can India reform agriculture after farmer protests?

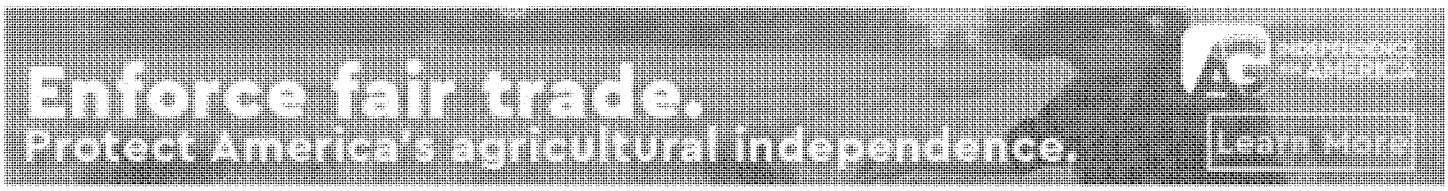
Link - Experts analyze whether reforms proposed by Prime Minister Narendra Modi's government will actually resolve longstanding problems for India's farmers.

E&T News: Faster broadband needed for modern agriculture techniques, UK farmers say

Link - UK farmers have called on the government to improve rural internet connectivity to help them tackle climate change and improve their business models.

The Guardian: Joe Biden's climate envoy admits US and Australia not on 'same page'

Link - John Kerry's comments, including a call for a faster exit from coal power, add to pressure on the Coalition to do more.



LABOR & IMMIGRATION

ZDNet: A trusty robot to carry farms into the future
Link - To feed 10 billion by 2050, the world's farmers will need to increase food production by up to 70%. Bring in the robots.

San Luis Obispo Tribune: More than 200 Central Coast farm workers receive checks in $30,000 unfair labor settlement
Link - More than 200 farmworkers received a piece of an informal settlement from Rancho Laguna Farms LLC on Sunday after an unfair labor practice charge.

Richmond: Deemed essential and at high-risk for COVID, Va. farmworkers are left out of minimum wage laws again by Senate
Link - On Monday, a Democrat-led Senate panel killed a bill that would have included farmworkers in Virginia's minimum wage requirements.

Deseret News: Mitt Romney proposes to raise minimum wage, slow illegal immigration
Link - Mitt Romney is proposing to raise the federal minimum wage to $10 an hour and tie future increases to inflation, while also trying to curb illegal immigration.

JD Supra: Biden's Proposed Legislation Is Next Step Along Immigration Reform Path
Link - The U.S. Citizenship Act of 2021 reflects some of the priorities outlined by the president in an executive order issued on his first day in office.

CONSERVATION & WILDLIFE

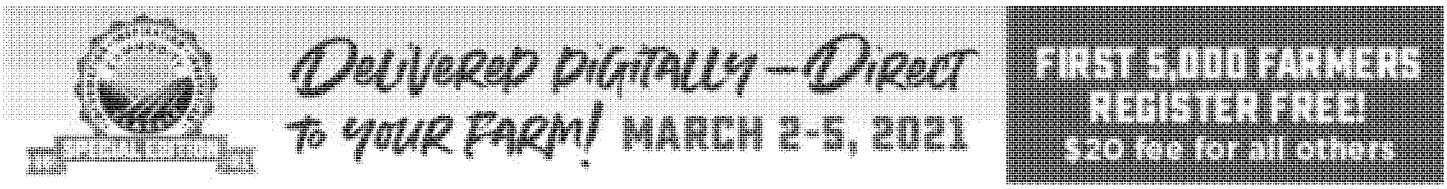
Michigan Advance: Environmentalists make long-shot attempt to ban new factory farms

Link - Activists and some lawmakers say emergency measures are needed to stop toxic algae blooms in Lake Erie, dead zones in the Gulf of Mexico and Chesapeake Bay, and threats to drinking water in rural communities.

The Hill: Judge rejects Biden request for delay in Trump environmental rollback case
Link - A federal court has rejected the Biden administration's request for a pause before a case on a Trump administration rollback of a key environmental law wraps up.

Associated Press: US to urge barriers, elevation to fight NJ back bay flooding
Link - The federal government will recommend flood control measures including storm surge barriers, floodwalls, and elevating homes and other buildings in a report later this year on combating back bay flooding, a major problem in New Jersey that gets comparatively less attention than oceanfront storm surge.

The Washington Post: The battle over climate change is boiling over on the home front
Link - Cities and towns across the country are rewriting local building codes so that new homes and offices would be blocked from using natural gas, a fossil fuel that when burned emits carbon dioxide into the atmosphere.



MISCELLANEOUS

Eater: Black-Owned Farms Are Holding on by a Thread
Link - Racial discrimination has long contributed to the steady decline of Black-owned farms in America, but a movement to grow those numbers may soon be bolstered by real support.

Tech Xplore: Sustainable but smartly: Tackling security and privacy issues in smart agriculture

Link - As communities gradually embrace smart agriculture, it is important to understand how to manage the security and privacy risks associated with the integration of information technology into agriculture.

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Message

From: POLITICO Pro [alert@email.politicopro.com]
Sent: 3/3/2021 3:48:46 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: FedEx will electrify its fleet, pledges carbon neutrality by 2040

FedEx will electrify its fleet, pledges carbon neutrality by 2040

By Catherine Boudreau

03/03/2021 10:15 AM EST

FedEx on Wednesday said its global operations will be carbon neutral by 2040. The company will spend an initial $2 billion to electrify its fleet of vehicles, buy more renewable energy and support research on carbon storage.

By 2040, the global delivery service aims to have an entirely electric vehicle fleet. FedEx has 77,800 vehicles and 679 cargo jets. The company said it will continue to invest in sustainable fuel alternatives to reduce aircraft emissions.

Why it matters: FedEx is the world's largest cargo airline and a major contractor to the federal government.

The $75 billion company has been adding EVs to its fleet for several years, but said it is challenged by a lack of charging infrastructure and a limited number of electricity-powered long-haul trucks.

President Joe Biden in January announced plans to replace the government's fleet of 645,000 cars and trucks with EVs and pour federal dollars into building charging stations across the country as part of his climate agenda.

The fine print: While FedEx can slash emissions from its vehicles and facilities, tackling pollution from its air cargo business will be more difficult.

Electric planes and sustainable fuels are unavailable commercially, so FedEx intends to purchase carbon offsets to meet its neutrality goal.

The company on Wednesday said it will donate $100 million to Yale University to establish a Center for Natural Carbon Capture to research how to store more carbon in the environment.

To view online:
https://subscriber.politicopro.com/sustainability/whiteboard/2021/03/fedex-will-electrify-its-fleet-pledges-carbon-neutrality-by-2040-3987347

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USA

Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 3/5/2021 10:24:59 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: EPA reverses last-minute Trump denial of greenhouse gas petitions

EPA reverses last-minute Trump denial of greenhouse gas petitions

By Alex Guillén

03/05/2021 05:23 PM EST

The EPA this week reversed the last-second denial by the Trump administration of three long-pending petitions seeking greater regulation of greenhouse gases under the Clean Air Act.

The move does not mean the EPA will grant the petitions, but does keep them alive for potential future action as the Biden administration considers more aggressive climate regulations.

Background: The Center for Biological Diversity in 2009 petitioned the EPA to regulate greenhouse gases under the National Ambient Air Quality Standards, the same program that sets limits for pollutants such as particulate matter and ground-level ozone. New York University's Institute for Policy Integrity in 2013 petitioned the EPA to regulate greenhouse gases under Section 115 of the Clean Air Act, a little-used provision that deals with international pollution. And Food & Water Watch in 2019 petitioned the EPA to address greenhouse gases under Section 112, the hazardous air pollutant program.

All three petitions had been pending without answer for years as the Obama administration and the Trump administration focused on regulating stationary sources via Section 111, first through the Clean Power Plan and later the Affordable Clean Energy rule.

Wheeler denials: On his last full day in office, then-Administrator Andrew Wheeler denied all three petitions in a previously unreported action. Those parts of the Clean Air Act are not "well suited" to address the diffuse, global nature of greenhouse gas pollution, Wheeler wrote.

"Congress has the power to craft a comprehensive solution to the problem of greenhouse gas emissions, but such a solution will necessarily involve equitable participation by the other nations that emit significant amounts of GHG," Wheeler wrote at the time. "EPA cannot create such a solution unilaterally, and it has not been given the statutory tools that would be necessary."

Coincidentally, Wheeler's denial came on the same day that the D.C. Circuit Court of Appeals struck down his ACE rule for not fully considering the range of regulatory options under Section 111.

The reversal: The Biden EPA on Thursday withdrew its denial of the petitions, sending similar letters to all three organizations.

"I am withdrawing the denial of your petition, as the agency did not fully and fairly assess the issues raised by the petition," acting Administrator Jane Nishida wrote to CBD. "The EPA intends to further consider the important issues raised by your petition before responding."

The reversal does not necessarily mean the EPA will grant any of the petitions, but Maya Golden-Krasner, deputy director of CBD's Climate Law Institute, said she is hopeful that it indicates the EPA will take the petitions seriously.

"The climate crisis is now much more urgent even than eight years ago, so we think really now this is the best path forward," she said.

The EPA did not immediately return questions about the withdrawals.

Context: All three of the petitions' policy proposals are more legally fraught and logistically complicated than the Section 111 strategy. For example, under a carbon dioxide NAAQS, states would have to craft a plan to reduce emissions within their borders, even though CO2 pollution settles roughly evenly throughout the atmosphere. Section 115 has never been significantly tested, and Section 112 has only been used for pollutants that are direct threats to human health, not pollutants like carbon dioxide that are primarily indirect threats.

But some environmentalists have advocated for such strategies because they offer more comprehensive, economy-wide approaches to reducing greenhouse gases than Section 111. That provision requires separate regulations for each individual industry — for example, power plants, oil and gas production, petrochemicals, cement production, and so on. Each sector would require its own rulemaking taking multiple years, and each is responsible for diminishing portions of U.S. emissions.

To view online:
https://subscriber.politicopro.com/article/2021/03/epa-reverses-last-minute-trump-denial-of-greenhouse-gas-petitions-3987432

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Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/2/2021 8:32:37 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: SIPS Paper is in here : READING: Briefing Materials for Tuesday, February 2, 2021
Attachments: image001.gif; image002.gif; image003.gif; image004.gif; image005.gif; image006.gif; image007.gif; image008.gif; image009.gif; image002.gif; image010.gif; image009.gif; image006.gif; image004.gif; image006.gif; image004.gif; image004.gif; image004.gif; image004.gif; image004.gif; image004.gif; image004.gif; image004.gif; image004.gif; image006.gif; image004.gif; image006.gif; image004.gif; image004.gif; image004.gif; image009.gif; image002.gif; Goffman Joseph Calendar.ics; OAR Overview Presentation_020221.pptx; Pending SIP Actions Paper 1 29 2021 rev.docx

Ann (Campbell) Ferrio
Chief of Staff
Office of Air and Radiation
(202) 566-1370

Begin forwarded message:

From: "Campbell, Ann" <Campbell.Ann@epa.gov>
Date: February 1, 2021 at 6:14:00 PM EST
To: "Goffman, Joseph" <Goffman.Joseph@epa.gov>
Cc: "Carbonell, Tomas" <Carbonell.Tomas@epa.gov>
Subject: READING: Briefing Materials for Tuesday, February 2, 2021

Goffman, Joseph Calendar
Goffman.Joseph@epa.gov
On Tuesday, February 2, 2021
Time zone: (UTC-05:00) Eastern Time (US & Canada)
(Adjusted for Daylight Saving Time)

February 2021

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

Busy

Tentative

Free

Out of Office

Working Elsewhere

Outside of Working Hours

February 2021

Tue, Feb 2

Before 8:00 AM **Free**

8:00 AM – 8:30 AM **Free**

8:30 AM – 9:00 AM Check-In

9:00 AM – 9:15 AM **Free**

9:15 AM – 10:00 AM Air Issues Meeting

10:00 AM – 10:30 AM Management Roundtable

10:30 AM – 11:00 AM Appropriations Language

11:00 AM – 11:45 AM OAR Senior Staff

11:45 AM – 12:30 PM Lunch/Management time

12:30 PM – 1:00 PM FY21 Operating Plan w/ OPMO (materials will be available during meeting)

1:00 PM – 1:30 PM One-on-One with Tomas Carbonell

1:30 PM – 2:15 PM OTAQ Weekly

2:15 PM – 3:15 PM Briefing: OAR Overview (materials attached)

3:15 PM – 3:30 PM Free

3:30 PM – 4:15 PM Recently signed/pending regional state implementation plan actions (materials attached)

4:15 PM – 4:30 PM Free

4:30 PM – 5:00 PM General Discussion

5:00 PM – 5:30 PM Management Time

5:30 PM – 6:00 PM Cars Working Group

After 6:00 PM Free

Ann (Campbell) Ferrio
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Message

From: POLITICO Pro [alert@email.politicopro.com]
Sent: 2/16/2021 10:03:08 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Carbon tax chatter returns to shake up climate politics

Carbon tax chatter returns to shake up climate politics

By Zack Colman

02/16/2021 05:00 AM EST

The Biden administration has revived the idea of taxing carbon emissions to combat climate change and Congress quietly is crafting legislation to deliver.

But as with anything related to a carbon tax or fee, the politics are tricky. Progressives are deriding the concept as too market-based to adequately reduce emissions, and free-market Republicans have yet to embrace a plan that would raise fossil fuel prices.

For any legislation to have a chance, Democrats first will have to close fissures in their own ranks. Progressives have soured on carbon pricing after ballot box losses in liberal locations. Fossil fuel defenders on the party's right — Sen. Joe Manchin of West Virginia in particular — aren't budging from their opposition.

"We are all trying to assess the current state of climate politics and what is possible this year," said Alex Flint, executive director of the Alliance for Market Solutions, a group of conservative leaders who support a revenue-neutral carbon tax.

President Joe Biden has thrown down his marker. His campaign platform included an "enforcement mechanism" for reducing emissions, which many interpreted as a carbon tax. Treasury Secretary Janet Yellen has endorsed a tax. White House climate envoy John Kerry and domestic climate chief Gina McCarthy both say a tax is on the table.

In a nod to political sensitivities, Biden officials also endorse a more generic carbon "price," a term which covers an array of options such as cap and trade, and could be included alongside a clean electricity standard that sets requirements for renewable energy.

The president will want to make a splashy commitment on the international stage, possibly at his April 22 summit of world climate leaders. And the EU and U.K. are advancing carbon tariffs linked to pricing schemes, raising urgent questions of how the U.S. will align with those systems.

But on Capitol Hill, where climate negotiations are just getting underway, Democrats worry that the White House will prematurely issue its own specific proposals and upset fragile legislative consensus-building.

"I just don't think he will be as successful if he tries to cook up a climate bill in the opening months of his administration and then present it to Congress. I think it becomes a target at that point," Sen. Sheldon Whitehouse (D-R.I.), a carbon price supporter, said in an interview. "If at some point it looks like we're going to fail, then they can always step in."

There are tripwires on both sides of the aisle.

Senate Budget Committee Chair Sen. Bernie Sanders' (I-Vt.) shifting stance on carbon pricing could foreshadow the type of problems Democrats will have in writing a plan that wins the support of progressives. Sanders had campaigned for president in 2016 on a carbon tax, but those proposals were notably absent during his 2020 run after it fell out of favor with the left.

But Sanders never wholly ditched the idea — his campaign website still calls for "fees" on fossil fuel pollution — and it remains a potential policy tool. Green New Deal co-author Rep. Alexandria Ocasio-Cortez (D-N.Y.) has said a tax can be part of climate legislation.

Whitehouse said some Republicans have told him they could support carbon pricing, but would need strong public backing from corporate leaders before breaking from party orthodoxy to endorse a new tax.

Trade groups that have long been aligned with Republicans, including the U.S. Chamber of Commerce, American Petroleum Institute and Business Roundtable, have endorsed a loosely defined "market-based" mechanism for dealing with emissions.

While carbon tax supporters have talked about a "jailbreak moment" with Republicans, they've had little tangible success, said Mike Palicz, federal affairs manager with Americans for Tax Reform, a small-government group that's influential in GOP circles. During a marathon round of votes on the coronavirus relief bill earlier this month, all 50 Republican senators voted for a resolution opposing a carbon tax.

Palicz said there's political risk in pushing policies that would raise energy costs, especially during an economic slowdown. Imposing a tax that would touch nearly every American would be out of step with Biden's attempt to present himself as an ally to working-class families, he said.

"During the election, this is something Biden tried his best to run away from," Palicz said. "Since day one [in office], he has clearly taken steps that are not aligned with that."

And Democrats as a whole don't see eye-to-eye with the business groups and think tanks that are nudging tax-curious Republicans to embrace carbon pricing. Any carbon tax bill is likely to be packed with spending — such as money for electric vehicles and to help pollution-stricken communities — that progressives will demand in exchange for their support.

"We've made it clear to all of our colleagues that in order to have [a carbon price], it can't be the only thing," said a Democratic aide with the Senate Budget Committee. "In the past, the folks who may have been advocating for a price on carbon have made me feel that is the end-all, be-all, and I'm no longer hearing a carbon tax is an end-all, be-all."

Progressives' wariness of a carbon tax stems from fears that not only is it too modest a move to reduce emissions, but that it fails to address pollution that disproportionately affects low-income and communities of color.

Those environmental justice concerns have gained traction nationally in recent years, and Biden has put them at the center of his climate and environment platform.

"You have to evaluate [a carbon fee] as to the impact and the history that it's had with [environmental justice] communities. And it's not always been good, to say the least," House Natural Resources Chair Raúl Grijalva (D-Ariz.) said in an interview.

A carbon tax bill sweetened with goodies to attract the reluctant left could come at the expense of Republicans who are more likely to be swayed by the economic argument that a simple fee is more efficient and provides more certainty to industry.

"I don't think anyone could tell you what the outcome looks like if that's the path that they go down," said Joseph Majkut, director of climate policy with the Niskanen Center, which supports a carbon tax.

Winning at least a few Republican votes could be key. Manchin, chair of the Senate Energy and Natural Resources Committee, on Feb. 4 said he was, "right now, no," on a carbon tax. Sen. Kyrsten Sinema (D-Ariz.), as a member of the House in 2018, was one of seven Democrats who voted in favor of a resolution H. Con. Res. 119 (115), declaring carbon taxing "detrimental" to the economy.

Neither Manchin nor Sinema have weighed in on an emerging alternative, a clean energy standard that would require a percentage of retail electricity sales to come from non- or low-emitting sources. That approach would affect the power sector and leave emissions from transportation — the nation's largest contributor to greenhouse gases — untouched.

Rep. Paul Tonko (D-N.Y.), chair of the House Energy and Commerce subcommittee responsible for climate policy and a supporter of economy-wide carbon pricing, said he wouldn't rule out other options, such as a clean energy standard.

"We need to make certain that we can pass whatever ideas we bring forward, and we're going to do that with public sentiment behind us," he told reporters.

Senate Democratic aides said they have had initial discussions with Republican offices on a clean energy standard and received few hard nos. They note the policy has received bipartisan support in prior years, notably Sen. Lindsey Graham's (R-S.C.) Clean Energy Standard Act S20 from 2010.

They also point to a National Academies of Sciences report this month that endorsed both policies in pursuit of reaching net-zero carbon emissions by 2050.

"We need to work through those ways and find the way that works best and can pass into law and point us towards 1.5 degrees" Celsius, Whitehouse said.

Anthony Adragna contributed to this report.

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https://subscriber.politicopro.com/energy/article/2021/02/carbon-tax-chatter-returns-to-shake-up-climate-politics-2035670

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Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/4/2021 5:26:44 PM
To: Weekly Report Group [Weekly_Report_Group@epa.gov]
CC: Shaw, Betsy [Shaw.Betsy@epa.gov]; DeLuca, Isabel [DeLuca.Isabel@epa.gov]; Millett, John [Millett.John@epa.gov]; Rakosnik, Delaney [rakosnik.delaney@epa.gov]; Clarke, Deirdre [clarke.deirdre@epa.gov]; Burch, Julia [Burch.Julia@epa.gov]; Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Haman, Patricia [Haman.Patricia@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Spenillo, Justin [Spenillo.Justin@epa.gov]; Shoaff, John [Shoaff.John@epa.gov]; Thundiyil, Karen [Thundiyil.Karen@epa.gov]; Dunham, Sarah [Dunham.Sarah@epa.gov]; Morgan, Ruthw [morgan.ruthw@epa.gov]; Edwards, Jonathan [Edwards.Jonathan@epa.gov]; Cherepy, Andrea [Cherepy.Andrea@epa.gov]; Kocchi, Suzanne [Kocchi.Suzanne@epa.gov]; Koerber, Mike [Koerber.Mike@epa.gov]; Sandfoss, Kristina [Sandfoss.Kristina@epa.gov]; Senter, Stephen [Senter.Stephen@epa.gov]; Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]
Subject: OAR Weekly Report

Please find below, OAR's report for the week ending February 5, 2021. Thank you. Be well.

Hot Topics

- **Packages for Signature:**
  - Revision to Minnesota Taconite Federal Implementation Plan for U.S. Steel Minntac (Final Rule)

- **Packages at OMB for Review:**

- **Packages Heading to OMB Soon**
  - Cross-State Air Pollution Rule Update Rule (Final Rule)

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Ann (Campbell) Ferrio
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Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/9/2021 1:12:18 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Carbonell, Tomas [Carbonell.Tomas@epa.gov]
Subject: FOR YOUR SIGNATURE: SAN# 7778 Document for Administrator Signature - Revision to MN Taconite FIP for U.S. Steel Minntac' Final Rule CMS# OAR-21-000-1310
Attachments: SAN-7778_MN_Minntac_2020_FIP_NFR_Region 5_typeset.pdf; SAN-7778_MN_Minntac_2020_FIP_NFR_Action-Info-Memo.pdf; ActionMemo_MN_Minntac_2020_FIP_R5-signed.pdf; SAN-7778_MN_Minntac_2020_FIP_NFR_admin (002).docx

Importance: High

Joe, attached is one of 2 actions within the grouping of 72 that you approved last week that will required the Administrator to re-sign. Please DIGITALLY sign the actions memo (ActionMemo_MN_Minntac_2020_FIP_R5-signed.PDF) using the instructions below. Once signed, please send back to me. If you have any trouble, let me know.

Directions: For multiple signatures, the pdf should be saved onto your hard drive, reopen your saved document, select the tool icon on the right side, select certificates, and then up on the top tool bar, there should be a digital signature option. Select that option and it will ask for you to click and drag a signature box next to your name on the memo and you can proceed to sign the document. The document will then prompt you to save again.

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

From: Mcquilkin, Wendy <Mcquilkin.Wendy@epa.gov>
Sent: Monday, February 8, 2021 2:14 PM
To: Campbell, Ann <Campbell.Ann@epa.gov>
Cc: Panos, Christos <Panos.Christos@epa.gov>; Gaines, Cynthia <Gaines.Cynthia@epa.gov>; Lubetsky, Jonathan <Lubetsky.Jonathan@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>; Manibusan, Mary <Manibusan.Mary@epa.gov>; Brown, Stephanie N. <Brown.StephanieN@epa.gov>; Muellerleile, Caryn <Muellerleile.Caryn@epa.gov>; Pritchard, Eileen <Pritchard.Eileen@epa.gov>; Morris, Stephanie <Morris.Stephanie@epa.gov>; Brooks, Patricia <Brooks.Patricia@epa.gov>; Sandfoss, Kristina <Sandfoss.Kristina@epa.gov>; Millett, John <Millett.John@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Hamilton, Sabrina <Hamilton.Sabrina@epa.gov>; Carroll, Maria <carroll.maria@epa.gov>; Faulkner, Martha <Faulkner.Martha@epa.gov>; Shaw, Betsy <Shaw.Betsy@epa.gov>; Morgan, Ruthw <morgan.ruthw@epa.gov>; Kramer, Melissa <Kramer.Melissa@epa.gov>; Adams, Darryl <Adams.Darryl@epa.gov>
Subject: SAN# 7778 Document for Administrator Signature - Revision to MN Taconite FIP for U.S. Steel Minntac' Final Rule CMS# OAR-21-000-1310
Importance: High

SAN#7778

TO: THE IMMEDIATE OFFICE FOR REVIEW AND CONCURRENCE FOR THE ADMINISTRATOR'S SIGNATURE.

Region 5 POC - Chris Panos 312-353-8328

Wendy

Wendy Mcquilkin
USEPA - OAR/OAPPS
1200 Pennsylvania Ave, NW
Washington, DC 20460
Rm 5442S WJC North – MC 6103A
(202) 564-1348
Prejudice is a burden that confuses the past, threatens the future and renders the present inaccessible – Dr. Maya Angelou

Message

From: Kim, Eun [Kim.Eun@epa.gov]
Sent: 3/16/2021 9:32:00 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Campbell, Ann [Campbell.Ann@epa.gov]
Subject: READING: Materials for Wednesday, March 17, 2021
Attachments: Aircraft Programs draft 3 17 21.pptx; All-hands for IO, OAPPS & OPMO

Goffman, Joseph Calendar
Goffman.Joseph@epa.gov
On Wednesday, March 17, 2021
Time zone: (UTC-05:00) Eastern Time (US & Canada)
(Adjusted for Daylight Saving Time)

March 2021

Su	Mo	Tu	We	Th	Fr	Sa
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21	22	23	24	25	26	27
28	29	30	31			

Busy | Tentative | Free
Out of Office | Working Elsewhere | Outside of Working Hours

March 2021

Wed, Mar 17

Before 8:00 AM	**Free**
8:00 AM – 9:00 AM	**Free**
9:00 AM – 9:30 AM	Management Roundtable
9:30 AM – 10:00 AM	Air Issues Meeting
9:30 AM – 10:00 AM	Administrator Documents and Information Flow
10:00 AM – 10:30 AM	One-on-One with Jon Edwards
10:30 AM – 11:30 AM	Briefing on OIG's draft report on the SAFE 2 audit
11:30 AM – 12:00 PM	**Free**
12:00 PM – 1:00 PM	All-hands for IO, OAPPS & OPMO (email attached with pdf)
12:30 PM – 1:30 PM	Lunch Hour 'Wednesday Walk and Talk'
1:00 PM – 1:45 PM	Aircraft Planning (materials attached, 1 ppt)
1:45 PM – 2:00 PM	**Free**

■	2:00 PM – 2:40 PM	ECOS: Roundtable & Open Discussion: Innovative Policy Approaches to Greenhouse Gas Reduction
■	2:40 PM – 3:20 PM	ECOS: Roundtable & Open Discussion: Groundbreaking Partnerships for Methane Reduction
□	**3:20 PM – 3:25 PM**	**Free**
■	3:25 PM – 3:55 PM	General Discussion with Bob Hahn
■	3:55 PM – 4:35 PM	ECOS: Roundtable & Open Discussion: Environmental Equity – Getting to Know Our Communities & Recognize Disparities
■	4:35 PM – 5:00 PM	ECOS: Keynote Presentation followed by Q&A: The Honorable Tom Carper (D-DE), Chairman, Senate Environment & Public Works Committee
■	5:00 PM – 6:00 PM	Cars Working Group
□	**After 6:00 PM**	**Free**

Eunjung Kim
Special Assistant
Office of Air and Radiation
(202) 815-7252

Message

From: E&E News [ealerts@eenews.net]
Sent: 3/11/2021 12:39:13 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: March 11 -- Energywire is ready

Energywire -- The Transformation of the Energy Sector

Read today's Energywire on the web

ENERGYWIRE

AN E&E NEWS PUBLICATION

ENERGYWIRE — Thu., March 11, 2021

READ FULL EDITION

1. TEXAS BLACKOUTS:

10 ways to fix the power grid

Texas is weighing everything from renewable policy changes to a natural gas overhaul to prevent another blackout crisis. The outcome could have national implications as officials across the country weigh how to prepare the grid for heat waves, cold snaps and hurricane-driven floods.

A message from POLITICO:

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TOP STORIES

2. ELECTRIC VEHICLES:

First U.S. gas station ban sparks battle

3. ENERGY TRANSITIONS:

Ohio reverses course, repeals $1B in nuclear subsidies

4. PUBLIC LANDS:

Feds: Biden oil plan to have 'no effects' in 2021

CONGRESS

5. CLIMATE:

Clean energy standards get boost in Congress

6. CYBERSECURITY:

Feds dodged huge email hack, officials tell lawmakers

FEDERAL AGENCIES

7. NATURAL GAS:

Groups urge FERC to shutter Puerto Rico LNG terminal

LAW

8. PUBLIC LANDS:

Energy firm drops lawsuit over delayed BLM oil permits

ELECTRICITY

9. ENERGY POLICY:

Lawsuits expected over Mexican law on power generation

10. RHODE ISLAND:

PUC gets new member despite reservations by some lawmakers

11. TURKEY:

Erdoğan, Putin remotely start nuclear reactor construction

OIL AND GAS

12. SECURITY:

Saudi Arabia vows to guard oil facilities after drone strike

A message from POLITICO:

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Energywire is written and produced by E&E News, which is staffed by a dedicated reporting team within the POLITICO newsroom. Energywire brings readers deep, broad and insightful coverage of the transformation of the energy sector. Energywire focuses on the business, environmental and political issues surrounding the rapidly

changing energy industry and the numerous factors -- from expanding natural gas use to renewables and more -- that are altering the traditional electric utility industry. Energywire publishes daily by 8:00 a.m.

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From: E&E News [ealerts@eenews.net]
Sent: 2/9/2021 12:42:58 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: February 9 -- Energywire is ready

Energywire -- The Transformation of the Energy Sector

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ENERGYWIRE

AN E&E NEWS PUBLICATION

ENERGYWIRE — Tue., February 9, 2021

READ FULL EDITION

1. POLITICS:
Biden's clean energy plan: Job creator or killer?

Climate envoy John Kerry recently raised the hackles of the oil and gas sector by suggesting displaced fossil fuel workers pivot to installing solar panels. Does the Biden administration have a workable plan?

TOP STORIES

2. CYBERSECURITY:
'What nightmares are made of.' Hackers hit Fla. water supply

3. ENERGY TRANSITIONS:
3 oil and gas battles to watch

4. OIL AND GAS:
Court greenlights embattled Minn. pipeline

FEDERAL AGENCIES

5. TRANSITION:
Biden taps ex-EPA, Hill staffer as chief of pipeline agency

ENERGY TRANSITIONS

6. POLITICS:
Groups launch campaigns for 100% clean energy

ELECTRICITY

7. ELECTRIC VEHICLES:
Tesla buys $1.5B in Bitcoin, will accept as payment soon

8. EUROPE:

Norway overtakes France as biggest electricity exporter

9. NUCLEAR:

Ohio lawmaker reintroduces state bill to repeal bailout

OIL AND GAS

10. BUSINESS:

Turkey oil firm weighs partners for $3.2B gas project

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From: E&E News [ealerts@eenews.net]
Sent: 3/10/2021 6:36:56 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: March 10 -- Greenwire is ready

Greenwire -- The Leader in Energy and Environment News

Read today's Greenwire on the web

GREENWIRE

AN E&E NEWS PUBLICATION

GREENWIRE — Wed., March 10, 2021

READ FULL EDITION

1. NOMINATIONS:

McConnell to vote 'no' on Regan, Haaland

Senate Minority Leader Mitch McConnell (R-Ky.) will oppose Michael Regan to lead EPA and Rep. Deb Haaland to lead the Interior Department, distinguishing them from others of President Biden's picks as being "outside the mainstream."

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TOP STORIES

2. INTERIOR:

Exiled official helps BLM review Trump 'structural changes'

3. INTERIOR:

Judge: Zinke's missing phone log 'defies credulity'

4. PUBLIC HEALTH:

'Forever chemicals' found in D.C.-area tap water

POLITICS

5. ENERGY POLICY:

Report: DOE, FERC need better planning on climate threats

CONGRESS

6. NOMINATIONS:

Abortion concerns dent GOP support for OMB nominee

7. OIL AND GAS:

N.M. Democrats ask Biden to resume leasing

NATURAL RESOURCES

8. FOREST SERVICE:

Greens push grazing reform, say cows destroy fragile lands

9. NATIONAL PARKS:

Alcatraz Island breaks free from lockdown

10. ENDANGERED SPECIES:

First whooping crane hatched at Wis. foundation dies at 38

LAW

11. DRINKING WATER:

Lawyers seek 32% of $641M Flint settlement

12. CHEMICALS:

Maine man sues paper mill over PFAS levels in wells

FEDERAL AGENCIES

13. EPA:

Watchdog uncovers mismanagement of IT contracts

14. EPA:

Email to staff: Report pandemic-related discrimination

STATES

15. NEW MEXICO:

Clean fuel proposal gets green light from Senate panel

16. HAWAII:

Town north of Honolulu evacuated as stream floods

17. WASHINGTON:

Bill to create fund to battle wildfires passes state House

18. SOUTH CAROLINA:

Dirty feeders could be contributing to bird deaths

INTERNATIONAL

19. NICARAGUA:

San Cristobal volcano erupts, showering ash on city

A message from POLITICO:

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Greenwire is written and produced by E&E News, which is staffed by a dedicated reporting team within the POLITICO newsroom. It's the one-stop source for those who need to stay on top of all of today's major energy and environmental action with an average of more than 20 stories a day. Greenwire covers a complete spectrum of issues, from energy policy to Clean Air Act litigation to public lands management. Greenwire publishes daily by 1:30 p.m.

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From: E&E News [ealerts@eenews.net]
Sent: 3/11/2021 12:20:43 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: March 11 -- E&E Daily is ready

E&E Daily -- Congress. Legislation. Politics.

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E&E DAILY

AN E&E NEWS PUBLICATION

E&E DAILY — Thu., March 11, 2021

READ FULL EDITION

1. AGENDA:

Senators strike early bipartisan tone on infrastructure

Senators are offering early optimism they can find common ground to pass an infrastructure package later this year as Democrats and the president prepare to announce the next steps in their agenda.

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TOP STORIES

2. CLIMATE:

Clean energy standards get boost as EPW eyes infrastructure

3. ENERGY POLICY:

Wyden says tax 'reset' within reach, but Manchin has concerns

4. EPA:

Lawmakers debate agency's future as new leader takes over

TRANSITION

5. INTERIOR:

Partisan vote increasingly likely for Haaland confirmation

6. NOMINATIONS:

Some Republicans sour on Shalanda Young for OMB

7. NOMINATIONS:

Commerce pick addresses forecasting, fisheries concerns

ON THE HILL

8. COAL:

Appalachian lawmakers step up fight for mine reclamation

9. WATER INFRASTRUCTURE:

Kaptur blasts Army Corps for 'utter failure' in dredge fiasco

10. CLIMATE:

Top Senate Democrat introduces carbon fee legislation

11. TRIBES:

Committee seeks to engage Indian Country on climate

IN COMMITTEE

12. POLITICS:

Blinken looks to reassure lawmakers on Nord Stream 2

13. NATURAL GAS:

Ore. Democrats push bills to empower landowners

14. TRANSPORTATION:

Rail boosters ask lawmakers for parity with cars, trucks

15. SECURITY:

Feds dodged huge email hack, officials tell lawmakers

16. PEOPLE:

Trump Interior official takes House water post

UPCOMING HEARINGS AND MARKUPS

17. CALENDAR:

Activity for March 8 - March 14, 2021

A message from POLITICO:

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From: E&E News [ealerts@eenews.net]
Sent: 2/9/2021 12:15:33 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: February 9 -- Climatewire is ready

Climatewire -- Policy. Science. Business.

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CLIMATEWIRE

AN E&E NEWS PUBLICATION

CLIMATEWIRE — Tue., February 9, 2021

READ FULL EDITION

1. WHITE HOUSE:
CEQ adds staffers with agency, Hill and academic chops

President Biden is adding senior staffers to the Council on Environmental Quality, a nerve center in the White House that coordinates policy across the government.

TOP STORIES

2. TRANSITION:
Biden won't revive Obama's Clean Power Plan. So now what?

3. WHITE HOUSE:
Meet Biden's environmental justice champion

4. TRANSITION:
Kerry, Yellen meet to chart course on climate finance

CLIMATE IMPACTS

5. RESILIENCE:
Climate is threatening the Colorado Basin. Here's one fix

INTERNATIONAL

6. UNITED NATIONS:
Guterres: Polluters must join 'net zero' club for climate

IN THE STATES

7. LOUISIANA:
State restocks lake hit by hurricane-sparked fish kills

8. MASSACHUSETTS:

Governor returns amended climate bill to lawmakers

9. ARIZONA:

Forecasters: Gird for above-normal wildfire threats

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Message

From: Enos, Kendra [Enos.Kendra@epa.gov]
Sent: 2/11/2021 10:03:10 PM
To: AO OPA OMR CLIPS [AO_OPA_OMR_CLIPS@epa.gov]
Subject: Daily News Clips: Afternoon Edition 2-11-21

Daily News Clips: Afternoon Edition
February 11th, 2021
Air
Shell pays $191K fine for 2015 Puget Sound refinery incident
Chemicals
EPA to Amazon: Stop Selling Illegal Pesticides
Emission
D.C. Circuit Stays Litigation over EPA Rescission of California Waiver to Regulate Vehicle Emissions
EPA sued by environmental groups over Trump-era smog rule
U.S. forestry lands represents largest carbon sink while more can be done by agricultural sector to sequester carbon.
Pollution
EPA Under Fire for Putting Ozone Fight on Back Burner
Water
EPA Announces Clean Water Act Settlement with Fleur de Lis

Air
Shell pays $191K fine for 2015 Puget Sound refinery incident
https://www.opb.org/article/2021/02/11/shell-puget-sound-refinery-incident-penalty/

By Staff (AP)
MOUNT VERNON, Wash. Feb. 11, 2021 3:35 p.m.
Shell Oil Products U.S. has paid a $191,000 fine for the release of pollutants from its Shell Puget Sound Refinery north of Seattle in Skagit County.

The fine comes via a legal settlement with the U.S. Environmental Protection Agency to resolve federal Clean Air Act violations, The Skagit Valley Herald reported.

During refinery maintenance on Feb. 20, 2015, several operating procedures were violated, resulting in the release of about 700 pounds of pollutants. Hydrogen sulfide, dimethyl sulfide, mercaptans, pyrophoric iron and benzene were released over a period of more than three hours.

The emissions sickened many in surrounding areas, including on the Swinomish Indian Tribal Community reservation to the south, and some sought medical attention.

The settlement agreement, filed in late 2020, says more than 550 people on the reservation and in surrounding areas were impacted by the emissions with some reporting symptoms from coughing to nausea, headaches, chest and lung pains.

"The health of the Swinomish Tribal Community is my top priority, and that starts with ensuring we all have clean air to breathe," Swinomish Tribal Chairman Steve Edwards said in a news release welcoming the fine. "We are glad to see the EPA take action to hold Shell Oil accountable for its violations of air pollution laws."

Shell has also corrected issues with its risk management plan and implementation to prevent, detect and minimize accidental air emissions, according to a Wednesday EPA news release.

With previous fines paid to the Northwest Clean Air Agency and the Washington Safety and Health Agency, Shell has now paid about $600,000 for the incident.

A more recent emissions incident, on Sept. 29, 2020, remains under investigation by the Northwest Clean Air Agency.

Chemicals

EPA to Amazon: Stop Selling Illegal Pesticides
https://www.ecowatch.com/epa-amazon-illegal-pesticides-2650487266.html?rebelltitem=1#rebelltitem1

Olivia Rosane Feb. 11, 2021
For the third time in three years, the U.S. The Environmental Protection Agency (EPA) has ordered Amazon to stop selling illegal pesticides.

The EPA's Seattle office announced Tuesday that it had presented the online retailer with a "stop sale" order targeting products that were unregistered and potentially dangerous or ineffective. Some of them made false or misleading claims that they offered protection against viruses.

"Unregistered pesticides in the e-commerce marketplace pose a significant and immediate health risk to consumers, children, pets, and others exposed to the products," Ed Kowalski, director of the Enforcement Compliance Assurance Division in EPA's Region 10 office in Seattle, said in the announcement.

The EPA sent the latest order to Amazon on Jan. 7, The Seattle Times reported. The order added 70 products to a June 2020 stop sale order that targeted more than 30 products. The new products include items marketed to clean homes and pools, bracelets claiming to repel mosquitoes and several products promising to kill viruses, The Seattle Times reported.

"We have no idea what those products are made of," Chad Schulze, the EPA's pesticide enforcement lead in Seattle, told The Seattle Times. "And when you have people purchasing a product that says it will kill or control viruses in their personal space but it does not, that's a huge risk as well."

Since the stop sale order was issued in January, Amazon has removed the products from its website, a spokesperson for the company told The Seattle Times. However, the online sale of unregistered pesticides is an ongoing problem.

All pesticides sold in the U.S. are supposed to be registered with the EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the agency explained in its June stop sale order. The registration process allows the EPA to ensure all pesticides for sale are safe and do what they say they will do.

Between 2013 and 2018, the EPA claimed that Amazon violated FIFRA almost 4,000 times, The Seattle Times reported. Amazon reached a settlement with the agency over these violations and said it would take steps to reduce the number of illegal pesticides sold on its platforms. Since then, the problem has decreased, but it has not disappeared.

"Is [Amazon] perfect? Is it stopping everything we need them to stop?" Schulze asked in The Seattle Times. "No."

For example, one of the products targeted by the June order was labeled "Amazon's Choice," signaling the company's endorsement.

While Schulze said other e-commerce sites were worse, Amazon is the largest in the U.S. It has almost 300 million customers and offers more than 350 million products, according to the EPA.

Any pesticide or disinfectant that meets FIFRA requirements will have an EPA registration and establishment number, the agency said.

"The agency advises consumers who have purchased an unregistered pesticide product or a misbranded pesticidal device to safely dispose of it in accordance with local, state, and federal laws," the EPA advised. "This is especially important for consumers seeking to protect against SARS-CoV-2, the virus that causes COVID-19."

Anyone looking for safe and effective protection against the new virus can look at the EPA's list of products here.

Emissions

D.C. Circuit Stays Litigation over EPA Rescission of California Waiver to Regulate Vehicle Emissions
https://www.jdsupra.com/legalnews/d-c-circuit-stays-litigation-over-epa-1845485/

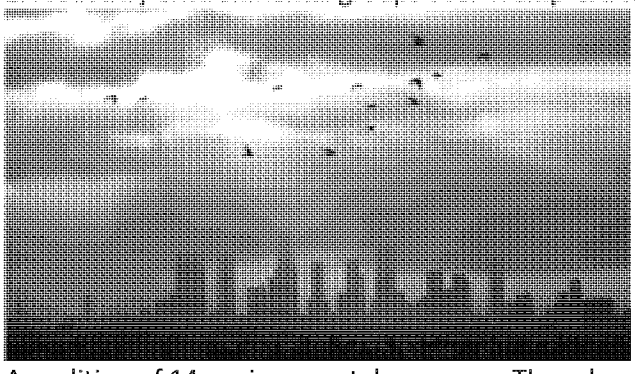
On February 8, 2021, the D.C. Circuit issued an order granting the Biden administration's motion to stay litigation over Part 1 of the Trump-era Safer Affordable Fuel Efficient Vehicles (SAFE) Rule. The order was issued in *Union of Concerned Scientists v. NHTSA* (No. 19-1230) and consolidated cases. As detailed in our earlier alerts, Part 1 of the SAFE Rule rescinded the waiver EPA granted California to regulate vehicle greenhouse gas emissions and to implement a zero-emission vehicle program. Part 2 of the SAFE Rule finalized new standards for corporate average fuel economy (CAFE) and carbon dioxide emissions for passenger vehicles and light-duty trucks sold from model years 2021 through 2026. This stay is one of the first of many that will likely be requested by the Biden administration in litigation challenging Trump-era rules. Consistent with President Biden's executive order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, EPA and NHTSA are now evaluating whether and how to replace the SAFE Rule. Stakeholders should watch for the Biden administration to seek to stay other legal challenges to the SAFE rule and move expeditiously on a replacement rule.
[View source.]

Emissions

EPA sued by environmental groups over Trump-era smog rule
https://thehill.com/policy/energy-environment/538486-epa-sued-over-trump-era-smog-rule

BY REBECCA BEITSCH - 02/11/21 03:34 PM EST

EPA sued by environmental groups over Trump-era smog rule



A coalition of 14 environmental groups on Thursday sued the Environmental Protection Agency (EPA) to challenge the Trump administration's decision to not pursue tougher smog standards.

The rule finalized in late December kept the Obama-era air quality standard for ozone, the main component of smog, at 70 parts per billion (ppb). Administrations typically tighten the standards when they are updated every five years.

"The Trump administration corrupted and rushed the scientific review process of this rule as it walked out the door, just so industrial polluters can sit and do nothing for the harm they cause," Seth Johnson, lead Earthjustice attorney on the case, said in a statement.

"These outdated ozone standards must be corrected not just for children's safety and public health, but also because they are critical to addressing the climate crisis."

The Natural Resources Defense Council, Sierra Club and the Environmental Defense Fund were among the groups joining the suit. Fifteen states previously sued over the rule.

While ozone provides protection in the stratosphere, ground-level ozone can cause asthma attacks and other respiratory problems.

In finalizing the rule, the EPA said the move was part of an effort to streamline regulations.

"This decision fulfills the Trump administration's promise to streamline the [National Ambient Air Quality Standards] review process," now-former EPA Administrator Andrew Wheeler said at the time.

Since President Biden took office, the EPA has hinted that it might pursue a change in direction on air quality standards.

"The agency's new leadership is committed to moving forward to fulfill the Biden-Harris Administration's priorities of protecting public health and the environment, tackling the climate crisis and air pollution, advancing environmental justice, restoring science, and building back better. Because this is potential litigation, EPA has no additional information to share," an agency spokesperson said by email.

The EPA last month asked the Justice Department to seek a pause in all cases where litigants were challenging Trump-era policies, giving the new administration a chance to reverse course and pledge to issue new regulations.

Emissions

U.S. forestry lands represents largest carbon sink while more can be done by agricultural sector to sequester carbon.
https://www.farmprogress.com/regulatory/ag-industry-contributes-10-overall-ghg-emissions

Jacqui Fatka | Feb 11, 2021

Greenhouse gas emissions from agriculture account for 9.9% of total U.S. greenhouse gas emissions and come from livestock such as cows, agricultural soils and rice production, according to the latest update for the 2018 year. A new analysis of Environmental Protection Agency data highlights agricultural emissions reductions and the importance of developing new research and technologies to capture more carbon in cropland and pastureland.

EPA tracks total U.S. emissions by publishing the Inventory of U.S. Greenhouse Gas Emissions and Sinks. This annual report estimates the total national greenhouse gas emissions and removals associated with human activities across the United States. The report reveals that U.S. carbon sinks offset 12% of U.S. greenhouse gas emissions and sequestered 764 million metric tons during 2018. The largest carbon sink involved U.S. forestry lands.

Emissions increased from 2017 to 2018 by 3.1% (after accounting for sequestration from the land sector). This increase was largely driven by an increase in emissions from fossil fuel combustion, which was a result of multiple factors, including more electricity use from greater heating and cooling needs due to a colder winter and hotter summer in 2018 in comparison to 2017.

Greenhouse gas emissions in 2018 (after accounting for sequestration from the land sector) were 10.2% below 2005 levels.

Various management practices on agricultural soils can lead to increased availability of nitrogen in the soil and result in emissions of nitrous oxide (N_2O). Specific activities that contribute to N_2O emissions from agricultural lands include the application of synthetic and organic fertilizers, the growth of nitrogen-fixing crops, the drainage of organic soils and

irrigation practices. Management of agricultural soils accounts for just over half of the N2O emissions from the agriculture economic sector.

Livestock, especially ruminants such as cattle, produce methane (CH4) as part of their normal digestive processes. This process is called enteric fermentation, and it represents over a quarter of the emissions from the agriculture economic sector. The way in which manure from livestock is managed also contributes to CH4 and N2O emissions. Different manure treatment and storage methods affect how much of these greenhouse gases are produced. Manure management accounts for about 12% of the total greenhouse gas emissions from the Agriculture economic sector in the United States.

In 2018, greenhouse gas emissions from the agriculture economic sector accounted for 9.9% of total U.S. greenhouse gas emissions. Greenhouse gas emissions from agriculture have increased by 10.1% since 1990. Drivers for this increase include a 7% increase in N2O from management of soils, along with a 58.7% growth in combined CH4 and N2O emissions from livestock manure management systems, reflecting the increased use of emission-intensive liquid systems over this time period.

Reducing emissions

In the United States overall, since 1990, Land Use, Land-Use Change, and Forestry (LULUCF) activities have resulted in more removal of CO2 from the atmosphere than emissions. Because of this, the LULUCF sector in the United States is considered a net sink, rather than a source, of CO2 over this time-period. In many areas of the world, the opposite is true, particularly in countries where large areas of forest land are cleared, often for conversion to agricultural purposes or for settlements. In these situations, the LULUCF sector can be a net source of greenhouse gas emissions, the EPA notes.

To offset GHG emissions and reduce atmospheric CO2, carbon can be trapped in soils through various carbon sink activities such as the growth of trees, forestry management that reduces forest fires and forest degradation, increasing below-ground plant matter and sequestering carbon in soils through cropland, wetland or grassland management. A variety of carbon-capturing practices are used on agricultural lands, including but not limited to conservation cover crops, no-till or reduced tillage, anaerobic digesters and nutrient management.

The American Farm Bureau Federation's latest Market Intel reviews trends in U.S. carbon sequestration as climate-smart farming practices increase.

It also highlights the fact that cropland productivity has increased by nearly 50% since 1990 while the net emissions "flux" – the net of carbon emissions and carbon sinks associated with land use and land-use changes – has remained consistent. This builds on existing evidence that farmers and ranchers are raising more food, fibers and producing more renewable fuels using fewer resources and utilizing smarter practices.

"Farmers and ranchers have made great strides in climate-smart practices, yet we're always looking for ways to do better," says AFBF President Zippy Duvall. "Agriculture has been proactive in working toward sustainability goals and we're looking for partners to help us do even more through market-based, voluntary programs. The Food and Agriculture Climate Alliance, which we co-founded, has 40 recommendations for lawmakers as they consider climate policy. We encourage new allies to join us as we build on climate-smart advances while ensuring farmers continue to provide safe, affordable food for America's families."

The Market Intel reports an almost 34-million-acre reduction in forestland and cropland since 1990, with a 28-million-acre growth in housing and commercial development.

The report notes that afforestation or minimizing the conversion of forest land to other land uses such as settlements, croplands or grasslands could increase carbon storage.

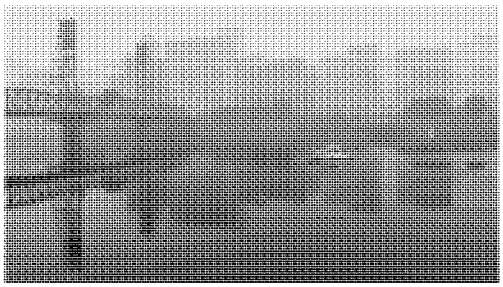
New research and technologies are needed to achieve climate goals without jeopardizing production of the world's food, fiber and fuel, the Farm Bureau says. "The challenge with expanding carbon sequestration through reforestation and afforestation is the significant reallocation of land use it would require, i.e., millions of acres of land would need to be taken out of pasture, cropland, wetlands or settlements and planted to forests," writes John Newton, AFBF chief economist.

"While always open to new climate-smart practices and technology to reduce emissions levels, farmers and ranchers could play an even larger role in the future to help us achieve our climate goals by adopting voluntary practices to offset GHG emissions, such as trapping carbon in the soil through increased conservation cover and reduced tillage. For livestock, increasing the number of anaerobic digesters and improved nutrient management and feed efficiency will help to reduce carbon emissions," says Newton.

Pollution

EPA Under Fire for Putting Ozone Fight on Back Burner
https://www.courthousenews.com/epa-under-fire-for-putting-ozone-fight-on-back-burner/

February 11, 2021
ALEXANDRA JONES
The agency declined to institute new limits on ozone pollution last year even with research linking smog exposure to worse Covid-19 outcomes.



A view of smoggy downtown Portland from the East Bank Esplanade is seen on Sept. 14, 2020. (AP Photo/Gillian Flaccus)
WASHINGTON (CN) — More than a dozen health and environmental groups invited the D.C. Circuit on Thursday to review lax ozone standards that the Environmental Protection Agency opted to leave as-is last year.

The EPA published the policy in the federal register on New Year's Eve, a parting shot from the lame-duck Trump administration after four years spent upending climate-minded regulation as a drain on American enterprise.

Ozone regulations are required to be studied every five years, but then-EPA Administrator Andrew Wheeler had said at a July press conference that the existing ozone limit of 70 parts per billion was working well to keep harmful emissions in check.

Though the standard had been set at 75 ppb in 2008, President Barack Obama's EPA was the one to reduce the limit to 70 ppb — a move that drew criticism from both environmental groups and the manufacturing industry.

Georgia Murray, staff scientist for the Appalachian Mountain Club, was adamant in a statement Thursday that today's air requires more stringency.

"The science clearly shows that a stronger limit is needed to protect public health and also support separate standards to protect plants and the environment," she said. "The negative impacts of ozone to plants and ecosystems include a litany of insults including visible foliar injury, productivity declines, biomass loss, altered nutrient and water cycling, changes in community structure, and disruption of plant-insect interactions. We need stronger science-based standards to address ozone's impacts on the air we breathe and natural ecosystems that cherish."

The Appalachian Mountain Club brought the petition for review Thursday in Washington along with the Chesapeake Bay Foundation, the Natural Resources Defense Council, the Sierra Club and others.

"The Trump administration corrupted and rushed the scientific review process of this rule as it walked out the door, just so industrial polluters can sit and do nothing for the harm they cause," Seth Johnson, lead Earthjustice attorney on the case, said in a statement. "These outdated ozone standards must be corrected not just for children's safety and public health, but also because they are critical to addressing the climate crisis."

Smog-causing ozone is largely a product of industrial sources. While the Clean Air Act requires the EPA to regularly examine ground-level ozone limits using scientific, not economic impact data, it is not required to change them. When a region of the country exceeds that limit, it must find a way to reduce air pollution levels.

Just last month in a separate case, the D.C. Circuit agreed with conservationists that the Clean Air Act contained three illegal loopholes relating to ozone emissions that let states manipulate clean air requirements.

Even before the Covid-19 pandemic, scientific studies linked asthma attacks and other respiratory problems to ground-level ozone that can be created by cars, power or chemical plants, or refineries. According to one report by the American Lung Association, roughly half of all Americans live in counties with unhealthy levels of either ozone or particulate pollution, and low-income communities or communities of color are disproportionately at risk.

Ozone can also damage crops, trees and other vegetation — something Stephanie Kodish, clean air program director for one petitioner, the National Parks Conservation Association, pointed out in a statement Thursday, saying the gas damages park plants like the Quaking Aspen tree at Rocky Mountain, reduces crop yields and limits tree growth.

"People visit national parks thinking the air is clean, but ground level ozone contributes to poor air quality, affecting parks across the country from Cape Cod National Seashore in Massachusetts, to Yosemite in California," said Kodish. "Ozone is a potent greenhouse gas contributing to climate harms in Arctic landscapes and ecosystems in Denali.

Water

EPA Announces Clean Water Act Settlement with Fleur de Lis
https://lawstreetmedia.com/agriculture/epa-announces-clean-water-act-settlement-with-fleur-de-lis/?utm_source=rss&utm_medium=rss&utm_campaign=epa-announces-clean-water-act-settlement-with-fleur-de-lis

By DAVID NAYER

On Wednesday, the Environmental Protection Agency (EPA) announced that it reached a $1.9 million settlement with Fleur de Lis Energy and Fleur de Lis Operating for purported Clean Water Act (CWA) violations at the defendant's Wyoming oil and gas facilities.

This settlement addresses six discharges of crude oil and produced waters which were reportedly released from the facilities operated by Fleur de Lis into shorelines. The settlement also resolves allegations that the company did not have sufficient Spill Prevention Control and Countermeasure Plans and Facility Response Plans at some of its facilities.

Suzanne Bohan, director of EPA Region 8's Enforcement and Compliance Assurance Division, said in the press release, "Companies that store oil must ensure they have adequate spill prevention and discharge response plans to protect public health and the environment ... (the) EPA is committed to ensuring compliance with federal requirements that safeguard our rivers and streams."

The almost $2 million fine will reportedly be placed in the Oil Spill Liability Trust Fund which is "used by federal agencies to respond to discharges of oil and hazardous substances," according to the press release. The defendant also submitted plans for its facilities which do match CWA requirements and is responding to discharges of oil it caused in Salt Creek and Powder River.

The complaint in the matter was filed on Wednesday, and followed shortly by the Stipulation with the parties' agreement. The filings purported that Fleur de Lis discharged amounts of oil that could harm public health or the environment. Specifically, on October 5, 2016 about 4,746 gallons of oil were discharged into Salt Creek in Wyoming which also flows into Powder River. Both bodies of water are considered navigable water in the CWA. Additionally,

23,478 gallons of oil and related water were discharged on August 12, 2017; 306,907 gallons were discharged on May 29, 2018; and a few other discharges of less than 1,000 also occurred.

Message

From: Kezele, Dylan [Kezele.Dylan@epa.gov]
Sent: 3/5/2021 9:46:14 PM
To: AO OPA OMR CLIPS [AO_OPA_OMR_CLIPS@epa.gov]
Subject: Daily News Clips: Afternoon Edition 3/5/2021

Daily News Clips - Afternoon Edition
March 5th, 2021

Administration
Don't Forget the States as You Grapple with Federal Regulation
Biden Administration Promises Regulatory Changes for Pesticide Industry
Ewire: Public Citizen says CRA window closing to repeal EPA rules
Biden administration tosses Trump's delay of rules on methane emissions
Agency
EPA Extends Comment Period For Proposed Updates To TSCA Fees Rule
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Air
Pollution control bill advances to New Mexico Senate Floor, oil and gas industry dissents
D.C. Circuit Rejects New Jersey's Suit Over EPA NSR Recordkeeping Rule
Chemicals
Amazon is reviewing best-selling Seresto flea collar after reports of illnesses, deaths
Uncovering hidden forever chemicals
EPA clarifies status of potential Michigan site listing on NPL
Phosphate mine company will clean up waste to settle lawsuit
E&E: Phosphate company will clean up waste to settle EPA lawsuit
Storage Tank Enforcement: U.S. Environmental Protection Agency and Fairfax, Virginia Recycling Facility Operator Enter into Expedited Settlement Agreement
EPA to Set Enforceable Drinking Water Standards for PFOA and PFOS
PFAS in pesticides: 'A problem of epic proportions'
Environmental Justice
Nevada Lawsuit cites EPA, state concerns about lithium mine
Environmentalists, Chemical Sector Spar Over EPA PFAS Disposal Policy
Water
Portland Water Bureau awarded EPA's largest WIFIA loan to date

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Don't Forget the States as You Grapple with Federal Regulation

https://www.jdsupra.com/legalnews/don-t-forget-the-states-as-you-grapple-5333302/

As the Biden administration settles in, the pendulum of federal power has begun to swing back toward greater regulation. Regulated entities will want to review their range of options to engage in, challenge, or prepare for the host of new regulatory and enforcement initiatives that will shape their business practices for the next several years. While ramping up advocacy efforts, strategic planning, and internal compliance procedures, members of the regulated

community should not forget about an important potential ally: state attorneys general (AGs). State AGs, along with state governors and legislatures, will play key roles in shaping how far and in what domains new regulations will reach. State AGs frequently lead the charge in challenging or defending federal action in court; they help guide regulatory implementation, and they can have significant influence over enforcement.

Your state's AG can be a common access point for discussing strategic responses to federal overreach, and the regulated community should strive to work quickly and closely with state AGs to respond to the looming regulatory expansion. After all, the private sector is not alone in bearing the risk of new federal initiatives; the states often stand to cede their traditional regulatory authority and control over their budgets.

Two of the authors of this article, Dave Ross and Misha Tseytlin, convey these points from personal experience; they battled Obama administration regulatory efforts that infringed on traditional state authorities together when Misha was the Wisconsin solicitor general and Dave was the director of the Environmental Protection Unit at the Wisconsin Department of Justice. They each also had similar roles when they worked for the attorneys general of West Virginia and Wyoming, respectively. Dave also recently served as the head of the Office of Water at the U.S. Environmental Protection Agency (EPA) and understands the cooperative federalism framework from that perspective. Below, we examine how regulated parties can leverage allies within state AG offices to shape federal policy through the lens of one particular field, environmental regulation.

Litigation

The state AGs have taken the lead in challenging regulations issued by the federal agencies, including EPA over the last decade, and that trend is poised to continue.

Take first the recurring battle over federal rules to define "waters of the United States," known less formally as "WOTUS." This term sets the primary limit of the Clean Water Act's geographic reach. In 2015, the Obama administration enacted a sweeping new view of WOTUS through its Clean Water Rule. [i] This rule broadly extended federal authority to numerous waters far removed from traditional navigable waters that are the Clean Water Act's core concern. The dramatic expansion of federal power enshrined in the Clean Water Rule came at the cost of the states' traditional authority over local resource stewardship and land use. And for that reason, state AGs quickly challenged the rule in federal trial and appellate courts — and quickly saw success. In total, over 30 states and state agencies representing over 80% of the land area in the United States challenged the legality of the Clean Water Rule, working closely with industry and other stakeholder groups threatened by the rule's overreach.

The state AGs secured a national stay of the rule in consolidated proceedings before the U.S. Court of Appeals for the Sixth Circuit. [ii] And while the Supreme Court later undermined that stay by holding that the Sixth Circuit lack jurisdiction over the case, [iii] the states saw even more success in district courts. In the U.S. District Court for the District of North Dakota, a coalition of state and state agencies secured an injunction against the rule just one day before it took effect. [iv] Two separate AG-led coalitions, joined by industry intervenors, would also secure preliminary injunctions against the Clean Water Rule in many other states. [v] In total, state AGs working with the regulated community successfully blocked the rule across more than half of the country.

Those efforts carried over into the Trump administration. After the 2016 election, EPA first extended the applicability date of the Clean Water Rule, [vi] then repealed it altogether, [vii] and finally replaced it with the Navigable Waters Protection Rule. [viii] This new rule abandoned the Clean Water Rule's overbroad approach and replaced it with four clear categories of regulated waters and 12 meaningful exclusions, including ephemeral features that only flow after a rain storm. The Navigable Waters Protection Rule has been challenged by a coalition of states, state agencies, cities, and several environmental groups, [ix] while many of the same state AGs who challenged the Clean Water Rule continue to defend its replacement. [x] Presently, the Navigable Waters Protection Rule is in effect across the entire country, as efforts to stay its implementation have been rejected by the courts so far.

States also took the lead in resisting novel regulations of GHGs from power plants. The centerpiece of the Obama environmental agenda was the Clean Power Plan, a new rule forcing states to shift generation to renewable energy

through an agency-created cap-and-trade regime. [xi] The Clean Power Plan thus represented a sea change not only for the electric utility industry, but also for the state regulators that had traditionally governed their resource allocation.

As with the Clean Water Rule, state AGs were at the vanguard of challenges to the Clean Power Plan. They led the briefing before the U.S. Court of Appeals for the District of Columbia Circuit, [xii] and before that court could even issue a decision, the Supreme Court stayed the Clean Power Plan in *West Virginia v. EPA* at the state AGs' request. [xiii] This stay remained in place until the Trump-era EPA repealed and replaced the Clean Power Plan. [xiv] That replacement rule eventually fell to its own legal challenge in the D.C. Circuit, led by a different coalition of state AGs. [xv]

During the Biden administration, EPA and other agencies will likely issue many far-reaching regulations. Members of the regulated community concerned with any such actions would be wise to look to state AGs as important allies and leaders in litigation efforts. The regulated community concerned with federal overreach by the new administration should return to the successful tactics deployed against Obama-era regulations that strayed beyond statutory authority or were procedurally flawed. These tactics include working directly with state AGs to develop case strategy, litigation positions, and venue choices.

Regulatory Implementation and Enforcement

The regulated community should also keep in mind the role of states in shaping policy before litigation ensues and should consider working with states to help shape regulatory developments at the federal level. Michael Regan, the nominee to serve as the next EPA administrator, has committed to working with the states before implementing major regulatory changes that may affect state economies. Whether and how that commitment is implemented remains to be seen, but state AGs are key regulatory partners with EPA, impacting the implementation of many federal programs.

A. Climate Policy

The new administration has made no secret that climate policy is one of its top priorities, with a sweeping review of environmental rules under that framework issued before the end of Inauguration Day. [xvi] This top-down drive will percolate into a variety of regulatory programs administered by or directly impacting the states.

Returning to WOTUS, for example, a new EPA regime might reassert authority over ephemeral streams using climate change as a regulatory driver, justifying expanded jurisdiction over landscape changes driven by extreme precipitation or drought. Or it might conclude that isolated wetlands have a "significant nexus" to other waters because of their flood control benefits, reintroducing the significant nexus test from the 2015 Clean Water Rule to justify expanding jurisdiction further up the watershed. In either instance, the states have managed or co-managed the proximate policy drivers of drought, water supply, and flood control, and they have constitutional authority over land use decisions. They should therefore have a strong voice on the scope of federal Clean Water Act jurisdiction and the need for WOTUS as a climate policy tool.

In the same vein, expansive climate policy is also likely to drive greater federal regulation. The new administration might well revive the Clean Power Plan in some new and perhaps even more ambitious form. Any new rule might once again push the burden onto states to develop complex, costly plans to rework the electric grid *in toto*. EPA may even have a more direct route through state implementation plans or "SIPs" under the Clean Air Act. These SIPs are developed by states to meet air quality standards for traditionally regulated pollutants like lead. EPA must review and approve these plans and can issue overriding federal plans when finding fault with a state submission, though it significantly deferred to the expertise of the states under the Trump administration. The Biden administration will likely revert to the policies of the Obama administration, leading to increases in SIP approval backlogs and more federally issued plans. In certain circumstances, the agency might force greater controls into these state and federal plans as a surrogate for regulating GHGs directly.

Climate initiatives will also feather into other bread and butter regulatory programs, such as water quality standard setting and approvals. For example, EPA may look to scrutinize temperature impacts when reviewing and approving state water quality standards and whether those standards are ensuring the long-term water quality attainment objectives of the Clean Water Act. EPA may also look to the total maximum daily loads or "TMDL" program to address

heat loadings in impaired waterbodies. These TMDLs can require strict new limits on discharges authorized by state-issued permits.

B. Environmental Justice

Beyond review of existing laws like the current WOTUS rule, the Biden administration has also signaled its intent to mandate a governmentwide push for greater "environmental justice" (EJ) across all programs. The scope of the initiative and its crossover to regulatory program implementation remains to be seen, but the White House has already created two new "councils" to promote it. [xvii] And whatever its dimensions, EJ's elevation as a leading policy objective will affect states and the regulated community.

For example, an EJ emphasis might help empower states by increasing opportunities for grants or federal financing of local projects, particularly where those projects satisfy the climate change policy objectives as well. It may also focus federal resources in the Superfund and related contaminated site remediation programs. Yet it might infringe on state autonomy in other ways. It might push many states administering Safe Drinking Water Act programs to speed up replacement of lead service lines in EJ-sensitive communities. But doing so may impose significant financial costs that might then be passed on as higher rates to those very same communities. So too could the additional costs of EJ-driven permitting decisions be passed on to electric or gas utility consumers who are meant to be protected by EJ policies. State public service commissions or other state regulators may have policies and programs in place to help these communities by targeting affordability concerns, and new federal initiatives will need to be coordinated across local, state, and federal government.

EJ policies might also elevate environmental and cultural protections for Indian tribes and tribal resources, potentially displacing or modifying state authority in certain regulatory areas. For example, EPA oversees state decisions to set water quality standards, including those for waters that might be used by tribal members, and it can develop its own recommended national criteria for water quality based on activities important to tribal cultures and economies (*e.g.,* fish harvesting and consumption). EPA can also object to Clean Water Act permitting decisions based on impacts to downstream water quality on tribal lands. Private regulated entities might find their interests aligned with the states in many of these regulatory decisions.

C. Emerging Contaminants

Emerging contaminants are likely to be another major priority for the Biden administration. We expect particular focus on per- and polyfluoroalkyl substances (PFAS), chains of fluorinated carbon atoms that resist chemical or physical degradation in the natural environment. Though PFAS were also a priority of the Trump administration as evidenced by its development and implementation of the national PFAS Action Plan, the new regime is likely to move forward with designating some PFAS as "hazardous substances" under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), popularly known as the Superfund law. There are many types of PFAS, and for decades some of these compounds have been used in a large variety of manufacturing processes and consumer goods. Their ubiquity, combined with a CERCLA designation, will likely increase the number of Superfund sites across the country, expanding the number of site owners or operators with clean-up costs and remedial obligations. Moving these sites to the Superfund program will, in some instances, transfer them from state to federal control or may force states to reprioritize or shift resources under their own site remediation programs.

Any PFAS hazardous substance designation may also impact existing Superfund sites. The settlement agreements governing cleanup or cost sharing at these sites often include "re-opener" provisions that allow EPA to take further actions based on new conditions or information unknown to EPA. The new designations or additional sampling results might trigger these clauses and invite new litigation. Reopening these agreements will likely complicate, and ultimately may slowdown, the overall site remediation. States and local communities have an interest in expeditious cleanup, as it returns degraded or orphaned sites to productive use and helps address longstanding environmental justice concerns for many communities across the country.

EPA is also expected to move forward with Safe Drinking Water Act, Clean Water Act, and other regulatory developments signaled in the PFAS Action Plan. Each of these initiatives alters the federal-state regulatory relationship, either imposing new obligations on state programs, displacing state authority, or potentially creating conflicting standards that will need resolution to ensure the regulatory certainty that is so vital to the regulated community and state, local and tribal governments.

D. Regulatory Enforcement

Finally, the federal-state relationship is also likely to change in the enforcement arena. Enforcement priorities and methods change across presidential administrations. For example, after year-over-year declines in criminal enforcement under the Obama administration, criminal enforcement increased each year under the Trump administration. [xviii] On the civil side, the Obama administration emphasized civil penalties and high case volume, while the Trump administration focused on compliance assistance and voluntary audits and self-disclosures.

Under the Biden administration, it is likely that more investigations will be initiated, particularly on the civil side, and industry or sector-specific targeting and marketing will likely return to prominence. It is also likely that more cases will be referred for prosecution by the Department of Justice (DOJ), and higher penalties will be demanded. Thus, the number of entities engaged in an enforcement context with the federal government will increase, but it is equally likely that the number of cases reaching final resolution will slow as EPA and DOJ grapple with competing priorities and resource management constraints.

The use of supplemental environmental projects or "SEPs" — canceled as a case resolution tool under the Trump DOJ — will return to prominence, as that policy has already been reinstated under the Biden DOJ. Given the twin policy goals of climate change and environmental justice, it is likely that DOJ will seek to broaden the use of SEPs beyond the more traditional statutory or media-specific focus in order to deploy more funding to those initiatives.

Historically, federal enforcement displaces state enforcement, either because the federal government demands primacy or because states defer to the federal lead and reallocate their enforcement and compliance assistance resources to other priorities. Many states for that second reason may not mind a more active federal role. Others, however, prefer to manage enforcement within their borders under their delegated federal authorities or under other state programs. One concern for those states is that heavy-handed federal involvement and elongated negotiations may alter state relationships with the regulated community, or with the federal government. More active federal enforcement also tends to increase federal audits and oversight of state programs, creating further opportunity to erode the federal-state relationship.

At base, the regulated community and the environment are better served by efficient government focused on compliance assistance and preventative measures, with targeted enforcement used to level the regulatory playing field across industry sector groups. Enforcement driven by policy choices and metrics tend to create tension with the regulated community, resulting in less efficient outcomes for all involved. As the Biden administration ramps up its enforcement engines, members of the regulated community may want to consider keeping their state partners, including state AGs, engaged to encourage state primacy or enhanced coordination and more equitable case resolution.

Biden Administration Promises Regulatory Changes for Pesticide Industry

https://www.jdsupra.com/legalnews/biden-administration-promises-9435692/

In his first day in office, President Biden sent a strong signal that changes could be in store for the pesticide industry by issuing a sweeping Executive Order directing a review of a lengthy list of Trump-era regulations, including 48 health and environmental rules.

The Administration also issued a "regulatory freeze" memo instructing that rules sent to the Office of the Federal Register for publication by the Trump Administration not be published until a Biden-appointed department or agency head reviews and approves the rule. The memo also directs department and agency heads to consider postponing rules that have been published in the Federal Register but that have not yet taken effect to seek additional public comment on issues of fact, law, and policy raised by the rule.

Environmental rules and policies the new Administration announced its intent to review include:

- An EPA order denying an administrative challenge to the continued registration of chlorpyrifos, a widely used crop protection tool approved for use on numerous US food crops. While environmental groups have long claimed links between exposure to chlorpyrifos at levels below the current regulatory standard and neurodevelopmental impacts, EPA found the scientific evidence urged in support of the administrative challenge insufficient. EPA was sued by environmental groups over its decision in the Ninth Circuit.
- An EPA rule proposing changes to the Agricultural Worker Protection Standard to clarify and simplify application exclusion zone requirements. The rule has been challenged in court by environmental groups claiming it is not sufficiently protective.
- An EPA rule requiring greater transparency of scientific data used to inform significant regulatory decisions concerning pesticides that was proposed in April 2018 but finalized in the final days of the Trump administration. In an early win for the Biden Administration, a federal judge recently granted EPA's unopposed motion to remand and vacate the rule after environmental groups challenged it. *Env't Def. Fund, et al. v. EPA, et al.*, No. 21-cv-00003 (D. Mont. Feb. 1. 2021), ECF No. 38.

How the new Administration will prioritize and approach its review of these and other Trump Administration rules and policies, including a proposed rule on Plant-Incorporated Protectants derived from newer technologies, and draft guidance on biostimulants is still unclear. Some finalized rules may be rolled back through litigation, as with the science transparency rule noted above. In other pending litigations, EPA has sought extensions of court deadlines to assess its positions, including in multiple lawsuits brought challenging the 2020 registrations of dicamba products approved for "over-the-top" use on dicamba-tolerant soybeans and cotton. However, other lawsuits challenging pesticide products have progressed with no outward change in EPA's position, including the litigation concerning EPA's action with respect to chlorpyrifos.

Some rules could be overturned using the Congressional Review Act (CRA). The CRA sets forth a fast-track procedure that allows Congress to overturn rules adopted by federal agencies in the last sixty legislative days (here, any rules adopted after August 21, 2020).

Most regulatory rollbacks will take time, however, with changes likely to be implemented through formal Agency notice and comment procedures. EPA has already extended the comment period on a December 2020 proposed interim registration review decision (PID) on chlorpyrifos, which would allow continued use of the product, in order to allow the Biden Administration time to review that decision. At his recent confirmation hearing, EPA Administrator Regan vowed to make decisions concerning chlorpyrifos "driven by science" and "driven by the rule of law."

The possibility of pesticide-related rule changes by the new Administration creates considerable uncertainty for industry, growers, and other stakeholders. For most EPA regulations and policies under scrutiny, there is likely to be a period of delay while new appointees get up to speed and the Agency's agenda and priorities are more clearly mapped out.

Ewire: Public Citizen says CRA window closing to repeal EPA rules

https://insideepa.com/daily-feed/ewire-public-citizen-says-cra-window-closing-repeal-epa-rules

Consumer advocacy group Public Citizen says Democrats' window to use the Congressional Review Act (CRA) to repeal Trump EPA regulations they oppose is closing and will eliminate their ability to use the law that allows Congress to scrap rules by a simple majority vote in both chambers.

Politico reports that Public Citizen believes Congress only has until April 4 to introduce CRA resolutions to repeal a host of Trump-era policies on a wide range of issues.

"The CRA allows lawmakers to strike regulations finalized after Aug. 21, 2020, based on a simple majority in both chambers and Biden's signature," which would capture at least three controversial EPA Clean Air Act rules, according to the article.

"Democrats must act in the coming weeks if they intend to successfully use the [CRA] to repeal parts of Trump's deregulatory legacy," Public Citizen says on its website.

"There are two major deadlines at play," says the group, the first being April 4, which is the estimated deadline for when House or Senate members must introduce a CRA resolution to undo a specific regulatory action during the "lookback period" for disapproving Trump administration rules finalized after Aug. 21.

The second deadline is what Public Citizen calls "the action period," estimated from May 10 to 21, and is the time when Congress would fast-track legislative procedures for votes on a particular CRA resolution.

That deadline occurs because the CRA imposes a 60-day limit on its use, meaning once a final rule is submitted to Congress by an agency, a joint resolution of disapproval must be introduced within 60 "days of continuous session," the law firm Steptoe wrote earlier this year.

Public Citizen cites three air act rules as possible targets, including a Nov. 19 EPA rule that scraps the agency's decades-old "once in, always in" policy that said "major" sources of air toxics must always adhere to stringent emissions control requirements for major sources, even if they reduce hazardous air pollution levels to those of less-regulated "area" sources.

The second Trump air rule that Democrats could undo with the CRA is EPA's Sept. 14 decision to undo Obama-era controls on emissions of the potent greenhouse gas methane from oil and gas operations.

And the third air regulation that Public Citizen believes is still within the CRA repeal window is a Dec. 23 rule changing how the agency conducts cost-benefit analyses for its air and climate rules.

But some observers have questioned whether Democrats will pursue many CRA resolutions over Trump-era rules, because of the law's provision that says if Congress scraps a rule then the affected agency cannot develop another regulation of "substantially the same form" -- meaning a successful CRA repeal of an EPA regulation could prevent the Biden administration from issuing any type of similar policy in the future.

Biden administration tosses Trump's delay of rules on methane emissions

https://www.msn.com/en-us/news/politics/biden-administration-tosses-trump-s-delay-of-rules-on-methane-emissions/ar-BB1ehT4u?ocid=hplocalnews

In another step to reinstate environmental protections rolled back under former President Donald Trump, the Biden administration has told a court it will resume efforts to limit emissions of methane and other greenhouse gases and pollutants from the nation's landfills.

Regulation of solid-waste landfills, significant sources of planet-heating gases and other pollutants, had been scheduled to take effect by the fall of 2017 under timetables issued by President Barack Obama's administration. But Trump's

Environmental Protection Agency delayed action, giving states until November 2021 to submit their methane plans and postponing a nationwide rule for at least two additional years.

A federal appeals court in San Francisco upheld the delay last October, rejecting challenges by California, seven other states and environmental advocates. But another appeals court in Washington, D.C., reached a different conclusion in a broader ruling that overturned Trump's climate-related rules for power plants on Jan. 19, the former president's last day in office.

That ruling said the outgoing EPA "failed to justify substantially extending established compliance time frames" and disregarded "the added environmental and public health damage likely to result from slowing down" the regulatory process.

On Thursday, President Biden's Justice Department told the court it was withdrawing its predecessor's orders postponing methane regulation in response to the ruling.

The court filing said Biden, on his first day in office, had ordered the incoming EPA and other administration agencies to immediately review all Trump administration regulations and other actions that may affect health and the environment, in an order that expressly referred to the postponement of methane regulations. By this May, the Justice Department said, the EPA intends to issue a federal plan for any state that does not have a federally approved proposal to regulate the emissions.

"We applaud the Biden administration for abandoning a Trump-era effort to delay the implementation of a critical regulation limiting methane emissions from landfills," said California Attorney General Xavier Becerra, Biden's nominee as U.S. secretary of Health and Human Services. "Landfills are the third-largest source of emissions of the super pollutant methane, and a significant emitter of carbon dioxide and other hazardous air pollutants."

The action "helps further clear away the environmental regulatory wreckage left behind by the previous administration," said Richard Corey, executive officer of the California Air Resources Board.

Biden has also restored U.S. participation in the 190-nation Paris Agreement on climate change, reversing Trump's withdrawal. The new president has halted oil and gas leasing on federal lands and announced reconsideration or reversal of Trump's easing of standards for water and air pollution.

And Biden's nominee to head the EPA, Michael Regan, is a former North Carolina environmental regulator whose background contrasts sharply with those of Trump's EPA administrators, Scott Pruitt, a longtime ally of the oil and gas industry, and Andrew Wheeler, a former coal industry lobbyist.

EPA Extends Comment Period For Proposed Updates To TSCA Fees Rule

https://www.natlawreview.com/article/epa-extends-comment-period-proposed-updates-to-tsca-fees-rule

EPA announced that it is extending the public comment period on proposed updates to the Toxic Substances Control Act (TSCA) Fees Rule to give stakeholders more time to review and comment. The current comment period was set to close on February 25, 2021. Comments are now due on March 27, 2021. Information on the proposed updates is available in the Bergeson & Campbell, P.C. (B&C®) December 30, 2020, memorandum, "EPA Intends Proposed Rule to Increase Flexibility and Reduce Burdens under TSCA Fees Program."

On February 18, 2021, EPA held a virtual public meeting on the TSCA Fees Rule, allowing stakeholders to provide input on the proposed rulemaking. One of the main concerns by industry stakeholders was related to fees collection under TSCA Section 4. Stakeholders reported that EPA should not collect such fees under Section 4 because the same fees are collected under Section 5. The Alliance for Automotive Innovation proposed instead a tiered fees structure, given that the rule as proposed includes downstream user fees, which would double fees within the supply chain.

On the other hand, representatives from the Environmental Defense Fund (EDF) expressed opposition to the exemptions outlined in the proposed rule and criticized EPA for relying on voluntary information requests.

EPA Reopens Consideration of National Climate Pollution Cap

https://biologicaldiversity.org/w/news/press-releases/epa-reopens-consideration-of-national-climate-pollution-cap-2021-03-05/

WASHINGTON— The Environmental Protection Agency has reopened consideration of a nationwide greenhouse gas pollution cap under the Clean Air Act, moving Thursday to withdraw the Trump administration's last-day denial of a petition by the Center for Biological Diversity and 350.org.

"By undoing Trump's denial, the Biden administration has created a chance to enact the most consequential protection we've ever had for our climate," said Maya Golden-Krasner, deputy director of the Center's Climate Law Institute. "When it comes to dealing with rising seas and tinder-box landscapes and helping polluted communities, nothing less will cut it. A national pollution cap would be a climate game-changer."

The new EPA decision, signed by Acting Administrator Jane Nishida, states, "I am withdrawing the denial of your petition, as the agency did not fully and fairly assess the issues raised by the petition. The EPA intends to further consider the important issues raised by your petition before responding."

The Center and 350.org petitioned the EPA in 2009 to use its full powers under the Clean Air Act to list greenhouse gas pollution as a "criteria pollutant" and set a nationwide emissions cap in the form of a "National Ambient Air Quality Standard."

Such a standard would have a huge impact because it would apply across all sectors of the economy, not just fossil fuel power plants. States would be given flexibility to choose how they cut pollution to meet the national cap.

On Trump's last day in office, then-EPA Administrator Andrew Wheeler signed a letter denying the petition and two others related to greenhouse gas regulations.

A nationwide greenhouse gas pollution cap under the Clean Air Act is a central premise of the progressive "Climate President" action plan and model executive order, spearheaded by the Center and supported by nearly 750 climate and environmental justice groups.

The plan urges President Biden to confront the climate emergency with the full powers that Congress has granted the executive branch under existing laws. It also includes measures to advance environmental and racial justice, including directing all federal agencies to pro-actively "mitigate" — instead of only "identify and address" — disproportionate health and environmental impacts of their programs on communities of color and communities of low wealth.

EPA Updates TSCA CBI Review Statistics

https://www.jdsupra.com/legalnews/epa-updates-tsca-cbi-review-statistics-4753639/

EPA published on February 8, 2021, a periodic update of the TSCA confidential business information (CBI) review statistics. TSCA Section 14(g)(1) requires that EPA, within 90 days of receipt of a CBI claim:

- Review and make determinations on CBI claims for chemical identity after the chemical substance has been offered for commercial distribution; and

- Review and make determinations on a representative subset of at least 25 percent of other CBI claims that are not exempt from substantiation and review.

The updated data summarize the number of CBI cases under review and results of completed reviews through December 28, 2020. In addition, a spreadsheet is available showing the details of completed TSCA CBI determinations through December 28, 2020.

EPA states that making this information publicly available continues to demonstrate its commitment to transparency while fulfilling its responsibilities under TSCA. EPA notes that it has established numerous new processes, systems, and procedures to enable submitters to provide the information required when making confidentiality claims and to facilitate EPA's review, and where applicable, determinations on these claims.

Pollution control bill advances to New Mexico Senate Floor, oil and gas industry dissents

https://www.currentargus.com/story/news/local/2021/03/05/pollution-control-bill-advances-new-mexico-senate-floor-oil-and-gas-fossil-fuels-environment/6902197002/

Air pollution controls adopted by The State of New Mexico could be made tougher than federal law as a bill advanced in the Senate Finance Committee Wednesday and could next face a vote on the Senate Floor.

Sponsored by Sen. Peter Wirth (D-25), Senate Bill 8 was intended to allow the State to adopt air pollution controls as stringent or tougher than federal restrictions through the New Mexico Environment Department and the Environmental Improvement Board.

As the Air Quality Control and Hazardous Waste acts currently read, New Mexico is not capable of implementing stricter air quality controls than federal law.

If signed into law, SB 8 would amend both acts.

The bill would alter their language to require regulations be "at least" as stringent as federal law, instead of "no more than," as the present language specifies.

The measure was granted a "do pass" recommendation from Finance Committee on a (6-4) vote after making it through the Senate Conservation and Judiciary committees during the 2021 Legislative Session.

If an area within the Environmental Improvement Board's a local board's jurisdiction is deemed to have ozone levels within 95 percent of the National Ambient Air Quality Standard (NAAQS) or 70 parts per billion (ppb), the bill would require the agency develop a plan to reduce such pollutants.

Areas deemed to be in a transportation-related pollution non-attainment area – areas that exceed limits placed on such pollution – could also see vehicle inspections implemented for emissions, per the bill.

No taxes would be imposed to fund the vehicles inspections, the bill read, without a public vote.

States rights or regulatory uncertainty?

During Wednesday's hearing, Wirth said the bill would give the state and local communities the power to impose their own air quality standards without having to wait for the federal government.

"What this bill does is asserts the state's primacy," he said. "The federal Clean Air Act and Hazardous Waste Act gives states the right to put in place rules that are more stringent than the federal regulation."

New Mexico's current air quality regulations were tied to federal policy, Wirth said, and could change dramatically based on fluctuating administrations in Washington, D.C.

He said the bill would allow the State of New Mexico to use federal regulations as a "floor" and adopt stricter rules as needed.

"Right now, our rules for air quality and hazardous waste are tied to the federal rules. We cannot go higher. We cannot go lower," he said. "The problem with that is you can have huge swings based on federal shifts."

Charles De Saillan, an attorney with the New Mexico Environmental Law Center testified before the committee that the bill would allow for greater state and local control in protecting the environment.

"It means less control from the federal government," he said. "This limitation has unnecessarily tied the hands of the Environment Department in proposing regulations and tied the hands of the Board in adopting regulations. The agencies are bound to follow the federal regulations."

If the U.S. Environmental Protection Agency were to repeal or weaken regulations, De Saillan said current law would force the state to also lower its requirements.

He pointed to numerous environmental rollbacks during the administration of former-President Donald Trump and said SB 8 would make New Mexico immune to the whims of politicized federal agencies.

Without the bill, New Mexico was unable to regulate Issues such as methane emissions from oil and gas facilities, De Saillan said, as the EPA recently rescinded its ability to do so.

"The limitations in these laws have presented state and local agencies with several problems," he said. "The agencies have been forced to try to regulate methane emissions indirectly by regulating other pollutants. This is a very inefficient method of trying to adopt regulations."

A threat to business?

Amy Barabe, lobbyist with the New Mexico Oil and Gas Association said the trade group which represents more than 1,000 oil and gas companies in New Mexico "strongly opposed" the bill.

She warned the bill would "upend" ongoing collaboration between the State of New Mexico and the industry in developing regulations on methane.

Barabe was joined in opposition by other trade groups, oil companies and the New Mexico Chamber of Commerce.

"It would give overly broad authority over air quality and hazardous waste to a board appointed by the executive, so subject to political changes every four years," she said. "Because there are no meaningful parameters placed on the board in this bill, it creates great uncertainty for operators looking to continue to further their investments in New Mexico."

Sen. Crystal Diamond (R-35), who voted against the bill, said if enacted the bill could dissuade businesses such as oil and gas companies from coming to New Mexico. She said federal regulations were adequate for regulatory consistency.

She also argued the bill would have a fiscal impact on companies which would then directly affect New Mexico's bottom line, despite a Legislative Finance Committee report showing it there would be no fiscal impact from the bill.

"As a legislator, we continue to discuss how to better attract businesses. One way we know to do that is to create continuity and consistency within our business atmosphere," she said. "What I worry is that this bill actually creates inconsistency and I fear that it threatens business growth."

D.C. Circuit Rejects New Jersey's Suit Over EPA NSR Recordkeeping Rule

https://insideepa.com/daily-news/dc-circuit-rejects-new-jersey-s-suit-over-epa-nsr-recordkeeping-rule

The U.S. Court of Appeals for the District of Columbia Circuit is rejecting New Jersey's challenge to a years-old EPA rule limiting facilities' Clean Air Act new source review (NSR) recordkeeping and reporting requirements, saying the agency was justified in setting a minimum threshold of emissions below which no reporting is required.

In its 2-1 ruling issued March 5 in *New Jersey v. EPA*, the majority of a divided three-judge panel of the D.C. Circuit disagrees with New Jersey's claims that setting a 50 percent *de minimis* threshold of the "significance" level for a given pollutant may result in evasion of recordkeeping and reporting mandates. The court also rejects the state's claim that the rule could have led facilities to avoid "major" NSR emissions controls.

Chief Judge Sri Srinivasan and Circuit Judges Judith Rogers and Justin Walker all side with EPA on the merits of the case, but Walker in a dissent says New Jersey lacked legal standing to bring the suit.

The regulation at issue is the George W. Bush EPA's "reasonable possibility" rule from 2007 that allows companies to avoid in-depth emissions reporting under the NSR program if the predicted emissions from a project fall below the 50 percent threshold. The suit was paused for several years while the Obama EPA decided whether to reconsider the rule, and was ultimately restarted after the Trump administration decided against reconsideration.

Writing for the majority in her March 5 opinion, Rogers says, "we deny the petition on the merits because the record confirms that EPA engaged in reasoned decisionmaking."

New Jersey alleged that the rule was unenforceable because air permit applicants themselves decide, based on their projects' estimated likely emissions, whether they breach the 50 percent threshold.

Sources with emissions above the limit must record and report their emissions to state regulators under NSR, while sources below the threshold need not report their emissions. NSR permits can mandate strict air pollution controls on "major" emissions sources.

New Jersey argued that the 50 percent trigger was arbitrary, and that the agency's rule creates an incentive for sources to underestimate their predicted emissions and avoid reporting. Without adequate reporting, the state reasoned, states have no way to know if sources breach the "significance" level itself, and hence should be subject to tougher major source pollution controls, as opposed to weaker "minor source" controls.

But Rogers writes, "EPA offered a rational basis for adopting the 50 percent trigger," which is therefore not arbitrary or capricious under the Clean Air Act, and adds that the agency's rulemaking record "demonstrates that EPA adequately considered the enforcement problems referenced by petitioner."

Legal Standard

With respect to the debate over whether New Jersey has Article III legal standing to challenge the rule, Rogers finds that "petitioner has established standing based on harm to its ability to attain the [national ambient air quality standards, or NAAQS] due to unlawful emissions from upwind states," among other reasons.

But Walker in his dissent finds that New Jersey failed to trace any injury to the state from EPA's rule, saying that the mere possibility that sources in other states might evade major source emissions limits and contribute to high air pollution in the Garden State is inadequate to confer standing. His dissent reflects his remarks at Nov. 2 oral argument, where he expressed doubts about New Jersey's standing.

"New Jersey has directed us to no evidence in the record showing when, where, or how often out-of-state polluters will make major changes that evade the permitting process in a way that dirties New Jersey's air," Walker writes. "EPA's rule does not make New Jersey's compliance with the Clean Air Act any more difficult unless we accept New Jersey's speculation about polluters cheating."

Walker adds, if "New Jersey believes what it says -- that the EPA's rule goes too easy on polluters -- then New Jersey may well decide down the road to impose additional requirements on in-state polluters. But absent a record containing more specific evidence than what we have here, New Jersey's decision will be based on the state's best guess about the effect

of those additional requirements -- the type of speculation that is often enough for legislators, but not enough for courts applying the elements of Article III standing."

Rogers in her majority opinion rejects Walker's arguments about the lack of specificity in New Jersey's demonstration of harm stemming from the EPA rule. "Given petitioner's demonstrated likelihood of out-of-state sources miscalculating their projected emissions, the court may properly accept that the 'predictable effect' of inadequate NSR enforcement would be increased illegal cross-state emissions," Rogers says. "Because the substantial risk of interference with petitioner's ability to maintain the NAAQS fairly traces to the Rule's inadequate recordkeeping and reporting requirements, petitioner has met its burden . . . to show standing."

But Walker writes that, "New Jersey's predictions of pollution from illegal major changes traceable to the EPA's monitoring and recordkeeping requirements are 'conjectural' and 'hypothetical.' The record does not show the challenged rule's 'predictable effect' will be major changes that cause illegal pollution."

Amazon is reviewing best-selling Seresto flea collar after reports of illnesses, deaths

https://www.usatoday.com/story/news/investigations/2021/03/05/amazon-reviewing-seresto-flea-collar-amid-reports-illnesses-deaths/4586990001/

Amazon, the world's largest online retailer, said this week it will consider whether to continue selling Seresto flea-and-tick collars after media reports that they have been linked to more than 75,000 pet injuries and almost 1,700 pet deaths.

The announcement came after the Midwest Center for Investigative Reporting and USA TODAY exposed the large number of complaints the U.S. Environmental Protection Agency received about the collars, which use pesticides to kill ticks and fleas.

Amazon, where the Seresto collar is the top-selling flea and tick collar, said the company is "looking into the product in question," spokeswoman Mary Kate McCarthy said.

"Safety is a top priority for Amazon," she said. "We actively monitor our store for product safety concerns including customer feedback and product reviews and have proactive measures in place to prevent unsafe or non-compliant products from being listed. When appropriate, we remove products and reach out to suppliers, manufacturers and government agencies for additional information."

The producers of the collars, Elanco Animal Health, said its product rarely hurts animals, citing internal data. Keri McGrath, a company spokeswoman, said the company "takes the safety of our products very seriously and thoroughly investigates potential concerns related to their use."

Although the majority of reviews on Amazon about the collar are positive, dozens of comments raised concerns about pets being harmed by the collar. Pet owners have also posted about incidents involving the collars on social media and other sites related to pet ownership.

Other top online retailers that sell the collars – Chewy.com and Walmart – did not respond to requests for comment.

The U.S. Environmental Protection Agency, which regulates the product because it contains pesticides, issued a new statement on Thursday morning in response to the story.

EPA "takes reports of incidents like these very seriously," the new statement said, and it encourages pet owners to contact their veterinarians and the National Pesticide Information Center, which is trained in responding to these incidents.

"EPA understands that pets are part of the family in many American households and the agency is committed to following the science and the law as we work to address this issue and pursue our mission," an agency spokesman said in an email.

In another statement issued Wednesday, the agency appeared to place blame on the Trump administration, though the Obama administration first approved the flea and tick collar and was in charge during the course of many of the adverse incident reports.

"Under the Biden-Harris Administration EPA has returned to its core mission, which includes protecting our pets' health," the agency said.

Karen McCormack, a retired EPA staffer, said the agency has known about the issue for years but has not taken action on the pesticides involved in the product.

Seresto, developed by Bayer and now sold by Elanco, works by releasing small amounts of pesticides onto the animal for months at a time. The pesticides in the collar are supposed to kill fleas, ticks and other pests but be safe for cats and dogs.

The collars have been linked to at least 1,698 pet deaths, 75,000 incidents of pet harm and hundreds of humans being harmed, according to EPA documents. The incidents span eight years – between 2012 when the product first hit the market and June of 2020.

These numbers are almost certainly an underestimate, said Nathan Donley, a senior scientist at the Center for Biological Diversity.

The American Society for the Prevention of Cruelty of Animals runs an animal poison control center, where pet owners call in with complaints about their pets being harmed. Spokesman Savee Dalgo said the organization has no reported deaths related to the collar.

Dalgo said the organization recommends all collars are bought from veterinarians or veterinary retailers.

Dr. Douglas Kratt, president of the American Veterinary Medical Association, said in an emailed statement that it's important to consider the benefits of the collars alongside any concerns. Kratt said that the manufacturer "has indicated that reports of adverse events have occurred at a rate of less than 0.3%, with most of those reports reflecting mild hair loss or skin irritation."

"The risk associated with the use of medical products is never zero, so we need to weigh the risk with the reward – in this case, protection against parasites that can seriously harm animal and human health," Kratt said. "As always, pet owners with concerns should talk with their veterinarian about finding a parasite control plan that's safe and effective for their individual pets."

Uncovering hidden forever chemicals

https://www.eurekalert.org/pub_releases/2021-03/hjap-uhf030421.php

Researchers from the Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS) found large quantities of previously undetectable compounds from the family of chemicals known as PFAS in six watersheds on Cape Cod using a new method to quantify and identify PFAS compounds. Exposures to some PFAS, widely used for their ability to repel heat, water, and oil, are linked to a range of health risks including cancer, immune suppression, diabetes, and low infant birth weight.

The new testing method revealed large quantities of previously undetected PFAS from fire-retardant foams and other unknown sources. Total concentrations of PFAS present in these watersheds were above state maximum contaminant levels (MCLs) for drinking water safety.

"We developed a method to fully capture and characterize all PFAS from fire-retardant foams, which are a major source of PFAS to downstream drinking water and ecosystems, but we also found large amounts of unidentified PFAS that couldn't have originated from these foams," said Bridger Ruyle, a graduate student at SEAS and first author of the study. "Traditional testing methods are completely missing these unknown PFAS."

The research will be published in *Environmental Science & Technology*.

PFAS -- per- and polyfluoroalkyl substances -- are present in products ranging from fire retardant foams to non-stick pans. Nicknamed "forever chemicals" due to their long lifespan, PFAS have been building up in the environment since they were first used in the 1950s.

Despite the associated health risks, there are no legally enforceable federal limits for PFAS chemicals in drinking water. The Environmental Protection Agency's provisional health guidelines for public water supplies only cover PFOS and PFOA, two common types of PFAS. Massachusetts, along with a few other states, has gone further by including six PFAS in their new MCLs in drinking water. But there are thousands of PFAS chemical structures known to exist, several hundred of which have already been detected in the environment.

"We're simply not testing for most PFAS compounds, so we have no idea what our total exposure is to these chemicals and health data associated with such exposures are still lacking," said Elsie Sunderland, the Gordon McKay Professor of Environmental Chemistry at SEAS and senior author of the paper.

The standard testing methods used by the EPA and state regulatory agencies only test for 25 or fewer known compounds. The problem is the overwhelming majority of PFAS compounds are proprietary and regulatory agencies can't find what they don't know exist.

The new method developed by Sunderland and her team can overcome that barrier and account for all PFAS in a sample. CSI: PFAS

PFAS are made by combining carbons and fluorine atoms to form one of the strongest bonds in organic chemistry. Fluorine is one of the most abundant elements on earth but naturally occurring organic fluorine is exceedingly rare -- produced only by a few poisonous plants in the Amazon and Australia. Therefore, any amount of organofluorine detected in the environment is sure to be human made.

PFAS compounds found in the environment come in two forms: a precursor form and a terminal form. Most of the monitored PFAS compounds, including PFOS and PFOA, are terminal compounds, meaning they will not degrade under normal environmental conditions. But precursor compounds, which often make up the majority of PFAS chemicals in a sample, can be transformed through biological or environmental processes into terminal forms. So, while the EPA or state agencies may monitor PFAS concentrations, they still are not detecting much of the huge pool of PFAS precursors.

That's where this new method comes in.

The researchers first measure all the organofluorine in a sample. Then, using another technique, they oxidize the precursors in that sample and transform them into their terminal forms, which they can then measure. From there, the team developed a method of statistical analysis to reconstruct the original precursors, fingerprint their manufacturing origin, and measure their concentration within the sample.

"We're essentially doing chemical forensics," said Sunderland.

Using this method, Sunderland and her team tested six watersheds on Cape Cod as part of a collaboration with the United States Geological Survey and a research center funded by the National Institutes of Health and led by the University of Rhode Island that focuses on the sources, transport, exposure and effects of PFAS.

The team focused on identifying PFAS from the use of fire-retardant foams. These foams, which are used extensively at military bases, civilian airports, and local fire departments, are a major source of PFAS and have contaminated hundreds of public water supplies across the US.

The research team applied their forensic methods to samples collected between August 2017 and July 2019 from the Childs, Quashnet, Mill Creek, Marstons Mills, Mashpee and Santuit watersheds on Cape Cod. During the collection process, the team members had to be careful what they wore, since waterproof gear is treated with PFAS. The team ended up in decades-old waders to prevent contamination.

The sampling sites in the Childs, Quashnet and Mill Creek watersheds are downstream from a source of PFAS from fire retardant foams -- the Quashnet and Childs from The Joint Base Cape Cod military facility and Mill Creek from Barnstable County Fire Training Academy.

Current tests can only identify about 50 percent of PFAS from historical foams -- products that were discontinued in 2001 due to high levels of PFOS and PFOA -- and less than 1 percent of PFAS from modern foams.

Using their new method, Sunderland and her team were able to identify 100 percent of all PFAS compounds in the types of fire-retardant foams that were used for decades at Joint Base Cape Cod and Barnstable County Fire Training Academy.

"Our testing method was able to find these missing compounds that have been used by the chemical industry for more than 40 years," said Sunderland.

The tests also revealed huge quantities of PFAS from unknown sources.

"Our accounting of PFAS from firefighting foams could not explain 37 to 77 percent of the organofluorine that we measured," said Ruyle. "This has huge ramifications for not only our understanding of human exposure but also for how much PFAS is discharging into the ocean and accumulating in marine life."

EPA clarifies status of potential Michigan site listing on NPL

https://insideepa.com/daily-feed/epa-clarifies-status-potential-michigan-site-listing-npl

EPA is clarifying to local officials and the public that it is unlikely to add a 1,4-dioxane site spreading contamination in groundwater in Ann Arbor, MI, to its Superfund priority cleanup list unless the state requests such a listing, while local officials renew pressure on Michigan's government to list the site after initial requests several years ago failed.

The agency this week issued questions and answers related to contamination stemming from the site that was owned by Gelman Sciences Inc., a former medical filter manufacturer near Ann Arbor that EPA says "left contamination stemming from years of unregulated waste handling on its facility grounds."

According to news reports from *mlive.com*, the answers from EPA offer "more clarity about what it could take to get the Gelman dioxane plume on the National Priorities List [(NPL)] and positioned for a federal Superfund cleanup under the EPA's watch."

Previously, *mlive.com* reported that city and county officials wrote to Gov. Gretchen Whitmer (D-MI) Dec. 11, "asking for her support and concurrence to petition" EPA to place the Gelman site on the NPL

EPA in its newly issued questions and answers on its website says that while the agency earlier reviewed listing the site in response to a 2016 petition for listing, "there is no guarantee that the site will be listed on the NPL."

It notes that sites are listed after EPA and the state agree that is the best option. “EPA will not generally proceed with listing a site on the NPL absent a formal State request. NPL listing determinations are made by EPA after taking into account comments and input from all appropriate stakeholders."

Further, the agency says such a listing would likely take three years. “While EPA has not yet determined whether to pursue listing the site on the NPL, if EPA decides to pursue listing it would take approximately three additional years to proceed through the NPL listing process.”

In addition, it says the agency is not taking a position in state court litigation over the site.

Phosphate mine company will clean up waste to settle lawsuit

https://www.cachevalleydaily.com/news/archive/2021/03/05/phosphate-mine-company-will-clean-up-waste-to-settle-lawsuit/#.YEJtt2hKiUk

BOISE, Idaho (AP) — A phosphate mining company has reached a toxic-waste cleanup agreement with the Environmental Protection Agency and the Shoshone-Bannock Tribes over mining waste in southeastern Idaho.

Officials with P4 Production LLC, a Monsanto subsidiary, said in a prepared statement Thursday that they worked with the tribes and EPA to develop the remediation plan for the Ballard Mine near Soda Springs.

Under the agreement, P4 Production doesn’t admit fault, but it will pay hundreds of thousands of dollars to cover the costs of responding to toxic waste releases and make millions more available in case the cleanup work isn’t done.

E&E: Phosphate company will clean up waste to settle EPA lawsuit

https://www.eenews.net/greenwire/2021/03/05/stories/1063726763

A phosphate mining company has reached a toxic waste cleanup agreement with EPA and the Shoshone-Bannock Tribes over mining waste in southeastern Idaho.

Officials with P4 Production LLC, a Monsanto subsidiary, said in a prepared statement yesterday that they worked with the tribes and EPA to develop the remediation plan for the Ballard mine near Soda Springs.

"We fully support this plan and will continue to work collaboratively and transparently throughout this process," the company wrote in an email to the Associated Press. "As members of the Soda Springs community, we have great respect for the people and the environment in this historic and beautiful area of Southeast Idaho."

The cleanup agreement was filed in federal court this week. After a public comment period, it can go into effect. The agreement is expected to resolve lawsuits filed by EPA and the Shoshone-Bannock Tribes over the waste left at the mining site.

Under the proposed agreement, P4 Production wouldn't admit fault, but it would pay hundreds of thousands of dollars to EPA, the tribes and other agencies to cover the costs of responding to toxic waste releases from the mining site. P4 Production would also have to make an additional $89 million available to EPA as a guarantee that the cleanup work will be completed.

The proposed agreement states that the cleanup work would include putting a cover on more than 500 acres of the site where waste was left behind, installing barriers to intercept and treat contaminated groundwater, and building wetland treatment cells to clean up any contaminated seepage or springs.

Southeastern Idaho contains large phosphate deposits. There are several mines in the area that have operated by different companies over the last 100 years.

Investigations into the possibility that waste from the phosphate mines in the region could be hurting humans began in 1996, after several horses pastured in the area developed selenium poisoning and had to be put down. Environmental regulators began examining each of the mining sites to determine the impact of any waste.

Ultimately, the investigation found that the mines left dangerous contamination behind, including toxic substances such as selenium, arsenic, uranium, radium and radon. During the last century, those wastes have run into the region's water sources, concentrated inside some of the plants in the area and exposed insects and amphibians through the waterways and sediment.

Some of the toxic waste can cause cancer or other illnesses in humans. Investigators found that Native Americans in the area were at risk of being exposed to the toxins at rates far higher than the maximum acceptable levels set by the federal government.

Seasonal ranchers were also deemed at increased risk because they may eat beef from cattle that grazed on plants and drank the water in the region. The investigation concluded that the area was safe for recreational campers and hikers, however, because they likely wouldn't be exposed to dangerous amounts of the toxins.

The Shoshone-Bannock Tribes have worked with EPA to monitor and respond to toxic releases from the Ballard Mine when they occur. The tribes contend in one of the lawsuits that they haven't been fully reimbursed by P4 Production for that work, and they want a judge to order that they be compensated for past and future work at the site.

Storage Tank Enforcement: U.S. Environmental Protection Agency and Fairfax, Virginia Recycling Facility Operator Enter into Expedited Settlement Agreement

https://www.jdsupra.com/legalnews/storage-tank-enforcement-u-s-5017786/

The United States Environmental Protection Agency ("EPA") and Republic Services of Virginia, LLC d/b/a AAA Recycling and Trash Removal Services ("Republic") entered into a February 4th Expedited Settlement Agreement ("ESA") addressing an alleged violation of the Virginia Underground Storage Tank ("UST") Regulations. See Docket No. RCRA-03-2021-0042.

The ESA provides that Republic operated a UST at a facility ("Facility") in Fairfax, Virginia.

An Off-Site Compliance Monitoring Letter ("OCML") is stated to have been sent to Republic on August 10, 2020. The OCML requested documentation in support of compliance with UST requirements.

Republic is stated to have responded to the letter to EPA via email on three different dates. Based on the information provided in the responses, a UST was identified as being located at the Facility. It is described as:

. . . a 15,000-gallon tank that was installed in or about March 1994, and that, at all times relevant hereto, routinely contained diesel, a " regulated substance" as that term is defined in Section 9001(7) of RCRA, 42. U.S.C. § 6991(7), and 9 VAC § 25-580-10.

EPA alleged the following violations:

1. From at least February 24, 2020 until August 28, 2020, Respondent failed to have overfill prevention equipment installed on the UST, in violation of 9 VAC 25-580- 50(3)(a)(2), and
2. From at least January 1, 2020 until August 10, 2020, Respondent failed to maintain records of checks of the impressed current system rectifier, in violation of 9 VAC 25-580-90(4)(a).

A civil penalty of $1,540 is assessed.

EPA to Set Enforceable Drinking Water Standards for PFOA and PFOS

https://www.jdsupra.com/legalnews/epa-to-set-enforceable-drinking-water-9452526/

The United States Environmental Protection Agency (EPA) recently issued a final regulatory determination for two of the most prevalent per- and polyfluoroalkyl substances (PFAS), PFOA and PFOS, meaning the Agency will now begin the months long process to develop and propose formal enforceable drinking water standards. Additionally, EPA is proposing to sample for 29 different PFAS during the nationwide sampling event conducted as part of the fifth Unregulated Contaminant Monitoring Rule (UCMR) assessment, which could lead to future drinking water standards for other PFAS.

EPA Finalizes Drinking Water Standards for PFOA and PFOS Chemicals

On February 22, 2021, the EPA finalized its decision to regulate levels of PFOS and PFOA in drinking water under the Safe Drinking Water Act (SDWA). The SDWA authorizes EPA to establish enforceable drinking water quality standards, known as Maximum Contaminant Levels or MCLs, for contaminants that EPA finds may present a risk to public health. EPA presently regulates and requires monitoring for over 90 drinking water contaminants under the SDWA.

PFAS are a broad group of man-made chemicals estimated to include over 5,000 different variations. PFAS have been dubbed the forever chemicals because they are resistant to heat, oils, stains, grease and water, which make them long-lasting in the environment. To date, EPA has only issued non-enforceable health advisory levels of 70 parts per trillion for PFOA and PFOS, which are guidance values intended to provide technical information to state agencies and other public health officials on health effects, analytical methodologies and treatment technologies associated with drinking water contamination. Certain states, such as New Jersey, Minnesota and Michigan have already developed much more stringent enforceable standards given the delay in federal action.

As a result of its determination, EPA will initiate the scientific review process to propose MCLs and Maximum Contaminant Level Goals (MCLGs) for PFOA and PFOS within two years, which are then subject to a notice and comment process before they can be adopted. MCLGs are non-enforceable public health goals, which consider only public health and not the limits of detection and treatment technology effectiveness. The MCL is set as close to the MCLG as feasible, however the MCL must take into consideration cost and feasibility of treatment.

Monitoring Under the Fifth Unregulated Contaminant Monitoring Rule

With its announcement to develop drinking water standards for PFOA and PFOS, EPA also released its proposed list of contaminants persuant to the UCMR 5. As currently proposed, UCMR 5 would sample and analyze for 29 different PFAS, as well as lithium, between 2023 and 2025. The UCMR is an important feature of the SDWA because it generates the occurrence data EPA considers in determining whether to regulate a certain chemical in drinking water systems. Every five years, EPA must issue a list of unregulated contaminants that are to be monitored by public water systems. The data is then used to determine whether drinking water standards should be developed for those contaminants.

A total of six different PFAS were first sampled during the UCMR 3 testing conducted between 2013 and 2015, which led to the development of standards for PFOA and PFOS. Results of the UCMR 3 testing revealed 1.3% of subject water systems reported at least one sample with PFOA and/or PFOS (separately or combined) concentrations exceeding EPA's health advisory level of 70 ppt. It is anticipated that the data derived from the UCMR 5 testing will lead to future drinking water standards or advisories, as well as additional sampling. Regulated utilities should be aware that the data is made publicly available, and interested parties such as citizen interest groups will be closely following the results.

Additionally, businesses that have used PFAS may consider tracking the data to determine whether their local utility identifies elevated levels of PFAS.

PFAS in pesticides: 'A problem of epic proportions'

https://www.eenews.net/stories/1063726787/print

"Forever chemicals" are present in multiple common pesticides, according to new testing conducted by an environmental watchdog group and released exclusively to E&E News.

The findings, described as "deeply concerning," raise a host of public health concerns — including implications for food safety — and could trigger pressure on EPA to address the issue. The agency has faced repeated scrutiny over pesticides in the past, with the latest findings already adding fuel to the fire.

The testing done by Public Employees for Environmental Responsibility (PEER) found per- and polyfluoroalkyl substances (PFAS) — a class of chemicals tied to a wide range of health concerns, including cancer — in a handful of publicly available herbicides and insecticides.

It is unclear how the PFAS are getting into the pesticides, and whether manufacturers are intentionally adding the chemicals, as opposed to accidental contamination from equipment used to manufacture or transport the pesticides.

The tests found PFAS in Talstar P, an insecticide manufactured by FMC Corp. that kills over 75 types of pests. The company website says the product "is approved in multiple use-sites, so you can use it almost anywhere: indoors and out, in industrial, commercial and food-handling areas."

The tests also found PFAS in mosquito and tick control agent Mavrik Perimeter, made by Zoecon. Initial testing revealed PFAS in at least two other pesticides, although further analysis is required to confirm those results.

The new test results follow PEER's December discovery of PFAS in the widely used mosquito control product Anvil 10+10, which was later confirmed by EPA (*Greenwire*, Dec. 8, 2020).

The agency — which would not comment on PEER's newest testing — maintains that PFAS in Anvil 10+10 came from the high-density polyethylene (HDPE) barrels used to transport the pesticides.

Today, EPA told E&E News it found eight different PFAS in barrels that carry Anvil 10+10.

The barrel tests found more PFAS compounds than PEER's December tests found in the actual pesticide, with total levels in different-sized barrels ranging from 20 to 50 parts per billion.

Not all PFAS found in the barrels made their way into the pesticide. For example, the agency detected more than 30 ppb of the compound PFBA in 55-gallon drums, but the chemical was present at only 0.23 ppb in tests of Anvil 10+10.

Similarly, while barrel tests found 0.87 ppb of the notorious compound PFOA in the 55-gallon drums, the earlier pesticide tests found just 0.25 ppb of PFOA.

The presence of PFOA, in particular, is concerning, because the compound was discontinued by manufacturers years ago over concerns about its negative health effects.

EPA says that compound was "created as the result of the fluorination process." Generally speaking, PFOA can also be created when other PFAS break down over time, and PEER has also speculated about whether the compound could be legacy contamination of equipment used in manufacturing the barrels.

The agency did not test the barrels for a second compound — HFPO-DA — which was also found in the pesticides, at levels ranging between 0.26 and 0.5 ppb. HFPO-DA is used in the GenX process.

EPA would not disclose the manufacturer of the barrels in question, but an agency spokesperson said it is "actively working with industry and trade organizations to raise awareness and set clear expectations for product stewardship."

The agency is also testing "different brands of fluorinated containers from a variety of container vendors to determine whether they contain PFAS and learn the conditions affecting leaching."

Meanwhile, an FDA spokesperson said the department is working with EPA to learn "if there are any implications for the safety of foods" from the fluorinated barrels, while stressing that Anvil 10+10 is not approved for use on crops. EPA is also working with the departments of Transportation and Agriculture (***E&E News PM***, Jan. 15).

Advocates say the agency isn't doing enough. Kyla Bennett, director of science policy at PEER, says EPA should be more proactive in warning the public about the possibility and implications of PFAS contamination in pesticides.

"We now have five different manufacturers that are selling PFAS-contaminated pesticides," Bennett said, noting PEER's latest findings. "This is a problem of epic proportions."

Bennett also called EPA's latest test results "deeply concerning" and expressed concern that PFAS could be in many other pesticides, in addition to possibly coming into contact with food through the HDPE barrels. The highest total PFAS found by PEER were 23.6 ppb in Talstar P, with 0.28 ppb found in Mavrik Perimeter.

An EPA spokesperson said the agency "cannot speculate on PEER findings without conducting its own testing and analysis of the data."

In a statement, acting Assistant Administrator for the Office of Chemical Safety and Pollution Prevention Michal Freedhoff said that the agency is still early in its own investigation into Anvil 10+10, and that the findings released to E&E News today show how "the Biden-Harris Administration's focus on developing and using the best available science will guide our decision-making, strengthen our work with stakeholders, and lead to pragmatic solutions that advance our efforts to address PFAS contamination and protect human health."

Invisible ingredients

Bennett is particularly concerned that EPA is too laser-focused on PFAS coming from barrels. The new tests conducted by PEER revealed different PFAS compounds than were found in the Anvil 10+10 barrels, raising questions about whether the chemicals could be getting into pesticides through other means.

She questioned whether manufacturers are purposely adding the compounds into pesticides as so-called inert ingredients.

If that is true, companies would not have to disclose the chemicals' presence in their products. Federal law requires that consumers be told only about active ingredients that target unwanted pests. Consumers do not need to be told about the presence of "inert" ingredients — which could be added to help pesticides stick to or penetrate plants, for example — and those are often not listed on product labels even though they can appear in large quantities and be just as toxic as a pesticide's active ingredients.

Bennett said EPA officials told her some PFAS are used as propellants in pesticides, and the agency's InertFinder website lists multiple PFAS.

EPA and manufacturers dispute statements that PFAS are used in pesticides, with the agency saying a chemical's inclusion in the InertFinder does not mean it is actually in a product.

Pesticide producers say they do not add PFAS to their products, and Talstar manufacturer FMC said the company also does not use the fluorinated packaging being scrutinized by EPA. Zoecon did not immediately respond to a request for comment.

Megan Provost, president of Responsible Industry for a Sound Environment (RISE), which represents nonagricultural pesticide producers, said, "PFAS chemistry is not an active or inert ingredient in any pesticide formulation" made by members in her coalition.

She again blamed the barrel manufacturers, stating that "fluorinated packaging is used for some 20% to 30% of pesticide formulations to increase product and packaging integrity."

"The packaging technology and processes are complex, and EPA is still investigating how PFAS chemistry is being detected in fluorinated high density polyethylene pesticide containers," she said.

Disagreement on how to define PFAS could be to blame for the disparities.

When E&E News asked EPA whether the compounds could be used as inert ingredients such as propellants in pesticides, the agency acknowledged that some groups consider "man-made chemicals with at least one fully fluorinated carbon atom" to be part of the PFAS family. But after repeatedly stating that no PFAS are used as inert ingredients, the agency said currently registered pesticides contain no ingredients that have "structures or properties comparable to prominent PFAS," which would leave wiggle room for other, lesser-known compounds to be present in pesticides.

Advocates say that trust issues remain over such issues and that PEER's tests underscore the need for public transparency around pesticide ingredients — even though lawsuits seeking to force ingredient disclosure have been unsuccessful for years.

"Over the years, EPA has been consistently behind the curve when it comes to contaminants and ingredients," said Drew Toher, community outreach and policy director at Beyond Pesticides.

Colin Antaya, a legal fellow with the Conservation Law Center, noted that EPA nonetheless has "pretty sweeping powers" to take action on issues like PFAS in pesticides under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). EPA could cancel registrations for affected pesticides, he said, or issue a stop-sale. Such efforts could pair with steps the agency has already taken under the Toxic Substances Control Act through a subpoena to learn more about the HDPE barrels containing Anvil 10+10.

States, industry actions

As pressure mounts on EPA, states are already seeking to crack down on PFAS in pesticides.

Clarke Mosquito Control Products Inc. — which manufactures Anvil 10+10 — confirmed in January that the company had voluntarily ceased all sales and shipments of the pesticide. The manufacturer has already warned mosquito-spraying authorities in Massachusetts that barrels containing other pesticides it manufactures may also be contaminating those products and has offered to swap out barrels containing the pesticide Duet.

Meanwhile, states like Massachusetts are eyeing mosquito control reform. Identical bills introduced in both Bay State legislative chambers include sections targeting insecticides containing PFAS. Massachusetts Department of Environmental Protection spokesperson Ed Coletta said the state is closely monitoring the issue and "continues to evaluate products used for mosquito control activities."

In Maine, lawmakers introduced a bill in February that would bar aerial application of PFAS. That legislation would also require third-party analysis of a pesticide to reach a determination about PFAS content. Bennett of PEER noted that the language relies on PFAS being part of the "formulation" of the pesticide, however, meaning barrel contamination would not be covered.

The New York State Department of Environmental Conservation, meanwhile, said in January that regulators will "take a hard look" at EPA's data on PFAS in pesticides. DEC has moved to quarantine Anvil 10+10 statewide and is investigating the contamination issue.

Nevada Lawsuit cites EPA, state concerns about lithium mine

https://www.seattletimes.com/seattle-news/northwest/nevada-lawsuit-cites-epa-state-concerns-about-lithium-mine/

RENO, Nev. (AP) — Another federal lawsuit challenging the construction of a huge Nevada lithium mine approved in the final days of the Trump administration says the U.S. Environmental Protection Agency and state wildlife officials repeatedly warned the plans don't comply with laws protecting water and wildlife near the Oregon line.

The U.S. Bureau of Land Management itself acknowledged that when it approved Nevada Lithium Corp.'s Thacker Pass mine on Jan. 15, it didn't conform with the bureau's visual-resource protection requirements, according to the lawsuit filed last week in U.S. District Court in Reno.

Four conservation groups want a judge to void the expedited review of the mine under a series of Trump administration executive orders streamlining environmental regulations, especially for critical elements including lithium — a key component in electric car batteries.

"In the rush to implement the project," the lawsuit said the agency "swept under the rug the mine's serious environmental impacts."

Some of the region's most essential and irreplaceable sage grouse habitat could be lost if the mine is built, the suit claims. It says the bureau erroneously concludes no federally protected Lahontan cutthroat trout exist in the streams that will be affected and dismisses potential harm to golden eagles and destruction of pronghorn antelope habitat.

"The generalized discussion of these impacts gives short shrift to potentially catastrophic impacts to the region's protected, sensitive, and vulnerable species," the suit states. "In many cases, the biological information ... is so vague as to render the analysis and any proposed mitigation meaningless."

A longtime Nevada rancher filed suit last month to block mining on federal land above an extinct volcano formed millions of years ago located 25 miles (40 kilometers) from the Nevada-Oregon line.

The new lawsuit cites detailed objections raised by U.S. and state regulators in correspondence and comments submitted to land managers. It was filed Feb. 26 by the Western Watersheds Project, the Great Basin Research Watch, Basin and Range Watch and Wildlands Defense.

"We continue to find that the preferred alternative will likely result in adverse impacts to wildlife, ground and surface waters, and riparian vegetation within and outside the project area," the Nevada Department of Wildlife wrote to the bureau on Jan. 4.

Lithium Nevada CEO Alexi Zawadzki is confident the government review complies with all applicable federal laws.

It was "based on nearly 10 years of baseline environmental studies that were conducted through strict adherence to state and federal standards and with many years of extensive coordination and consultation with local stakeholders," he said in an emailed statement.

The lithium deposit is believed to be one of the U.S.' largest. The mine is projected to produce 1,000 jobs in construction and 300 permanent jobs, generating $75 million in state and local tax revenue over a decade.

President Joe Biden has revoked some of the Trump administration's executive orders and put the brakes on a copper mine in Arizona but has prioritized lithium production as part of its determination to move from fossil fuels to renewable energy.

"Renewable energy and electric cars aren't green when they depend on mining that destroys important wildlife habitat causes extinction," said Kelly Fuller, the Western Watersheds Project's energy-mining campaign director.

The lawsuit cites EPA warnings that a plume of contaminated water exceeding Nevada pollution standards could extend a mile from the pit 300 years after it is closed.

Top of Form

Bottom of Form

The EPA predicts toxic water will seep from the tailings waste facility with high levels of uranium, mercury, arsenic and more than a dozen other contaminants. The lawsuit cites the agency's complaints that the bureau failed to analyze in any detail how the drainage will be treated and managed or for how long.

"Without detailed information about mitigation and its efficacy, it is unclear how a Record of Decision could state that all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted," the EPA said.

The EPA acknowledged that after the National Environmental Protection Act public review process ended, Lithium Nevada submitted a new mitigation plan Dec. 16 that it maintains could substantially decrease long-term impacts. But that option wasn't discussed in previous environmental reviews and isn't currently a condition of approval.

The lawsuit said air pollution concerns center on Lithium Nevada's claim that sulfur dioxide emissions will be five-to-10 times lower than current state-of-the-art industry standards, or the "cleanest in the world."

But the company didn't provide any evidence supporting those "bold assumptions" and the bureau failed to explain how their effectiveness can be determined from so little information, the lawsuit said.

"Neither BLM nor the public has any assurance that the technology actually exists."

Environmentalists, Chemical Sector Spar Over EPA PFAS Disposal Policy

https://insideepa.com/daily-news/environmentalists-chemical-sector-spar-over-epa-pfas-disposal-policy

Environmentalists and the chemical sector are sparring over whether EPA should endorse interim storage for per- and polyfluoroalkyl substances (PFAS) as part of its interim guidance on PFAS disposal, with environmentalists warning of major data gaps about disposal but industry claiming that "safe and effective" disposal methods exist.

EPA sought public comment until Feb. 22 on its interim guidance, which was congressionally mandated under the fiscal year 2020 National Defense Authorization Act. The agency recently posted comments it received online.

The agency in December issued the guidance, outlining currently available technologies but declining to endorse or dismiss any, including incineration, while noting uncertainties and knowledge gaps that still need to be addressed. At the time, it said it would incorporate comments into a revised document.

EPA's guidance examines three disposal/destruction technologies: thermal treatment, landfilling and underground injection. The agency acknowledges data gaps, saying, "Performance and testing data -- including data on destruction and removal of PFAS in hazardous waste combustors and associated pollution controls, and long-term performance data for landfills and deep well injection -- are insufficient to support more specific guidance at this time."

EPA added that it "intends to fill gaps in knowledge associated with potential releases from these destruction and disposal methods before issuing further guidance."

Joint comments from 30 environmental groups, including Sierra Club and Earthjustice, say the guidance fails to go far enough on filling data gaps but does make two significant findings that should be emphasized -- that technologies

currently being used are not effective in destroying PFAS or preventing them from being released, and that "safe storage may be the best option at present," the groups say in a press release on the comments.

The guidance "identifies many of the limitations of these technologies, though the discussion is opaque or overly positive in several sections," they write.

The groups say EPA's findings on available technologies mean that widely-used practices like shipping PFAS-contaminated firefighting foams to incinerators and cement kilns are not successful destruction methods and likely are distributing PFAS back into the environment. As well, landfilling and deep well injection have not been shown to be able to confine PFAS for the centuries they will persist, they say.

But, the environmentalists say, while the guidance offers important findings and data gaps, "it fails to consider the implications of these findings and identify urgent actions."

"EPA buried the lede in its guidance," Sonya Lunder, senior toxics policy advisor for the Sierra Club and lead author of the letter, says in the groups' press release on their comments. "Waste managers need to store these harmful and toxic chemicals until advanced technologies are developed to safely destroy them. Anything else risks serious and lasting contamination of our air and water resources."

'Safe and Effective Means'

But the American Chemistry Council (ACC) in Feb. 22 comments says it agrees with EPA's conclusion "that, while questions remain, properly designed and operated incinerators, landfills, and underground injection wells can be safe and effective means for the disposal of waste containing PFAS."

ACC expresses concern over EPA's suggestion that interim storage of PFAS is appropriate while uncertainties are examined and appropriate destruction methods can be recommended. The group points out that the guidance says existing technologies "have been found to be effective for the destruction and disposal of PFAS waste."

"While these technologies may be further improved by the Agency's continued investigation, it is neither correct nor a clarification to suggest that storage of PFAS waste for 2 to 5 years is an appropriate method for handling PFAS waste when effective methods currently exist."

It urges the agency "to reassess the ranking of interim storage as the least uncertain form of disposal for PFAS waste which could potentially counter the intent of some solid and hazardous waste regulatory structures and may encourage stockpiling of material," in turn harming the environment and increasing materials management costs.

The Coalition for Responsible Waste Incineration (CRWI), which advocates for the safe disposal of hazardous waste and safe operation of thermal destruction devices, in Feb. 22 comments contends that the destruction and removal efficiency (DRE) test is a method already in place that demonstrates destruction of organic chemicals by hazardous waste incinerators. While PFAS have some unique properties, they are organic compounds, it says.

The group says the method for showing destruction of organic compounds involves performing a test where a facility selects one or more principal organic hazardous constituents (POHCs) "that is at least as difficult to destroy as the constituents in waste feed and [to] prove they can destroy at least 99.99% of those POHCs." CRWI says it "believes that the established POHC selection and DRE testing process can be used to demonstrate destruction of PFAS compounds."

CRWI acknowledges some knowledge gaps exist for incinerators to use this method for PFAS, and says EPA's next version of the guidance should include answers on this issue. "In particular, information is needed on where PFAS compounds fit into the incinerability index and methods need to be validated to measure both PFAS compounds and any fluorinated products of incomplete combustion (PIC) formed during the combustion process."

The Solid Waste Association of North America (SWANA), which represents the private and public sector waste disposal industry, notes in its Feb. 22 comments the need for additional data and research, saying the "major takeaway" from the guidance is that current gaps in knowledge about PFAS destruction and disposal methods "prevent virtually any definitive recommendations for destruction or disposal at this time."

These gaps relate to thermal treatment and landfills, with the group saying it backs efforts to fill in those gaps and make further recommendations, particularly calling on the agency to prioritize research on landfill leachate, noting it is likely the area of greatest concern for landfill operations and wastewater treatment plants. And, SWANA says, the guidance should go further in examining emerging technologies.

States' Concerns

State waste managers contend the guidance is lacking, with Feb. 19 comments from the Association of State & Territorial Solid Waste Management Officials saying the document "fails to provide meaningful guidance and direction on how to advance PFAS destruction and disposal policy, regulation, and practices."

Meanwhile, state drinking water administrators in their Feb. 22 comments tell EPA that it should offer additional guidance either in its interim document or separately "for drinking water treatment disposal and destruction technologies that are safe, easily implemented, and affordable."

The Association of State Drinking Water Administrators says "more guidance is needed for all drinking water utilities, and especially small systems with limited resources, on how to increase their capacity to select the appropriate treatment and disposal for treating PFAS-contaminated water and to properly dispose of the spent materials."

EPA also received various comments over the guidance's allusion to biosolids. In Feb. 22 comments, the National Association of Clean Water Agencies (NACWA), which represents municipally owned wastewater and stormwater utilities, cites concerns with the way EPA characterizes land application of biosolids and discusses biosolids without recognizing the sources of PFAS in wastewater. It cites the guidance's vague language on biosolids, noting the guidance recognizes land application of biosolids is not a disposal method but lists biosolids as an example of PFAS-containing materials that could be managed using certain disposal and destruction technologies.

NACWA says it agrees land application is not a disposal method, but rather a beneficial use of a recovered resource subject to stringent water standards, and says "this vague language potentially creates the perception that the land application of biosolids, since it is neither destroying nor disposing of PFAS, is simply a pathway contributing to PFAS-migration and contamination of the environment."

It asks EPA to clarify in the guidance that "land application of biosolids is not an unregulated or uncontrolled off-site migration of PFAS to other environmental media."

Portland Water Bureau awarded EPA's largest WIFIA loan to date

https://www.waterworld.com/drinking-water/infrastructure-funding/press-release/14198793/portland-water-bureau-awarded-epas-largest-wifia-loan-to-date

OREGON -- At a virtual event with Oregon Governor Kate Brown, U.S. Senator Jeff Merkley (OR), Portland Mayor Ted Wheeler and other dignitaries, the U.S. Environmental Protection Agency announced its largest Water Infrastructure Finance and Innovation Act (WIFIA) loan to date — a $727 million loan to the Portland Water Bureau in Portland, Ore. The loan will help finance the Bull Run Treatment Program to improve drinking water quality and reliability for nearly 1 million people by better controlling contaminants and lead while bolstering the system's climate resiliency.

"EPA is excited to partner with Portland to announce one of the very first WIFIA loans closed by the Biden-Harris Administration and the largest WIFIA loan ever issued by the agency," said EPA's Acting Assistant Administrator for Water Radhika Fox. "This project and EPA's WIFIA loan illustrate how strategic partnerships can improve public health and help address the impacts of climate change, while creating jobs and saving ratepayers money."

Through WIFIA, EPA will play a key role in efforts to build back better by improving and upgrading the nation's water and wastewater infrastructure in communities across the country. With this loan closing, EPA has announced 45 WIFIA loans totaling more than $9 billion in credit assistance to help finance over $19 billion for water infrastructure projects while creating almost 47,000 jobs.

The City of Portland's Bull Run Treatment Program will construct a new filtration water treatment plant to remove the microorganism Cryptosporidium and other potential contaminants and water pipelines to connect the filtration facility to existing conduits. In addition, it will implement improved corrosion control treatment to further adjust the chemistry of Portland's water and reduce potential levels of lead at the tap. The program is designed to comply with two federal regulations, the Long Term 2 Enhanced Surface Water Treatment Rule and the Lead and Copper Rule. The project will also improve the system's resiliency to fire, landslides, major storms, and earthquakes. Together, these projects will improve public health and water quality and increase drinking water system resiliency and reliability for nearly 1 million people.

"In Oregon, we are working to center equity as we implement a 100-year vision for strategic investments in water projects and policy, to provide a sustainable water future that addresses the impacts of climate change," said Governor Kate Brown. "We must be forward thinking in our investments, knowing that our systems must be ready to withstand more severe weather events in the decades to come."

"No matter where they live, every Oregonian deserves to have clean water to drink, and a modern, up-to-date system to treat their water," said U.S. Senator for Oregon Jeff Merkley. "That was my guiding principle when I created the WIFIA program, and it's the guiding principle behind the Bull Run Treatment Project. I remain as committed today to saving ratepayers' money and putting reliable access to clean water within reach for all Oregonians as I was eight years ago when this program became law, and look forward to watching the Bull Run Treatment Project come to fruition."

"The City of Portland, and everyone who relies on clean, safe, and reliable drinking water, are grateful to Senator Merkley for his leadership in helping Portland and other communities protect access to clean water, and to Senator Ron Wyden, Representatives Earl Blumenauer and Suzanne Bonamici, Congressman Kurt Schrader, and the Biden-Harris administration for their support of the City's efforts to invest in keeping our drinking water clean and safe," said Portland Mayor Ted Wheeler.

"These projects echo the wisdom of our City's founders who established Bull Run as our water source more than a century ago," said City Commissioner Mingus Mapps. "We are safeguarding their legacy through long-term investment to protect public health and economic growth for the century ahead."

"Using WIFIA financing for most of the construction costs of the Bull Run Treatment Projects captures significant money-saving benefits for our ratepayers," said Portland Water Bureau Director Gabriel Solmer. "Not only does WIFIA's low interest rate guarantee savings, but its long-term repayment schedule doesn't begin until the projects are built and ratepayers are getting the benefits of the projects as they share in the costs."

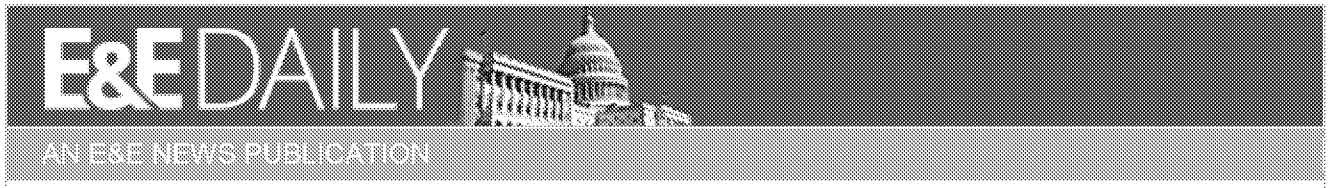
EPA's WIFIA loan will finance nearly half the project costs. The remaining project funds will come from a combination of revenue bonds and Portland Water Bureau's system funds. The WIFIA loan will save Portland Water Bureau an estimated $247.5 million compared to typical market financing. Project construction and operation are expected to create at least 4,700 jobs.

Message

From: E&E News [ealerts@eenews.net]
Sent: 2/5/2021 12:02:13 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: February 5 -- E&E Daily is ready

E&E Daily -- Congress. Legislation. Politics.

Read today's E&E Daily on the web



E&E DAILY — Fri., February 5, 2021

READ FULL EDITION

1. Q&A:
'Let's seize the day': Carper outlines his agenda

Senate Environment and Public Works Chairman Tom Carper wants to do things his way. He's focused on strong environmental action, but he's also looking for a deal with Republicans.

TOP STORIES

2. POLITICS:
Senate approves Keystone XL, fracking amendments

3. POLITICS:
Dems plan to 'beat the drum' on environmental justice

4. SENATE:
Manchin resists partisan approaches to COVID-19, climate

ON THE HILL

5. HOUSE:
GOP taps Trump loyalist to help lead environment panel

6. SOLID WASTE:
Lawmakers rally around industry recycling proposal

7. NOMINATIONS:
Labor pick questioned over Keystone XL, miner safety

IN COMMITTEE

8. BIOFUELS:
Klobuchar-Thune bill puts ethanol in climate-friendly light

9. NOMINATIONS:

Senators advance Biden U.N. pick, other nominees

10. AGENDA:

Lawmakers push fracking, energy, PFAS and land bills

UPCOMING HEARINGS AND MARKUPS

11. CALENDAR:

Activity for February 1 - February 7, 2021

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Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 2/9/2021 10:05:17 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Kim, Eun [Kim.Eun@epa.gov]
Subject: READING: Briefing Materials for February 10, 2021
Attachments: Goffman Joseph Calendar.ics; AA briefing -- HFC-23 briefing paper.docx; FOIA Roundtable presentation 2021.pptx; ORIA Overview Brief_updated Feb 2021.pptx

Please find attached briefing materials for the meetings on your calendar tomorrow.

Goffman, Joseph Calendar
Goffman.Joseph@epa.gov
On Wednesday, February 10, 2021
Time zone: (UTC-05:00) Eastern Time (US & Canada)
(Adjusted for Daylight Saving Time)

February 2021

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	**10**	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

Busy | Tentative | Free
Out of Office | Working Elsewhere | Outside of Working Hours

February 2021

Wed, Feb 10

Before 8:00 AM	**Free**
8:00 AM – 8:30 AM	**Free**
8:30 AM – 9:00 AM	Check-In
9:00 AM – 9:15 AM	VDI Install
9:15 AM – 10:00 AM	Air Issues Meeting (materials attached)
10:00 AM – 10:30 AM	Management Roundtable
10:30 AM – 11:00 AM	One-on-One with Chris Grundler

■	11:00 AM – 11:30 AM	One-on-One with Ann Ferrio
□	**11:30 AM – 11:45 AM**	**Free**
■	11:45 AM – 1:15 PM	Lunch/Management time
□	**1:15 PM – 1:30 PM**	**Free**
■	1:30 PM – 2:00 PM	Catch up on CSAPR Rulemaking
■	2:00 PM – 2:30 PM	Introductory meeting with the American Forest & Paper Association
■	2:30 PM – 3:00 PM	One-on-One with Jon Edwards
■	3:00 PM – 4:00 PM	ORIA 101 Briefing (materials attached)
□	**4:00 PM – 4:15 PM**	**Free**
■	4:15 PM – 5:00 PM	Kigali Amendment Ratification: Interagency Discussion (materials attached)
■	5:00 PM – 5:30 PM	General Introductory Call with ORD/OAR Leadership
□	**After 5:30 PM**	**Free**

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

Message

From: E&E News [ealerts@eenews.net]
Sent: 3/11/2021 12:02:23 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: March 11 -- Climatewire is ready

Climatewire -- Policy. Science. Business.

Read today's Climatewire on the web

CLIMATEWIRE

AN E&E NEWS PUBLICATION

CLIMATEWIRE — Thu., March 11, 2021

READ FULL EDITION

1. SEA-LEVEL RISE:

How Mississippi mud might stop La. from disappearing

A massive coastal restoration project in Louisiana could test whether new wetlands can be created faster than they're disappearing under waves and rising seas.

A message from POLITICO:

POLITICO DISPATCH: Get an insider's briefing on all the updates you need every morning with POLITICO's daily news podcast. We take you inside POLITICO and pull back the curtain on politics and policy. Fast. Short. Daily. **Listen to POLITICO Dispatch now.**

TOP STORIES

2. WHITE HOUSE:

Biden hires carbon expert in race for climate plan

3. SCIENCE:

6 months of summer? Researchers say it's possible

CLIMATE IMPACTS

4. SEA-LEVEL RISE:

More nursing homes threatened by floods — study

POLITICS

5. FINANCE:

Labor Dept. axes Trump rule against sustainable investing

6. PENTAGON:

Biden orders military to form climate risk group

BUSINESS

7. TRANSPORTATION:

Researcher warns of 'big market delusion' in EVs

8. BANKING:

Greenpeace protests ECB's loans for carbon-heavy industries

IN THE STATES

9. LOUISIANA:

Biden declares major disaster after ice storm

INTERNATIONAL

10. SOUTH AFRICA:

Eskom, Sasol face government demand to meet emission limits

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ABOUT CLIMATEWIRE -- POLICY. SCIENCE. BUSINESS.

Climatewire is written and produced by E&E News, which is staffed by a dedicated reporting team within the POLITICO newsroom. It provides comprehensive coverage of all aspects of climate change issues. From international agreements on carbon emissions to alternative energy technologies to state and federal GHG policies to corporate sustainability, Climatewire plugs readers into the information they need to stay abreast of this complex issue. Climatewire publishes daily by 7:00 a.m.

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Message

From: E&E News [ealerts@eenews.net]
Sent: 3/17/2021 5:50:03 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: March 17 -- Greenwire is ready

Greenwire -- The Leader in Energy and Environment News

Read today's Greenwire on the web

GREENWIRE

AN E&E NEWS PUBLICATION

GREENWIRE — Wed., March 17, 2021

READ FULL EDITION

1. ADVOCACY:

Unionizing showdown bedevils Audubon

Employees at the National Audubon Society are organizing after allegations of widespread workplace problems, including two rounds of layoffs, a mishandled diversity training, and the resignations of two top equity and inclusion officials.

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TOP STORIES

2. PUBLIC HEALTH:

Study finds 55 new chemicals in babies' blood

3. RENEWABLE ENERGY:

BLM rebukes Trump, advances large-scale Calif. solar project

4. OIL AND GAS:

Alaska Native corp. keeps pushing for seismic in ANWR

CONGRESS

5. SECURITY:

Energy and Commerce leaders probe SolarWinds hack

6. ENVIRONMENTAL JUSTICE:
Dems ask Biden to revoke permits for La. plastics plant

NATURAL RESOURCES

7. WILDLIFE:
Bird numbers plunge as deforestation changes mating songs

8. OCEANS:
More marine protections would boost fisheries — study

9. ENDANGERED SPECIES:
FWS seeks more time to rewrite Mexican wolf management rules

LAW

10. PANDEMIC:
Bundy released from jail; trial set for May

AIR AND WATER

11. SCIENCE:
USGS water analyst faked test results

12. ARMY CORPS:
Officials: Ore. dam could fail in a large earthquake

13. WESTERN WATER:
Vegas pipeline plan looms in debate over cedar groves

FEDERAL AGENCIES

14. NATIONAL PARKS:
Watchdog finds NPS staff violated harassment, hiring policies

STATES

15. NEVADA:
Lawmakers consider proposals to curtail transparency

16. OREGON:
Fire at ethanol plant west of Portland prompts evacuations

17. TEXAS:
8 tornadoes confirmed in Panhandle over the weekend

18. INDIANA:
Reward offered for tips on bald eagle killing

INTERNATIONAL

19. ETHIOPIA:

Government rejects outside mediation in Nile dam dispute

20. THAILAND:

$11M haul seized in wildlife trafficking sting

21. PAKISTAN:

Gas explosion collapses coal mine, killing 7

A message from POLITICO:

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ABOUT GREENWIRE – THE LEADER IN ENERGY AND ENVIRONMENT NEWS

Greenwire is written and produced by E&E News, which is staffed by a dedicated reporting team within the POLITICO newsroom. It's the one-stop source for those who need to stay on top of all of today's major energy and environmental action with an average of more than 20 stories a day. Greenwire covers a complete spectrum of issues, from energy policy to Clean Air Act litigation to public lands management. Greenwire publishes daily by 1:30 p.m.

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Message

From: E&E News [ealerts@eenews.net]
Sent: 3/5/2021 12:46:12 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: March 5 -- Energywire is ready

Energywire -- The Transformation of the Energy Sector

Read today's Energywire on the web

ENERGYWIRE

AN E&E NEWS PUBLICATION

ENERGYWIRE — Fri., March 5, 2021

READ FULL EDITION

1. ENERGY TRANSITIONS:
Building code ruling may upend EVs, clean electricity

A building code council has become the unlikely center of a firestorm that's drawn the attention of the Biden administration and could affect efforts across the country to cut carbon dioxide emissions and expand clean energy technologies.

TOP STORIES

2. TEXAS BLACKOUTS:
$16B error? Watchdog, ERCOT pitch power grid changes

3. INTERIOR:
Sources: Decision imminent on Vineyard Wind

4. CARBON CAPTURE:
Chevron, Microsoft announce Calif. CCS plant

ENERGY TRANSITIONS

5. ELECTRICITY:
Utilities face $500B climate 'resilience gap'

FEDERAL AGENCIES

6. TEXAS BLACKOUTS:
FERC to complete grid disaster review by summer — Glick

7. PEOPLE:
Ex-FERC official joins law firm

LAW

8. LOUISIANA:

Mining company to pay $100M for coastline erosion

ELECTRICITY

9. HYDROPOWER:

Lawmaker wants DOE to reconsider cross-border permit

10. ARIZONA:

GOP lawmakers block clean energy standards

11. ELECTRIC VEHICLES:

GM, LG Chem plan second EV battery plant for U.S. market

OIL AND GAS

12. ENERGY MARKETS:

OPEC, Russia send oil price up with deal to contain output

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Energywire is written and produced by E&E News, which is staffed by a dedicated reporting team within the POLITICO newsroom. Energywire brings readers deep, broad and insightful coverage of the transformation of the energy sector. Energywire focuses on the business, environmental and political issues surrounding the rapidly changing energy industry and the numerous factors -- from expanding natural gas use to renewables and more -- that are altering the traditional electric utility industry. Energywire publishes daily by 8:00 a.m.

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Message

From: EPA Press Office [noreply_subscriptions@epa.gov]
Sent: 2/16/2021 7:03:18 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: EPA: 2020 Power Plant Emissions Continue to Demonstrate Significant Reductions

U.S. ENVIRONMENTAL PROTECTION AGENCY
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACT: press@epa.gov

EPA: 2020 Power Plant Emissions Continue to Demonstrate Significant Reductions

Steady downward trend improves public health and delivers environmental benefits

WASHINGTON (February 16, 2021) – Today, the U.S. Environmental Protection Agency (EPA) released publicly available, annual data on 2020 emissions of nitrogen oxides (NO_X), sulfur dioxide (SO_2), carbon dioxide (CO_2), and mercury from power plants in the lower 48 states. In continuation of a long-standing trend of decreasing coal generation and increasing natural gas and renewable generation, this data shows a marked decline in emissions of these key pollutants compared to 2019.

The 2020 data show a 19 percent decline in SO_2 emissions compared to 2019, a 16 percent decline in NO_X emissions, an 11 percent decline in CO_2 emissions, and a 17 percent decrease in Hg emissions. Additionally, ozone season (May 1 to September 30) NO_X emissions dropped by 10 percent. Overall, based on the first 11 months of the year, electricity demand in 2020 decreased by just over 3 percent compared to 2019. The decrease was in part due to a temporary decline in electricity demand between March and May.

From 1990-2020, annual emissions of SO_2 from power plants fell by 95 percent and annual emissions of NO_X from power plants fell by 88 percent. In 2020, sources in both the CSAPR SO_2 annual program and the Acid Rain Program (ARP) together emitted 0.79 million tons, a reduction of 14.9 million tons, or 95 percent, from 1990 levels. In 2020, sources in both the Cross-State Air

Pollution Rule (CSAPR) NO_X annual program and the ARP together emitted 0.74 million tons, a reduction of 5.7 million tons, or 88 percent, from 1990 levels.

Long-term declines in emissions are due primarily to changes in the mix of fuels used in electricity generation. Data from 2020 showed a 19% decrease in coal generation and an increase in natural gas and renewable generation; this resulted in significant emissions decreases overall. This shift from higher emitting to lower and zero emitting generation has been a long-term trend and is accelerating in recent years.

These reductions protect community health. NO_X and SO_2 emissions contribute to the formation of ground-level ozone and particulate matter, which can lead to respiratory and cardiovascular problems, and exposure to mercury can increase the possibility of health issues ranging from cancer to immune system damage.

In addition, these emissions reductions are resulting in positive ecosystem impacts. Ambient particulate sulfate concentrations in the eastern United States have shown substantial improvement, decreasing between 47 and 83 percent from the 2000-2002 to 2017-2019 observation periods. All areas of the eastern United States have shown significant improvement in wet sulfate deposition in this period, with an overall 68 percent reduction. The level of acid neutralizing capacity, an indicator of recovery, improved significantly from 1990 levels at lake and stream monitoring sites in the Adirondacks, New England and the Catskill mountains.

EPA collects detailed SO_2, NO_X, CO_2, and mercury emission data and other information from power plants across the country, as part of ARP, the CSAPR, the CSAPR Update Rule, and the Mercury and Air Toxics Standards (MATS). Emissions data collected through these programs are posted online and accessible to the public at: https://www.epa.gov/airmarkets/power-plant-emission-trends

If you would rather not receive future communications from Environmental Protection Agency, let us know by clicking here.
Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

Message

From: Morgan, Ruthw [morgan.ruthw@epa.gov]
Sent: 3/3/2021 8:14:31 PM
Subject: AO Staff Office Weekly Report for the week ending March 3, 2021.
Attachments: AO Staff Weekly Report for 030321v2.docx; AO Staff Weekly Report for 030321v2.pdf

Good afternoon Acting Administrator Nishida and colleagues,

Attached please find the **AO Staff Office Weekly Report** (in both PDF and Word) for the week ending March 3, 2021.

Sincerely,
Ruth

Ruthw Morgan, Special Assistant
Office of the Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460
(202) 564-1326
Morgan.Ruthw@epa.gov

Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 3/9/2021 11:01:31 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]; Shaw, Betsy [Shaw.Betsy@epa.gov]; Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Dunham, Sarah [Dunham.Sarah@epa.gov]; Edwards, Jonathan [Edwards.Jonathan@epa.gov]; Grundler, Christopher [grundler.christopher@epa.gov]; Shoaff, John [Shoaff.John@epa.gov]
Subject: FW: 031121: Materials for OAR Program Overview Briefing
Attachments: OAR Overview March 2021_final.pptx; OAR Overview_Administrator Briefing Memo.docx

Thank you for all your input. Please find attached the final set of materials provided to the OA. This briefing has not yet been scheduled.

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

From: Campbell, Ann
Sent: Tuesday, March 9, 2021 6:00 PM
To: Lance, Kathleen <Lance.Kathleen@epa.gov>
Cc: Kim, Eun <Kim.Eun@epa.gov>
Subject: 031121: Materials for OAR Program Overview Briefing

As requested, please find attached OAR's materials for the program briefing anticipated on March 11. Thank you.

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

Message

From: Kim, Eun [Kim.Eun@epa.gov]
Sent: 2/22/2021 10:50:21 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
CC: Campbell, Ann [Campbell.Ann@epa.gov]
Subject: READING: Materials for Tuesday, February 23, 2021
Attachments: CM OAR 1-2021.docx; Feb 2021 OAR Business Review Agenda.docx; Jan 2021 Bowling Chart .xlsx; MBR Supplemental_FY21_Feburary.xlsx; NTAA Executive Committee Members.docx; NTAA-EPA Meeting Agenda Virtual 2.21.pdf; 02.23.21 NTAA Goffman v2.docx; 12.14.20 NTAA Letter to Biden Harris Transition Team.pdf; 2019-Tribal-Air-Infographic.pd.pdf; Business Review - Continuous Improvement Discuss Slides.pptx

Goffman, Joseph Calendar
Goffman.Joseph@epa.gov
On Tuesday, February 23, 2021
Time zone: (UTC-05:00) Eastern Time (US & Canada)
(Adjusted for Daylight Saving Time)

February 2021

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	**23**	24	25	26	27
28						

Busy · Tentative · Free
Out of Office · Working Elsewhere · Outside of Working Hours

February 2021

Tue, Feb 23

Before 8:00 AM	**Free**
8:00 AM – 10:00 AM	**Free**
10:00 AM – 10:30 AM	Management Roundtable/ Scheduling meeting
10:30 AM – 11:00 AM	One-on-One with Tomas Carbonell
11:00 AM – 11:45 AM	**Free**
11:45 AM – 12:30 PM	Lunch/Management time
12:30 PM – 1:00 PM	Meeting with Gwen Fleming re: EtO
1:00 PM – 2:00 PM	NTAA Executive Committee Meeting with EPA's Office of Air and Radiation (materials attached, 3 pdfs & 2 docs)
2:00 PM – 2:45 PM	OTAQ Weekly
2:45 PM – 3:00 PM	**Free**

▩	3:00 PM – 4:00 PM	OAR Monthly Business Review (materials attached, 1ppt & 2 docs & 2 spreadsheets)
▩	4:00 PM – 5:00 PM	Overview of Title V Petitions
☐	**5:00 PM – 6:00 PM**	**Free**
▩	6:00 PM – 6:30 PM	Informational Discussion with Anne Austin
☐	**After 6:30 PM**	**Free**

Eunjung Kim
Special Assistant
Office of Air and Radiation
(202) 815-7252

Message

From: POLITICO Pro [alert@email.politicopro.com]
Sent: 2/9/2021 10:04:29 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: The Biden administration is lukewarm on carbon pricing. What does that mean for Canada?

The Biden administration is lukewarm on carbon pricing. What does that mean for Canada?

By Maura Forrest

02/09/2021 05:00 AM EST

OTTAWA — Environment Minister Jonathan Wilkinson thinks Canada and the U.S. can work together to fight climate change now that President Joe Biden is in office.

The two countries can collaborate on "joint efforts" to expand access to clean energy, reduce methane emissions and fund green infrastructure, he wrote in a recent op-ed. But Wilkinson conspicuously made no mention of the one policy that has been central to Canada's efforts to reduce emissions: carbon pricing.

Wilkinson in December unveiled a new climate plan that would see Canada's federal carbon tax rise nearly sixfold — from CA$30 per metric ton today to CA$170 per metric ton by 2030. Though the Liberal government has proposed a suite of emissions-cutting regulations as well, carbon pricing remains the backbone of its climate strategy.

South of the border, however, it's a different story. Carbon pricing did not get a mention in Biden's early executive orders on climate change, nor did it form part of his election platform. And the fact Biden is lukewarm on a central pillar of Canada's climate plan adds a wrinkle to the two countries' efforts to align their climate policies — including any talk of a border carbon tariff.

The prospects for a carbon price: There are indications Biden is interested in carbon pricing, including in written answers provided by Treasury Secretary Janet Yellen to the Senate Finance Committee during her recent confirmation hearings. "I am fully supportive of effective carbon pricing and I know that the President is as well," she wrote. "We cannot solve the climate crisis without effective carbon pricing."

But a federal carbon tax would be a tough sell on Capitol Hill. Last week, moderate Democratic Sen. Joe Manchin (D-W.Va.) made clear he sees no path forward for carbon pricing for the time being. "They want to talk about this as a penalty? Forget it," he said. "As long as I'm here and there's 50 votes and takes 51 to pass it."

Carbon pricing isn't off the table, but it would be "politically challenging" to get it passed, said Ana Unruh Cohen, staff director of the House Select Committee on the Climate Crisis, during a webinar hosted by Canada's Smart Prosperity Institute last month. "I really don't see carbon pricing as being one of the leading priorities out of the gate," she said, adding that the focus has changed to sectoral policies.

Tim Profeta, director of Duke University's Nicholas Institute for Environmental Policy Solutions, said it isn't just Republicans who aren't keen on the policy. The left flank of the Democratic Party also now views it with skepticism — popular Democratic Rep. Alexandria Ocasio-Cortez (D-N.Y.) in 2019 called carbon taxes and cap-and-trade schemes "inadequate as the whole answer."

Part of the concern from progressives is that carbon prices can increase the cost of essential commodities in a way that disproportionately affects low-income, minority communities, Profeta said.

He believes the U.S. will eventually put a national price on carbon, however — just not right now. "I simply just don't think we're in a political moment where it's achievable," he said.

The implications for Canada: If the U.S. relies on regulations to cut emissions instead of a carbon tax, that could actually give Canada a slight advantage, said Stewart Elgie, director of the University of Ottawa's Institute of the Environment. During the Trump administration, one of the chief concerns about the Liberals' carbon tax was that it would hurt Canada's competitiveness, given the country's largest trading partner was busily rolling back environmental policies. But regulations tend to cost more than a carbon tax to achieve the same emissions reductions, Elgie said. "As long as the U.S. is bringing in regulations that will drive a similar level of low-carbon performance … it should largely reduce the cross-border competitiveness issue and probably benefit Canada a little bit."

Carbon tariffs: Still, things get a little more complicated when it comes to border carbon adjustments. The Biden administration has expressed interest in the policy as a means to level the playing field by imposing a border tariff on emissions-intensive goods from countries with lax environmental regulations. Wilkinson, too, has said he wants to "explore the potential" of carbon tariffs.

Though there has been speculation about the two countries imposing tariffs on each other, it seems more likely the Liberal government would move in tandem with the U.S. on a border adjustment that would protect both countries' competitiveness from carbon-intensive imports from countries like China and India. The European Union has also proposed its own carbon tariff.

However, carbon pricing is generally seen as a prerequisite to border carbon adjustments, and it remains to be seen how Canada would align its policy with the U.S. if one country has a federal carbon tax and the other does not.

Waiting game: A Canadian government official recently told POLITICO that Canada is waiting to see how the U.S. approaches pricing pollution, particularly when it comes to the possibility of border carbon adjustments. "It'll really be up to the Americans if that for them is a real priority," the official said. "I don't think we're worried about the Americans putting tariffs on us."

Dan Woynillowicz, a climate and energy policy consultant, said it's possible to calculate the implicit carbon price of a regulation, such as the limits on methane emissions that Biden has promised to impose. That could then be used to design a border tariff, though it would be more complicated than having an explicit price on carbon, and the U.S. government would need to be sure it would "pass muster if it was called before a trade tribunal," Woynillowicz said.

Elgie said Canada would likely design its own tariff in parallel with the U.S. policy and would set the level so that it wouldn't target U.S. imports, even if the U.S. ends up with a lower implicit carbon price than Canada's.

Neither country is aiming to slap tariffs on the other, he said. For that matter, he's not convinced the U.S. will end up pursuing the policy at all, if countries like China and India adopt carbon prices of their own. "As long as countries are taking meaningful action… then tariffs aren't going to be needed," he said. "It's really for the laggards."

To view online:
https://subscriber.politicopro.com/energy/article/2021/02/the-biden-administration-is-lukewarm-on-carbon-pricing-what-does-that-mean-for-canada-2034093

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Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/10/2021 3:44:44 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Transition 2021: Biden taps Turk for No. 2 spot at Energy Department

Transition 2021: Biden taps Turk for No. 2 spot at Energy Department

By Zack Colman

02/10/2021 10:40 AM EST

President Joe Biden on Wednesday nominated David Turk, a high-ranking official at the International Energy Agency, to be the deputy Energy secretary.

The details: Turk is currently the deputy executive director at the Paris-based organization, which provides a global outlook at energy trends, helps steer international policy and serves a convener for industrialized countries to hash out energy market issues. He also advised on Biden DOE transition efforts.

In a statement, the White House said Turk has "focused on helping countries around the world on their clean energy transitions" and "directed analysis focused on digitalization and energy, hydrogen, and tracking progress on a wide range of clean energy technologies."

Turk worked on international technology and clean energy strategy in the Obama administration's Energy Department, helping launch Mission Innovation to spur global clean energy technology adoption.

Turk also has worked at the National Security Council and the State Department, where he was deputy special envoy for climate change, and on Capitol Hill.

What's next: Turk's role requires Senate confirmation.

Click here for more Pro 2021 Transition coverage, and be sure to sign up for the following topics on your settings page to ensure you receive all the transition content you need: Transitions and Departures, White House, Presidential Elections.

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https://subscriber.politicopro.com/energy/whiteboard/2021/02/transition-2021-biden-taps-turk-for-no-2-spot-at-energy-department-3986920

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Message

From: Nunez, Alejandra [Nunez.Alejandra@epa.gov]
Sent: 3/10/2021 5:36:49 PM
To: Rakosnik, Delaney [rakosnik.delaney@epa.gov]; Kabanda, Thierry [Kabanda.Thierry@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]
CC: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: FW: Clean Cars Meeting Request

Please see request from Vickie Patton, Margo Oge, and Chet France for a meeting on vehicle emission standards. (This is separate from EDF's request for a meeting on the same subject).
Thank you so much.

From: Vickie Patton <vpatton@edf.org>
Sent: Wednesday, March 10, 2021 10:45 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>
Cc: margo oge <margo.oge@gmail.com>; Chester France <cjfrance@sbcglobal.net>
Subject: Clean Cars Meeting Request

Dear Mr. Goffman, Ms. Nunez and Ms. Dunham,

We respectfully request a meeting to discuss the important opportunity to ensure healthier and longer lives for millions of people, address climate pollution, save families hard earned money at the gas pump, and create high quality manufacturing jobs by strengthening pollution safeguards for new motor vehicles. We would immensely value the opportunity to speak with you about these vital issues. (This request is separate from EDF's pending request for a meeting on a range of transportation related air pollution issues.)

Sincerely yours,

Margo Oge, Chet France, and Vickie Patton

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Message

From: Grundler, Christopher [grundler.christopher@epa.gov]
Sent: 2/8/2021 5:46:06 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]
CC: Tsirigotis, Peter [Tsirigotis.Peter@epa.gov]; Harvey, Reid [Harvey.Reid@epa.gov]; Srinivasan, Gautam [Srinivasan.Gautam@epa.gov]; Kocchi, Suzanne [Kocchi.Suzanne@epa.gov]
Subject: draft Revised CSAPR Update Rule (Preamble) for Your Review
Attachments: Draft for OAR-IO review_Final Revised CSAPR Update_preamble_02.08.21.docx

Joe and Tomás:

Attached for your review is the draft Revised CSAPR Update Rule premble. We need to begin FAR this Friday, so please complete your review of the materials by COB Wednesday, February 10 so that we can incorporate your changes into the FAR package. We are available anytime during this period to answer questions or discuss the draft materials as needed.

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Thanks,

Chris

Christopher Grundler, Director
Office of Atmospheric Programs
U.S. Environmental Protection Agency
202.343.9140 (o)
734.645.5221 (m)

Message

From: Nunez, Alejandra [Nunez.Alejandra@epa.gov]
Sent: 3/16/2021 1:17:37 PM
To: Campbell, Ann [Campbell.Ann@epa.gov]; Rakosnik, Delaney [rakosnik.delaney@epa.gov]
CC: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: FW: National Biodiesel Board -- Meeting Request
Attachments: NBB Request_EPA Regan_March 2021.pdf

From: Kurt Kovarik <kkovarik@biodiesel.org>
Sent: Monday, March 15, 2021 9:09 PM
To: Utech, Dan <Utech.Dan@epa.gov>
Cc: Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Tara Billingsley <tbillingsley@massiepartners.com>
Subject: National Biodiesel Board -- Meeting Request

Good evening Dan,

I'm writing on behalf of the Governing Board of the National Biodiesel Board. We are the national trade association representing biodiesel, renewable diesel and sustainable aviation fuel producers. Next week, our Governing Board will be holding a virtual meeting and we would welcome an opportunity to meet with Administrator Regan. We'd like to provide an update on the domestic biomass-based diesel industry and our efforts to decarbonize the nation's diesel transportation industry. We'd also very much like to hear from Administrator Regan on his priorities and interests in promoting low-carbon fuels, and answer any questions relating to our industry. Here is a link to a list of our Governing Board members. I've attached a formal letter requesting to meet as well.

Our meeting will be taking place virtually on March 23 & 24, and we could accommodate Administrator Regan any time between 1:30-6:00 ET on either day. I understand this request is somewhat last minute, but we're hoping that if the Administrator's schedule will allow, this would be a great opportunity to introduce him to a number of leaders in our industry in a single, brief meeting.

Thank you very much for your consideration and I look forward to hearing from you.

Best regards,

Kurt

Kurt Kovarik
National Biodiesel Board
Vice President, Federal Affairs
202-737-8801 I 202-868-3617 mobile
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CA@biodiesel.org

March 15, 2021

The Hon. Michael S. Regan, Administrator
Environmental Protection Agency
Office of the Administrator, 1101A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dear Administrator Regan,

Congratulations on your confirmation. On behalf of the National Biodiesel Board's members, I want to thank you for your commitment to make the Renewable Fuel Standard a priority and to ensure that America's agriculture sector has a seat at the table in addressing climate change. The nation's biomass-based diesel industry very much looks forward to working with you to ensure that biodiesel and its carbon reduction benefits continue to be a central pillar of the nation's efforts to meet climate goals.

NBB represents U.S. biodiesel, renewable diesel, bioheat®, and sustainable aviation fuel producers as well as soybean growers and waste fats and oil processors. We look forward to working with you to meet the nation's pressing need for clean transportation options.

During your confirmation hearing on February 3, you noted President Biden's focus on advanced biofuels. Biodiesel and renewable diesel are the most widely used advanced biofuels today. Every year, they meet more than 90 percent of the Renewable Fuel Standard's advanced biofuel volumes and a significant portion of the overall renewable fuel volumes. Our industry also produces other emerging advanced biofuels, such as heating oil, naphtha, and renewable jet fuel, to meet the RFS goals.

Biodiesel and renewable diesel are also vital to the success of state programs. Combined, they generate 45 percent of the carbon credits for both California's Low Carbon Fuel Standard and Oregon's Clean Fuels Program every year. California achieved an overall 6 percent reduction in the carbon intensity of its fuel in 2019, with biomass-based diesel leading the way. Both California and Oregon have extended

their programs through the next decade to capitalize on this success. Other states are looking at these programs as models.

Transportation is the largest source of U.S. carbon emissions and it is the sector most reliant on petroleum. Replacing petroleum with drop-in alternatives like biodiesel and renewable diesel immediately reduces carbon. And progress in reducing carbon today reduces the costs of carbon reduction in the future.

Biodiesel and renewable diesel also reduce particulate matter and hydrocarbon emissions that contribute to higher lung and heart disease rates associated with poor air quality. Progress in reducing the health costs and impacts of lung disease is vital right now. Several large cities, such as New York and Chicago, rely on biodiesel to fuel city fleets and heat buildings to meet their clean air goals.

Sustainable growth in the federal RFS is necessary to support the state goals. Moreover, our industry is experiencing demand destruction as a result of unwarranted small refinery exemptions. Biodiesel and renewable diesel volumes were reduced by 584 million gallons through the small refinery exemptions EPA granted over the past four years. That is a significant part of the 3 billion annual market under the RFS. Using petroleum instead of these renewable gallons will emit 5.5 million tons of carbon to the atmosphere. There are 45 exemption petitions for 2019 and 2020 awaiting EPA decisions. If granted, they could destroy demand for an additional 272 million gallons of biodiesel and renewable diesel in coming year and add 2.6 million metric tons of carbon to the nation's inventory.

We would appreciate the chance to meet with you at your earliest convenience to discuss the importance of the RFS to our industry as we pursue a vision to double production and use of biodiesel, renewable diesel, sustainable aviation, and bioheat® over the next decade. We will be happy to answer any questions you have about our industry's sustainable future growth under the RFS.

I look forward to hearing from you regarding a date and time that you can meet with members of the National Biodiesel Board.

Thank you for your consideration,

Kurt A. Kovarik

Kurt Kovarik
Vice President of Federal Affairs
National Biodiesel Board
kkovarik@biodiesel.org
202-737-8801

Message

From: POLITICO Pro [alert@email.politicopro.com]
Sent: 3/5/2021 7:56:05 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: China's new 5-year plan leaves climate advocates cold

China's new 5-year plan leaves climate advocates cold

By Kelsey Tamborrino

03/05/2021 02:54 PM EST

China's new five-year plan left climate change experts and environmentalists disappointed on Friday, as the world's biggest carbon emitter failed to offer new insights into how it plans to live up to its promises to eliminate greenhouse gas pollution.

Beijing's 14th five-year plan offered few details on how it will honor its pledge to become carbon-neutral by 2060 — as President Xi Jinping promised last year — and to peak its emissions by 2030. That's likely to put pressure on President Joe Biden and his climate envoy John Kerry to persuade China to increase its ambition to tackle climate change even as the two rival nations try to address disputes over trade, human rights and Beijing's efforts to expand its international influence.

China's new economic roadmap kept its target of reducing carbon emissions per unit of GDP by 18 percent through 2025, a measure Chinese leaders have focused on to increase its carbon efficiency of its economy rather than setting hard emissions goals that other industrialized nations have made as part of the Paris Climate Agreement, which the U.S. has rejoined under Biden.

That emissions target would allow China room for its overall emissions to increase at least 10 percent annually by 2025, wrote Yan Qin, lead analyst at Refinitiv Carbon Research, assuming 5 percent GDP growth per year through 2025. The five-year plan also said up to 20 percent of its total energy consumption would come from non-fossil fuel sources by 2025, but promised to keep up China's use of coal. The country is the No. 1 consumer of coal, which provides about 58 percent of its energy.

"The five-year plan sends an indecisive climate signal amidst great economic and geopolitical uncertainties," said Li Shuo, senior policy adviser of Greenpeace East Asia, in a statement. "Considering China's habit of under-committing and over-delivering five-year plans, these targets will hopefully hedge against a surge in further emission growth. But industrial groups will certainly point to the modest carbon intensity target as an excuse for business as usual."

Climate Analytics Chief Executive Bill Hare said the world is relying on its largest emitter to step up on climate change —"yet we see little of such action in this plan."

"There is no clear pathway for China to reach its net zero commitment — the government could do well to revise and strengthen its 2030 target to get its emissions onto that track," he added in a statement.

In a government work report delivered to China's parliament on Friday, Premier Li Keqiang said an "action plan" would be released later this year on how the country would meet the 2030 target, and he also promised to ease the country's dependence on fossil fuels, according to Reuters.

Those types of details will be critical, and the fact they were not released on Friday could signal splits inside the Chinese government.

"The key upshots are that there is a lot of scope for China to strengthen the targets and policies, and that the government is internally divided with different interests pushing for business as usual and for ambitious climate action," Lauri Myllyvirta, analyst with the Centre for Research on Energy and Clean Air, said in an email.

Myllyvirta wrote in a blog post that the five-year plan dropped two targets that were regularly featured in earlier plans: a five-year GDP growth target and a target for limiting total energy consumption. But Myllyvirta added the picture overall "is one of very gradual progress in aligning China's energy and emissions trends with the target of achieving carbon neutrality by 2060," and leaves the decisions about how fast to curb emissions growth and displace fossil energy "to the sectoral plans expected later this year."

Beijing's new plan comes shortly after Biden returned the U.S. to the Paris Agreement after former President Donald Trump pulled the U.S. out, making it briefly the only country in the world to disavow the pact. Biden and Kerry are aiming to put the U.S. at the forefront of the global effort to combat climate change despite the setbacks under Trump, and the administration is expected to release a new goal for emissions reductions in accordance with the Paris Agreement's mandates for each member nation to set its own targets.

The new U.S. goal is expected before Biden hosts an April 22 climate summit, the next major global meeting in the run-up to the annual Conference of Parties summit in Glasgow in November, where countries are expected to announce new goals toward combating climate change.

Drawing strong action from China will also be crucial for Biden's ambitious climate agenda, since Republican critics have seized on China's targets that allow it continue increasing its emissions as proof that the Paris Agreement is unfair the U.S.

It will be "essential" for the Biden administration "to articulate ambitious but realistic expectations towards China," Myllyvirta added, making clear "how it's evaluating progress and be prepared to deploy both collaborative and confrontational measures as appropriate."

Beijing reappointed Xie Zhenhua as its special climate envoy last month, a move seen as a bid to improve its diplomacy on the issue with the United States. Xie had headed China's climate negotiations for more than a decade, and it was his work with Kerry and the Obama administration's top U.S. negotiator, Todd Stern, that helped seal the Paris Agreement in 2015.

Data released last week from the International Energy Agency showed China's overall CO2 emissions in 2020 increased by 0.8 percent from 2019 levels as its economy recovered over the course of the year from the pandemic and emissions rebound. China saw a 7 percent increase in emissions in December 2020 compared with a year earlier, according to IEA.

The White House deferred comment to the State Department, which did not respond to a request for comment.

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https://subscriber.politicopro.com/article/2021/03/chinas-new-5-year-plan-leaves-climate-advocates-cold-2038624

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Message

From: E&E News [ealerts@eenews.net]
Sent: 2/22/2021 11:52:20 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: February 22 -- Climatewire is ready

Climatewire -- Policy. Science. Business.

Read today's Climatewire on the web

CLIMATEWIRE

AN E&E NEWS PUBLICATION

CLIMATEWIRE — Mon., February 22, 2021

READ FULL EDITION

1. ENERGY TRANSITIONS:
Will Texas blackout offer coal a lifeline?

Texas halved its use of coal in the last decade. But the power crisis that seized the state last week could alter plans for future closures.

TOP STORIES

2. WHITE HOUSE:
Meet Biden's climate personnel adviser

3. WHITE HOUSE:
Kerry: Sorry about Trump. But world must step up on climate

CLIMATE IMPACTS

4. SCIENCE:
Mountain mammals climb higher to beat the heat

5. EXTREME WEATHER:
U.S. flood damage expected to jump 60% by 2051

6. COURTS:
Judge refuses to put NEPA litigation on ice

IN THE STATES

7. VIRGINIA:
'Clean cars' bill clears major hurdle in state Senate

INTERNATIONAL

8. CANADA:

Trudeau, Biden and their cabinets to meet virtually tomorrow

9. UNITED KINGDOM:

Tabloids do a U-turn, embrace climate advocacy

BUSINESS

10. TECHNOLOGY:

U.N. climate envoy joins software company's board

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Climatewire is written and produced by E&E News, which is staffed by a dedicated reporting team within the POLITICO newsroom. It provides comprehensive coverage of all aspects of climate change issues. From international agreements on carbon emissions to alternative energy technologies to state and federal GHG policies to corporate sustainability, Climatewire plugs readers into the information they need to stay abreast of this complex issue. Climatewire publishes daily by 7:00 a.m.

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Message

From: E&E News [ealerts@eenews.net]
Sent: 2/16/2021 6:42:26 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: February 16 -- Greenwire is ready

Greenwire -- The Leader in Energy and Environment News

Read today's Greenwire on the web

GREENWIRE

AN E&E NEWS PUBLICATION

GREENWIRE — Tue., February 16, 2021

READ FULL EDITION

1. CHEMICALS:

Firefighters' Catch-22: Protective gear full of carcinogens

Firefighters are exposed to cancer-causing chemicals in the very clothing and gear that is meant to protect them, a paradox that stems from standards set under industry influence.

TOP STORIES

2. WILDLIFE:

Migratory bird advocates flock together

3. ENVIRONMENTAL JUSTICE:

Alaska Native village left scrambling for clean water

4. PUBLIC LANDS:

Judge denies Apache bid to block Ariz. copper land swap

POLITICS

5. NOMINATIONS:

EPA deputy nominee reports few financial conflicts

6. CAMPAIGN 2022:

Pa. Senate hopeful shuns fossil fuel donations

NATURAL RESOURCES

7. ANTARCTIC:

Geologists drilling ice shelf discover deepwater sponges

8. CLIMATE:

Report spotlights prime tracts for U.S. reforestation

9. ENDANGERED SPECIES:

Baby right whale found dead on Fla. beach

LAW

10. FEDERAL AGENCIES:

Judge blocks sale of National Archives in Seattle

11. WILDFIRES:

Colo. judge maintains charges for Dane accused in blaze

12. FISHERIES:

3 more charged in sturgeon caviar investigation

PUBLIC HEALTH

13. CHEMICALS:

Study: Car commuters at higher risk of carcinogen exposure

AIR AND WATER

14. DRINKING WATER:

Maine activists worry about sale of Poland Spring

NATURAL DISASTERS

15. EXTREME WEATHER:

Winter's wrath: Bitter cold, no power and a deadly tornado

16. ROCKY MOUNTAINS:

Deaths highlight once-in-a-decade avalanche danger

STATES

17. SOUTH CAROLINA:

Lawmakers consider breaking up public health, enviro agency

18. WISCONSIN:

Wolf hunt to start next week as legal fight continues

19. FLORIDA:

Mutilated pelicans found at pier dubbed 'death row'

INTERNATIONAL

20. MIDDLE EAST:

Huge fire on Afghan-Iran border destroys fuel tankers

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Greenwire is written and produced by E&E News, which is staffed by a dedicated reporting team within the POLITICO newsroom. It's the one-stop source for those who need to stay on top of all of today's major energy and environmental action with an average of more than 20 stories a day. Greenwire covers a complete spectrum of issues, from energy policy to Clean Air Act litigation to public lands management. Greenwire publishes daily by 1:30 p.m.

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Message

From: E&E News [ealerts@eenews.net]
Sent: 3/2/2021 12:37:04 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: March 2 -- Energywire is ready

Energywire -- The Transformation of the Energy Sector

Read today's Energywire on the web

ENERGYWIRE

AN E&E NEWS PUBLICATION

ENERGYWIRE — Tue., March 2, 2021

READ FULL EDITION

1. ELECTRICITY:

Texas grid crisis: Resignations, lawsuits and bankruptcy

Texas' top electricity regulator resigned yesterday as the state's largest electric cooperative filed for bankruptcy, Energy Secretary Jennifer Granholm called for grid changes, companies reported losses in the billions of dollars, and lawsuits mounted after this month's historic blackouts.

TOP STORIES

2. CERAWEEK:

'Very risky business.' Oil CEOs on survival in Biden era

3. RENEWABLE ENERGY:

Biden bucks solar group, sides with Trump on tariffs

4. OIL AND GAS:

API weighs support for carbon pricing

ENERGY TRANSITIONS

5. TECHNOLOGY:

Bill Gates, Amazon stir controversy with clean energy plans

6. EMISSIONS:

Gasoline delivery is a thing. Is that good or bad for CO2?

LAW

7. SUPREME COURT:

Ex-chair urges FERC to examine failed transmission case

OIL AND GAS

8. ADVOCACY:

Exxon board adds activist after attacks on returns, climate

9. ENERGY MARKETS:

Texas hauls gasoline from other states for 1st time in years

10. BUSINESS:

Venezuela oil exports drop after U.S. sanctions on traders

ELECTRICITY

11. COAL:

N.M. regulators want more details on power plant sale

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ABOUT ENERGYWIRE – THE TRANSFORMATION OF THE ENERGY SECTOR

Energywire is written and produced by E&E News, which is staffed by a dedicated reporting team within the POLITICO newsroom. Energywire brings readers deep, broad and insightful coverage of the transformation of the energy sector. Energywire focuses on the business, environmental and political issues surrounding the rapidly changing energy industry and the numerous factors -- from expanding natural gas use to renewables and more -- that are altering the traditional electric utility industry. Energywire publishes daily by 8:00 a.m.

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Message

From: Morgan, Ruthw [morgan.ruthw@epa.gov]
Sent: 2/12/2021 5:29:17 PM
Subject: Administrator's Weekly Report for the week ending February 12, 2021.
Attachments: Administrator Weekly Report 021221.pdf; Administrator Weekly Report 021221.docx

Good afternoon Acting Administrator Nishida and colleagues,

Attached please find the **Administrator's Weekly Report** (in both PDF and Word), which includes programs and regional office updates for the week ending February 12, 2021.

Sincerely,
Ruth

Ruthw Morgan, Special Assistant
Office of the Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460
(202) 564-1326
Morgan.Ruthw@epa.gov

Message

From: POLITICO Pro [alert@email.politicopro.com]
Sent: 2/5/2021 10:02:03 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: 'A big promise': Biden's climate spending pledge faces early test

'A big promise': Biden's climate spending pledge faces early test

By Zack Colman

02/05/2021 05:00 AM EST

President Joe Biden has promised 40 percent of the $2 trillion he's aiming to spend on climate change will go to disadvantaged communities that have suffered the most from pollution and crumbling infrastructure — but figuring out how to spend that potential mountain of cash may vex the places vying for it and the lawmakers tasked with doling it out.

People at the highest levels of Biden's administration are huddling to try to meet the 120-day deadline Biden set out in his sprawling executive order on climate change to issue recommendations for spending that money. And figuring out the details while avoiding the blunders that could undermine confidence in the program will be crucial for generating political momentum for his climate agenda — something Biden's former boss President Barack Obama struggled to do with his 2009 stimulus package.

"That's a big promise," said Cecilia Martinez, who heads the environmental justice portfolio at the White House Council on Environmental Quality, one of the offices Biden tasked with crafting the blueprint. "When we talk about 40 percent to the most vulnerable and the communities that need it most, that's a sign of achievement. And from the get-go that is what we're all working on."

With much of the country struggling under the economic slowdown from the pandemic, there is no shortage of targets. Environmental organizers from low-income and communities of color across the country are linking up with mainstream green groups to identify their needs — and the list goes far beyond traditional environmental concerns to include things like personal protective equipment, community health centers and affordable housing.

With such a large amount of money at stake, it immediately raises fears about whether it will reach the intended areas.

"I'm very concerned about how that 40 percent is administered," said Peggy Shepard, executive director with WE ACT for Environmental Justice, a group that's in frequent contact with Biden's team. She pointed to criticisms in California about the 35 percent share of the $5 billion raised from the state's emissions trading program that's intended to be directed to hard-up communities. "They don't always know where it's gone," she said.

That type of accountability will be critical for a program that's certain to draw scrutiny from fiscal conservatives and Republicans opposed to big government programs.

Those concerns are front and center for lawmakers like Rep. Donald McEachin (D-Va.), a Biden ally who has been working with outside groups on the issue.

"Making sure that 40 percent ends up on the target and doesn't get siphoned off to some area that no one could possibly imagine being an [environmental justice] community is going to be the great challenge of this Congress," he told POLITICO.

What Biden's Jan. 27 executive order lacks in specifics, it makes up for in ambition. Among promises to protect large swaths of land, create a new civilian conservation corps and deliver help to suffering coal-producing regions, its call for 40 percent of spending to go to disadvantaged communities for an array of projects: investments in clean energy and energy efficiency; clean transit; affordable and sustainable housing; training and workforce development; the remediation and reduction of legacy pollution; and the development of clean water infrastructure.

But there's little clarity on how to identify which communities would qualify for those benefits.

Shepard is working with organizations through the Equitable and Just Climate Platform, which includes big green organizations like the Sierra Club, Natural Resources Defense Council and League of Conservation Voters, and local and regional groups focused on environmental justice that advocate for communities most heavily affected by pollution and disinvestment. Others outside that coalition, including academics, are also working out what data, social indicators and programs merit consideration.

McEachin said the definition of communities eligible for funds is still being "wordsmithed," and he hoped it would focus on "historically discriminated-against frontline communities who have borne the brunt of pollution," regardless of race.

The executive branch and Congress must provide oversight so funding isn't abused or wasted, McEachin added. "There are always going to be folks who try to take advantage of the system," he said, "and it's our jobs to make sure that doesn't happen."

CEQ's Martinez said the definitions for which communities and priorities receive funding are being "sorted out," with input from people on Capitol Hill along with environmental groups inside and outside Washington, D.C.

At the White House, Martinez, domestic climate chief Gina McCarthy and her deputy, Ali Zaidi, are playing key roles. The Office of Management and Budget is also involved. David Kieve, who led outreach to environmental groups during the campaign, has continued that role as part of the administration.

So far, lawmakers who want to weigh in have received little direction from the administration, though a House Democratic leadership aide said there have been some initial talks with White House officials.

"They're just getting staffed up," said the aide, who asked for anonymity to speak candidly about conversations with the administration. "These are things that we know are on the list of things to talk about but haven't grappled with them about in detail yet."

Tasking Congress to put Biden's plan into action is already running into hurdles. While the administration is showing signs of flexibility on its proposal for a $1.9 trillion pandemic relief package, some Democrats are eyeing budget reconciliation to move it through Congress, since that requires only a simple majority vote in the Senate. But that tool's rules likely prevent Congress from carving out spending for specific populations, potentially making the plan to help disadvantaged areas specified in the executive order off-limits.

"I don't think that it's impossible. I think that it's going to be difficult," a Senate Democratic aide who has been involved in the discussions said of the targeted money for disadvantaged communities.

Still, the administration might have some discretion in how its disburses the funds from agencies, the staffer added.

"This is a commitment from the president so there are a lot of levers in terms of how the administration chooses to implement these programs once they're created," the person said.

The administration will surely be keeping track. Its climate executive order also called for the Office of Management and Budget to compile and publish a public scorecard regarding its environmental justice spending efforts.

How it will tally those wins is unclear. McEachin, for example, said only green initiatives should count toward Biden's 40 percent goal, while some local organizers believe funding for essentials like healthcare provision should count in areas that suffer from significant health ailments tied to pollution.

"It doesn't appear to be that there is a very neat answer," said Julian NoiseCat, vice president for policy and strategy at progressive think tank Data for Progress. "It's certainly true that a lot of people are thinking about this."

Democratic lawmakers have signaled they're eager to help shape Biden's plans. Sens. Ed Markey (Mass.) and Tammy Duckworth (Ill.) and Missouri Rep. Cori Bush introduced legislation (S. 101 (117)) mandating the 40 percent spend for environmental justice communities. The measure faces long odds in the Senate, despite Data for Progress polling that showed 55 percent of voters -- including 51 percent of Republicans -- endorse employing an "equity score" on legislation to assess the climate and environmental effects to communities.

Some Hill staffers who spoke with POLITICO suggested the limited flexibility that would be available through budget reconciliation means their safest route for achieving Biden's target is increasing spending for programs that have traditionally flowed to low-income and communities of color, such as the Energy Department's weatherization assistance program.

But that won't cut it, said Harold Mitchell, a former South Carolina state representative who has been working with the Biden administration on their plan.

"Some folks [in disadvantaged areas] didn't even know certain programs in certain agencies existed. So from that standpoint, how do you fix something that wasn't utilized?" said Mitchell, who now runs environmental justice organization Regenesis Community Development Corporation.

Mitchell said Biden has done a good job in winning over local organizers who were skeptical of his intentions after he locked up the Democratic nomination last spring, and that engagement from his team has remained constant. Securing that local level buy-in will be key for raising grass-roots pressure, particularly in Republican-led states that might resist the climate spending efforts like they did with Obama's 2009 federal stimulus, Mitchell said.

Part of that exercise has included hearing directly from communities, the White House's Martinez said, and many of their needs are not narrowly environmental in nature. Activists say the federal government's only tool for identifying problem areas, the EPA's EJSCREEN, is inadequate, since It only weighs concentration for one pollutant across one demographic at a time.

That prompted the Biden administration to form separate interagency groups on environmental justice as well as public health and equity to assess the interconnected web of pollution, health, housing and income conditions affecting certain communities.

It also called for expanding the EJSCREEN tool to account for more data and to measure cumulative ways in which pollution, economics and social indicators like race are linked, building off similar models in states like New York, Washington, Maryland and California.

That endeavor is, in a word, complicated.

"Everybody's not facing the same problem, issue, around the country. I think that's the beauty of them at least taking the time to get it right," Mitchell, of South Carolina, said. "This is serious, under-the-microscope examining the problem to make sure that the antidote that goes in is going to fix the problem."

To view online:
https://subscriber.politicopro.com/energy/article/2021/02/a-big-promise-bidens-climate-spending-pledge-faces-early-test-2032801

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Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/3/2021 10:34:05 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Glick: MOPR is 'not sustainable'

Glick: MOPR is 'not sustainable'

By Eric Wolff

02/03/2021 05:33 PM EST

FERC Chair Rich Glick promised a new approach to capacity markets, saying minimum offer price rules are "not sustainable" as part of a speech where he laid out his priorities Wednesday before the Energy Storage Association.

The details: Glick, long a critic of MOPRs, which are designed to undermine state subsidies of renewable generation, said that the rules in New York, PJM Interconnection and New England drove up power prices in order to prop up legacy fossil fuel generation.

"I think around the country ... there's a growing understanding that these programs don't have a long life in the future — people realize they're not sustainable," he said. "They raise prices excessively."

Glick also said he wanted to examine ways "eliminate barriers" to a variety of generation resources like battery storage and distributed energy resources, in the Southeast and the West. FERC issued orders under former Chair Neil Chatterjee that required RTOs to allow these resources access to markets. However, those orders did not affect areas where FERC has jurisdiction but which are not in the organized markets.

And he also emphasized the need for FERC to develop new transmission policy to entice developers to build the long, high-voltage lines needed needed to link wind and solar resources in the middle of the country to population centers.

"We have to substantially build out the grid more than we're doing," he said. "We have to figure out how to break the juggernaut and encourage greater investment of long-distance transmission to access this resource," he said.

"We'll hopefully do that sooner rather than later," he added.

The context: Glick became the chair just under 13 days ago, a day after President Joe Biden took office. His commission has thus far avoided any hot button topics, but Biden has placed addressing climate change at the center of his agenda, and observers are looking to FERC to further reduce emissions from the electric grid.

To view online:
https://subscriber.politicopro.com/energy/whiteboard/2021/02/glick-mopr-is-not-sustainable-3986798

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Message

From: Dunham, Sarah [Dunham.Sarah@epa.gov]
Sent: 2/2/2021 6:38:00 PM
To: Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: FW: Tuesday Cars Meeting
Attachments: Feb 2 2021 Light-duty Vehicle Options Paper_ with Option 2b.docx

Draft of paper

From: Dunham, Sarah
Sent: Tuesday, February 2, 2021 10:34 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: RE: Tuesday Cars Meeting

Joe-
We added the variant you suggested to the paper (option 2b). Please see attached.
Thanks
Sarah

From: Dunham, Sarah
Sent: Tuesday, February 2, 2021 8:39 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: RE: Tuesday Cars Meeting

Thanks Joe—Sorry I missed the call. Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

We will add that variant to the paper.

From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Monday, February 1, 2021 9:29 PM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>
Subject: RE: Tuesday Cars Meeting

Ex. 5 Deliberative Process (DP)

Thanks.

Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency

From: Dunham, Sarah <Dunham.Sarah@epa.gov>
Sent: Monday, February 1, 2021 8:30 PM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: RE: Tuesday Cars Meeting

Hi Joe-

Ex. 5 Deliberative Process (DP)

Sarah

From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Monday, February 1, 2021 7:38 PM
To: Dunham, Sarah <Dunham.Sarah@epa.gov>
Subject: RE: Tuesday Cars Meeting

Ex. 5 Deliberative Process (DP)

Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency

From: Dunham, Sarah <Dunham.Sarah@epa.gov>
Sent: Monday, February 1, 2021 8:58 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>
Subject: RE: Tuesday Cars Meeting

Thanks Joe. We will pull some options together well before 5:30 Tuesday (in time for us to have a pre discussion if we

Ex. 5 Deliberative Process (DP)

From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Monday, February 1, 2021 8:38 AM

To: Dunham, Sarah <Dunham.Sarah@epa.gov>
Subject: Tuesday Cars Meeting

Ex. 5 Deliberative Process (DP)

Thanks.

Meanwhile, here is the Zoom link:

Ex. 6 Personal Privacy (PP)

Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency

Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 2/24/2021 7:58:18 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Haaland avoids landmines on second day of hearing

Haaland avoids landmines on second day of hearing

By Eric Wolff

02/24/2021 02:57 PM EST

Republicans peppered Interior secretary nominee Rep. Deb Haaland with questions over her past criticism of fossil fuels during the second day of her confirmation hearing on Wednesday, but the second-term lawmaker from New Mexico mostly stuck to her script, promising to work with Congress and consult with lawmakers over issues that concerned their states.

The details: Sen. John Barrasso (R-Wyo.), the committee's top Republican, who had called Haaland's views "radical" ahead of the hearing, displayed a chart listing Haaland's previous comments calling for an end to fracking on public lands and endorsing the "keep it in the ground" view of fossil fuel extraction.

Barasso also took a swipe at statements Haaland made during her 2018 campaign for Congress when she suggested replacing New Mexico's oil and gas revenue with taxes on legalized marijuana.

"We know what your stance is on replacing the revenue from the energy jobs that power our economy and the energy that powers our country," he said. "And your preference is to turn to drugs."

But Haaland ducked the attack.

"Well, I think the point of that, ranking member, was to say that we should diversify our funding streams for education and not just rely on one," she said.

Sens. Bill Cassidy (R-La.), Cindy Hyde-Smith (R-Miss.) and others sought to characterize Haaland as anti-jobs and anti-conservation.

"In my state, the funding we get from revenue sharing with U.S. energy helps fund our coastal restoration, which is to say our adaption to climate change," Cassidy said as part of a five-minute statement that did not include any questions for Haaland. He also pointed out that the Land and Water Conservation Fund receives its cash from money generated from offshore oil and gas production.

Sen. Lisa Murkowski (R-Alaska), among the more moderate Republicans in the caucus and a potential Republican "yes" vote for Haaland, covered a wide array of issues, including the controversial Izembek Road, which would link the remote 800-person town of King's Cove to a nearby airfield.

And Murkowski pressed Haaland on her view of the Bureau of Land Management's environmental review of the 1.2 million acre Willow Project located in the National Petroleum Reserve on Alaska's North Slope. The project had been approved by Interior last year, but progress has been halted as part of the Biden administration's pause of all drilling on federal lands.

"If we can't produce oil in the National Petroleum Reserve, it causes one to question, where?" Murkowski asked.

But Haaland largely avoided any mistakes during the hearing, promising to work on issues with the senators and agreeing to meet with the people of King's Cove early in her tenure, if she is confirmed. And she sought to assure senators of her commitment to promote jobs on federal lands.

"What I can say is I'm going to fight hard for every single job — I want people to work," she said. "I know what that's like. And I promise you that wherever I have opportunities, I will take them to make sure that people have secure futures. Every family deserves to have a roof over their head."

What's next: Senators have until 6 p.m. Wednesday to submit additional questions in writing. Chair Joe Manchin (D-W.Va.) has not indicated when he would hold a committee vote.

To view online:
https://subscriber.politicopro.com/energy/article/2021/02/haaland-avoids-landmines-on-second-day-of-hearing-2037172

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Message

From: Kabanda, Thierry [Kabanda.Thierry@epa.gov]
Sent: 3/4/2021 6:17:30 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Carbonell, Tomas [Carbonell.Tomas@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]
CC: Campbell, Ann [Campbell.Ann@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]; Rakosnik, Delaney [rakosnik.delaney@epa.gov]
Subject: FW: FW: Meet with Anne Kelley of Ceres
Attachments: Topics for EPA discussion.pdf

Good afternoon,

Please see attached, a list of what Ceres plans to discuss tomorrow.

From: Julie Brown <jbrown@ceres.org>
Sent: Thursday, March 4, 2021 12:19 PM
To: Kabanda, Thierry <Kabanda.Thierry@epa.gov>
Subject: Re: FW: Meet with Anne Kelley of Ceres

Here it is attached below:

Best,
Julie

On Thu, Mar 4, 2021 at 12:13 PM Julie Brown <jbrown@ceres.org> wrote:

> Hi, she is finishing it up now, I will send shortly. Thank you for your patience.
>
> Best,
> Julie
>
> On Thu, Mar 4, 2021 at 12:02 PM Kabanda, Thierry <Kabanda.Thierry@epa.gov> wrote:
>
> > Hey Julie,
> >
> > Just following up on this meeting for tomorrow. Thanks!
> >
> > **From:** Julie Brown <jbrown@ceres.org>
> > **Sent:** Wednesday, March 3, 2021 4:06 PM
> > **To:** Kabanda, Thierry <Kabanda.Thierry@epa.gov>
> > **Subject:** Re: FW: Meet with Anne Kelley of Ceres
> >
> > Hi,

She said she would have it by EOD today. I'll remind her.

On Wed, Mar 3, 2021 at 3:45 PM Kabanda, Thierry <Kabanda.Thierry@epa.gov> wrote:

> Hey Julie,
>
> Did you ever get an answer on this?

From: Julie Brown <jbrown@ceres.org>
Sent: Tuesday, March 2, 2021 1:12 PM
To: Kabanda, Thierry <Kabanda.Thierry@epa.gov>
Subject: Re: FW: Meet with Anne Kelley of Ceres

Hi,

I mentioned it to her yesterday and she said she would let me know. I will check in with her again and should have something by EOD or tomorrow.

Best,

Julie

On Tue, Mar 2, 2021 at 1:01 PM Kabanda, Thierry <Kabanda.Thierry@epa.gov> wrote:

> Hey Julie,
>
> Any word back from Anne on this? Thanks!

From: Julie Brown <jbrown@ceres.org>
Sent: Monday, March 1, 2021 10:00 AM
To: Kabanda, Thierry <Kabanda.Thierry@epa.gov>
Subject: Re: FW: Meet with Anne Kelley of Ceres

Good morning,

I will check-in with her about that and get back to you.

Best,

Julie

On Mon, Mar 1, 2021 at 9:57 AM Kabanda, Thierry <Kabanda.Thierry@epa.gov> wrote:

> Good morning Julie,
>
> Do you know the topics that Anne is wanting to discuss with Joe on Friday?
>
> ---
> **From:** Campbell, Ann <Campbell.Ann@epa.gov>
> **Sent:** Monday, March 1, 2021 9:34 AM
> **To:** Kabanda, Thierry <Kabanda.Thierry@epa.gov>; Rakosnik, Delaney <rakosnik.delaney@epa.gov>
> **Subject:** RE: Meet with Anne Kelley of Ceres
>
> Would be good if we could get a sense of the topics Ceres would like to cover during this meeting. Thank you.
>
> Ann (Campbell) Ferrio
>
> Chief of Staff
>
> EPA/Office of Air and Radiation
>
> Office: 202 566 1370
>
> ---
> **From:** Kabanda, Thierry <Kabanda.Thierry@epa.gov>

Sent: Monday, March 1, 2021 9:30 AM
To: Campbell, Ann <Campbell.Ann@epa.gov>; Rakosnik, Delaney <rakosnik.delaney@epa.gov>
Subject: RE: Meet with Anne Kelley of Ceres

Not sure. However, Joe mentioned that he wanted it on the calendar as soon as we can get it.

From: Campbell, Ann <Campbell.Ann@epa.gov>
Sent: Monday, March 1, 2021 9:29 AM
To: Kabanda, Thierry <Kabanda.Thierry@epa.gov>; Rakosnik, Delaney <rakosnik.delaney@epa.gov>
Subject: Meet with Anne Kelley of Ceres

Do we know what topics may be discussed during this meeting?

Subject: Meet with Anne Kelley of Ceres

Location: Microsoft Teams Meeting

Start: Fri 3/5/2021 4:00 PM

End: Fri 3/5/2021 5:00 PM

Recurrence: (none)

Meeting Status: Meeting organizer

Organizer: Goffman, Joseph

Required Attendees: Anne L. Kelly

Optional Attendees: Julie Brown

Categories: Blue Category

Microsoft Teams meeting

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Julie Brown

Assistant to the Vice Presidents

Ceres

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Boston, MA 02111

617-247-0700 ext. 114

jbrown@ceres.org

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General: Introduction to Ceres and our business / investor bench. Interested in offering support for EPA rulemaking and environmental justice programs.

1.CAFE Standards

1. Plan for replacing Trump standards - Our network believes CA agreement should be floor - should be closer to or equivalent to Obama standards
2. for post 2026 standards:
    a. 60% reduction in GHG emissions by 2030, and
    b. standards putting the sector on road to 100% ZEV sales by 2035.

2.Methane Rules: Any sense of plans/timing? Other criteria pollutants to be regulated of NAAQS to the strengthened?

3.Power Plant Rules: Any sense of plans/timing? Likelihood of supporting CES?

4. **Environmental Justice:** Key programs/staff/plans?

Message

From: POLITICO Pro Energy [alert@email.politicopro.com]
Sent: 3/3/2021 7:43:09 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: GOP senators to Biden EPA, CEQ nominees: 'You have a lot to answer for'

GOP senators to Biden EPA, CEQ nominees: 'You have a lot to answer for'

By Alex Guillén, Annie Snider

03/03/2021 02:40 PM EST

Two top environmental nominees took fire from Republicans on Wednesday for their roles in developing Obama-era regulations and recent executive actions taken by President Joe Biden, raising questions about how much bipartisan support they ultimately may garner.

The hearing of the Senate Environment and Public Works Committee was to review the nominations of Brenda Mallory to chair the White House Council on Environmental Quality and Janet McCabe to be deputy EPA administrator. Mallory previously served in the Obama administration as CEQ's general counsel and McCabe as EPA's acting air chief under then-Administrator Gina McCarthy, who is now Biden's national climate adviser.

Regulatory redux: Multiple Republicans criticized the nominees' participation in several Obama rulemakings, including the Clean Power Plan rule that was designed to cut carbon emissions from the power sector. "The Clean Power Plan was designed not to protect the environment, but to hurt fossil energy," said Sen. Shelley Moore Capito (R-W.Va.).

Sen. Kevin Cramer (R-N.D.) criticized the Clean Power Plan for quadrupling his state's reduction requirements between the proposed and final versions.

"You have a lot to answer for, frankly, with regard to what you called your proudest accomplishment," he said, adding: "For me to vote for you, I'm going to have to explain myself pretty clearly to North Dakotans."

McCabe replied that she consulted with state officials and incorporated into the rule flexibilities and options for emissions reductions. "And I know many disagreed with the outcome of that rule, but in terms of listening to people and hearing people and taking everybody's perspective into account we certainly did that in the lengthy process that we went through on the Clean Power Plan," she said.

Cramer was among the panel's four Republican members who voted last month to advance North Carolina Department of Environmental Quality Secretary Michael Regan's nomination for the top post at EPA despite his misgivings about the Biden administration's environmental agenda.

CEQ focus: Sen. Cynthia Lummis (R-Wyo.) questioned the Obama-era social cost of carbon, which was recently reinstated by the Biden administration on an interim basis while an interagency working group completes a more thorough overhaul of the figure that seeks to assign a cost to the emissions driving climate change.

"I raise this issue to reinforce the need for openness and transparency in how critical data is developed. I think this is particularly important when the figure is used to rationalize costly, job-killing new regulations," Lummis said.

Mallory replied that the Obama social cost of carbon took years to develop and involved "extensive" public participation, and she said that's why the Biden administration "felt that they could move forward with an updated version of that estimate now while a new process is being set up and an opportunity for public participation will be included in it."

Permitting: Senators also asked Mallory how she would balance the desire to quickly permit infrastructure projects — a top priority for Democrats and the Biden administration as they begin talks on a massive stimulus bill — with the need to ensure that communities understand the impacts of that work and have a voice in the process, as required by the National Environmental Policy Act.

"I view the challenge of finding a way to ensure that NEPA is serving its multiple purposes in a way that allows the president's full agenda to be met as the challenge that we face," Mallory said in response to questioning from Sen. Ben Cardin (D-Md.).

"It not only has to create an opportunity for there to be a full, robust analysis of the impacts on major projects, it has to create an opportunity for there to be a way for citizens and the community to engage. But it also has to be done in a way that ensures that we have significant infrastructure projects, and that economic recovery which is based on those projects can occur," she said.

What's next: Chair Tom Carper (D-Del.) gave the nominees until March 17 to respond to written questions from senators. A committee vote on their nominations could be scheduled thereafter.

Regan's nomination, which cleared committee 14-6 last month, has not yet been scheduled for final floor passage.

To view online:
https://subscriber.politicopro.com/energy/whiteboard/2021/03/gop-senators-to-biden-epa-ceq-nominees-you-have-a-lot-to-answer-for-3987365

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From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 3/9/2021 11:00:26 PM
To: OAR Briefings [OAR_Briefings@epa.gov]
Subject: FW: 031121: Materials for OAR Program Overview Briefing
Attachments: OAR Overview March 2021_final.pptx; OAR Overview_Administrator Briefing Memo.docx

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

From: Campbell, Ann
Sent: Tuesday, March 9, 2021 6:00 PM
To: Lance, Kathleen <Lance.Kathleen@epa.gov>
Cc: Kim, Eun <Kim.Eun@epa.gov>
Subject: 031121: Materials for OAR Program Overview Briefing

As requested, please find attached OAR's materials for the program briefing anticipated on March 11. Thank you.

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

Message

From: E&E News [ealerts@eenews.net]
Sent: 2/17/2021 12:15:28 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: February 17 -- E&E Daily is ready

E&E Daily -- Congress. Legislation. Politics.

Read today's E&E Daily on the web

E&E DAILY

AN E&E NEWS PUBLICATION

E&E DAILY — Wed., February 17, 2021

READ FULL EDITION

1. INTERIOR:
Committee schedules Haaland confirmation hearing

The process to confirm New Mexico Democratic Rep. Deb Haaland to be the next Interior secretary — and the first Native American Cabinet member — will begin in earnest next week.

TOP STORIES

2. NATURAL RESOURCES:
Democrats set vote on major lands, conservation package

3. ENERGY POLICY:
Lawmakers spin Texas blackouts, demand federal scrutiny

4. POLITICS:
Senate Republicans shrug off Trump impeachment backlash

ON THE HILL

5. FORESTS:
Lawmakers launch wildfire caucus, push response bills

6. HOUSE:
Republican broadband agenda likely to hit green wall

IN COMMITTEE

7. CLIMATE:
Bipartisan lawmakers revive carbon-capture credit bill

8. REGULATIONS:
House Republicans introduce rule-busting bills

UPCOMING HEARINGS AND MARKUPS

9. CALENDAR:

Activity for February 15 - February 21, 2021

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Message

From: Campbell, Ann [Campbell.Ann@epa.gov]
Sent: 3/10/2021 5:04:09 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: FW: [EXTERNAL] FW: Clean Cars Meeting Request

FYSA

Ann (Campbell) Ferrio
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

From: Vickie Patton <vpatton@edf.org>
Sent: Wednesday, March 10, 2021 11:38 AM
To: Kabanda, Thierry <Kabanda.Thierry@epa.gov>
Cc: Campbell, Ann <Campbell.Ann@epa.gov>; Rakosnik, Delaney <rakosnik.delaney@epa.gov>
Subject: RE: [EXTERNAL] FW: Clean Cars Meeting Request

Good Morning and thank you so much. This meeting request is focused on clean cars and includes leading experts, Margo Oge, outside of EDF to provide additional perspectives on a more focused set of issues. Warmest wishes, Vickie

From: Kabanda, Thierry <Kabanda.Thierry@epa.gov>
Sent: Wednesday, March 10, 2021 9:27 AM
To: Vickie Patton <vpatton@edf.org>
Cc: Campbell, Ann <Campbell.Ann@epa.gov>; Rakosnik, Delaney <rakosnik.delaney@epa.gov>
Subject: [EXTERNAL] FW: Clean Cars Meeting Request

Good morning Vickie,

Just following up, trying to seek some clarity on how this meeting defers from the pending request we have on air pollution issues? Thanks.

Thierry Kabanda, MBA
Staff Assistant
EPA/Office of Air and Radiation
Office: (202)-564-8604
Cell: (202)-281-6537

From: Vickie Patton <vpatton@edf.org>
Sent: Wednesday, March 10, 2021 10:45 AM
To: Goffman, Joseph <Goffman.Joseph@epa.gov>; Nunez, Alejandra <Nunez.Alejandra@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>
Cc: margo oge <margo.oge@gmail.com>; Chester France <cjfrance@sbcglobal.net>
Subject: Clean Cars Meeting Request

Dear Mr. Goffman, Ms. Nunez and Ms. Dunham,

We respectfully request a meeting to discuss the important opportunity to ensure healthier and longer lives for millions of people, address climate pollution, save families hard earned money at the gas pump, and create high quality manufacturing jobs by strengthening pollution safeguards for new motor vehicles. We would immensely value the opportunity to speak with you about these vital issues. (This request is separate from EDF's pending request for a meeting on a range of transportation related air pollution issues.)

Sincerely yours,

Margo Oge, Chet France, and Vickie Patton

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Message

From: DeLuca, Isabel [DeLuca.Isabel@epa.gov]
Sent: 2/18/2021 4:47:17 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]; Millett, John [Millett.John@epa.gov]; Nunez, Alejandra [Nunez.Alejandra@epa.gov]; Kim, Eun [Kim.Eun@epa.gov]
CC: Carbonell, Tomas [Carbonell.Tomas@epa.gov]
Subject: RE: Comms weekly
Attachments: OAR Comms Outlook 2.18.21.docx

Hi all,
Attached is the OAR Comms Outlook for next week for discussion in our weekly.

Thanks,
Isabel

-----Original Appointment-----
From: Goffman, Joseph <Goffman.Joseph@epa.gov>
Sent: Friday, January 29, 2021 3:53 PM
To: Goffman, Joseph; Campbell, Ann; Millett, John; DeLuca, Isabel; Nunez, Alejandra; Kim, Eun
Cc: Carbonell, Tomas
Subject: Comms weekly
When: Thursday, February 18, 2021 12:30 PM-1:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting

Or call in (audio only)

Ex. 6 Personal Privacy (PP) States, Washington DC

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Learn More | Meeting options

Message

From: E&E News [ealerts@eenews.net]
Sent: 2/11/2021 9:31:01 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: February 11 -- E&E News PM is ready

E&E News PM -- Late-Breaking News

Read today's E&E News PM on the web

E&E NEWS PM

AN E&E NEWS PUBLICATION

E&E NEWS PM — Thu., February 11, 2021

READ FULL EDITION

1. WHITE HOUSE:

First climate task force meeting brings clean energy cash

The Biden White House today launched what it called an "ambitious innovation effort" to create jobs while tackling climate change, including a new research working group and a $100 million grant program from the Department of Energy for clean energy research.

THIS AFTERNOON'S STORIES

2. ENDANGERED SPECIES:

Scientists, lawyers tell Biden: Get climate back in the ESA

3. PEOPLE:

Ex-Trump EPA policy chief joins law firm

4. ENDANGERED SPECIES:

Groups fight legal loss on grizzly bear recovery

5. COAL ASH:

Greens ask appeals court to examine disposal rule

UPCOMING HEARINGS AND MARKUPS

6. CALENDAR:

Activity for February 8 - February 14, 2021

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Message

From: Carol Browner [cmbrowner@me.com]
Sent: 3/1/2021 5:58:00 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: EV Batteries
Attachments: PUBLIC VERSION - SK Meeting with USTR (Feb. 23, 2021).pdf

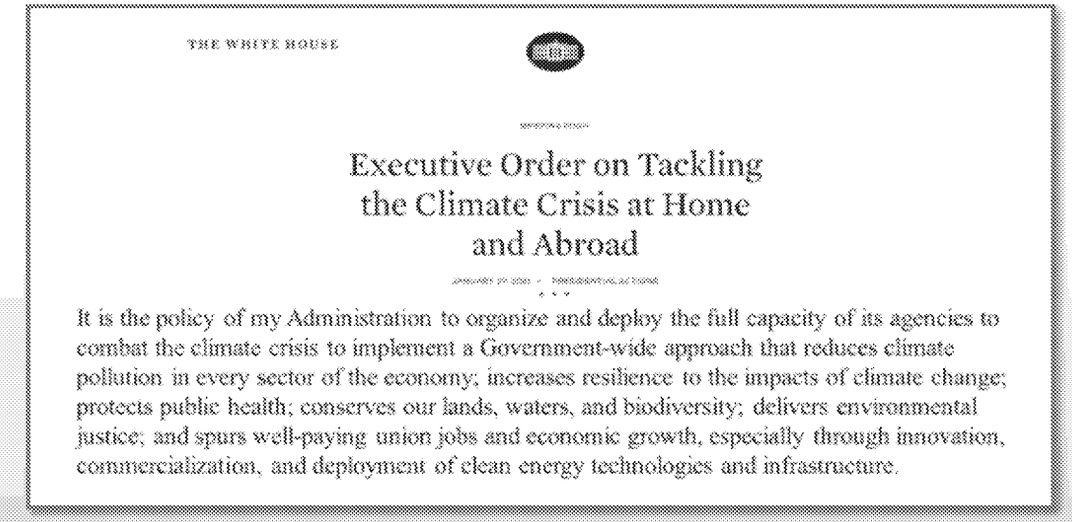
Joe - thank you again for your time. Attached is brief power plant laying out the issues regarding the SK EV battery plant, the F150, VW crossover and the adverse consequences on EV battery supply if the ITC ruling is not "disapproved" by the President. Happy to answer any questions. Best Carol

Meeting with the Office of the United States Trade Representative

February 23, 2021

Unless The President Disapproves The ITC's Orders, SK Will Be Forced To Shut Its EV Battery Manufacturing Plant In Commerce, Georgia

- If the plant shuts, **almost 50%** of the country's non-captive EV battery production capacity will be lost in the near term.
- Thousands of high-paying jobs will be lost.
- As a result, many of President Biden's announced priorities will be severely compromised, including:



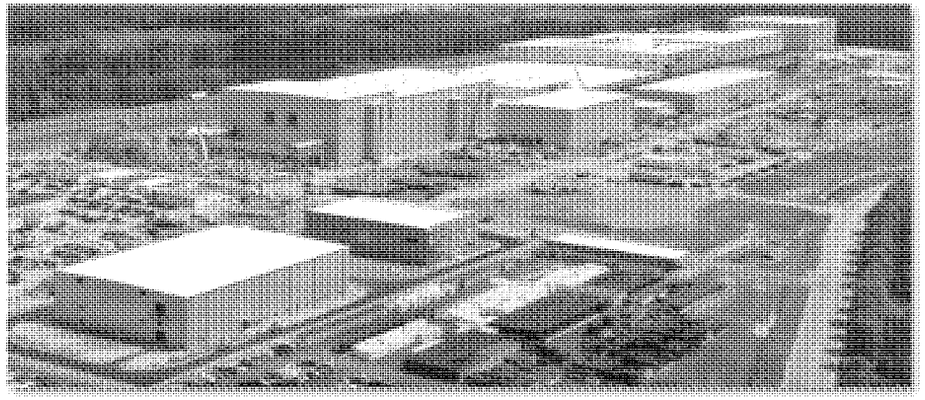
THE WHITE HOUSE

Executive Order on Tackling the Climate Crisis at Home and Abroad

It is the policy of my Administration to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy; increases resilience to the impacts of climate change; protects public health; conserves our lands, waters, and biodiversity; delivers environmental justice; and spurs well-paying union jobs and economic growth, especially through innovation, commercialization, and deployment of clean energy technologies and infrastructure.

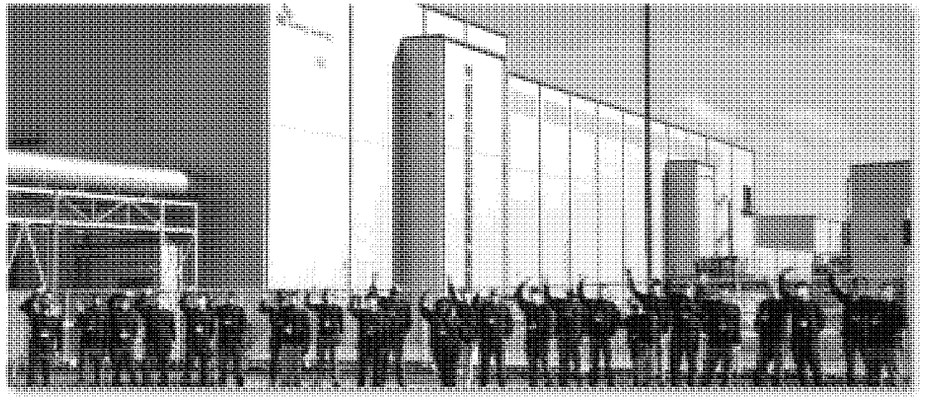
- Combating climate change
- Manufacturing zero-emissions vehicles
- Securing supply chains for critical technologies
- Creating jobs and economic growth

SK Is Making A Massive Investment In U.S. Manufacturing That Supports The Administration's Vision Of A Clean Energy Future



- SK is **investing $2.58 Billion** to construct 2,000,000 sq. ft. manufacturing plants for EV batteries solely for the U.S.
- SK's investment in Georgia is **the largest foreign direct investment** in the state's history.
- SK is the only major EV battery manufacturer that received **no federal subsidies**.
- The plant will produce enough batteries to power **330,000 vehicles** per year.

SK Is Creating Manufacturing Jobs That Support The Administration's Vision Of A Clean Energy Future



- The facility will provide **2,600 high-paying jobs**.
- Employees are learning battery technology through **job training programs** partnered with local specialists, such as Georgia Quick Start.
- Plans to invest a total of **$5 Billion** by 2025 to expand the facility, creating a total of **6,000 high-paying jobs**.

SK Group Is Investing More Than $15 Billion In U.S.-Based Technology Industries

THE WALL STREET JOURNAL.

Intel Enters Deal to Sell NAND Memory Unit to SK Hynix

South Korean chip maker to buy most of Intel's memory business in a $9 billion deal

https://www.wsj.com/articles/intel-nears-deal-to-sell-nand-memory-unit-to-sk-hynix-11603129781

CISION PR Newswire News Products Contact

SK Siltron Completes Acquisition of U.S. DuPont's SiC Wafer Division

https://www.prnewswire.com/news-releases/sk-siltron-completes-acquisition-of-us-duponts-sic-wafer-division-301014092.html

The ITC's Orders Are Not Just An Import Ban, But Will Shut Down SK's Georgia Plant

- The ITC has cut off necessary inputs to manufacturing batteries.
- There is no feasible way to onshore the entire supply chain.
- The carve-out periods do not provide a solution:
  - They do not leave the Georgia plant economically viable.
  - The capital expenditures to complete and operate the plant far exceed expected operating profits during the carve-out period.

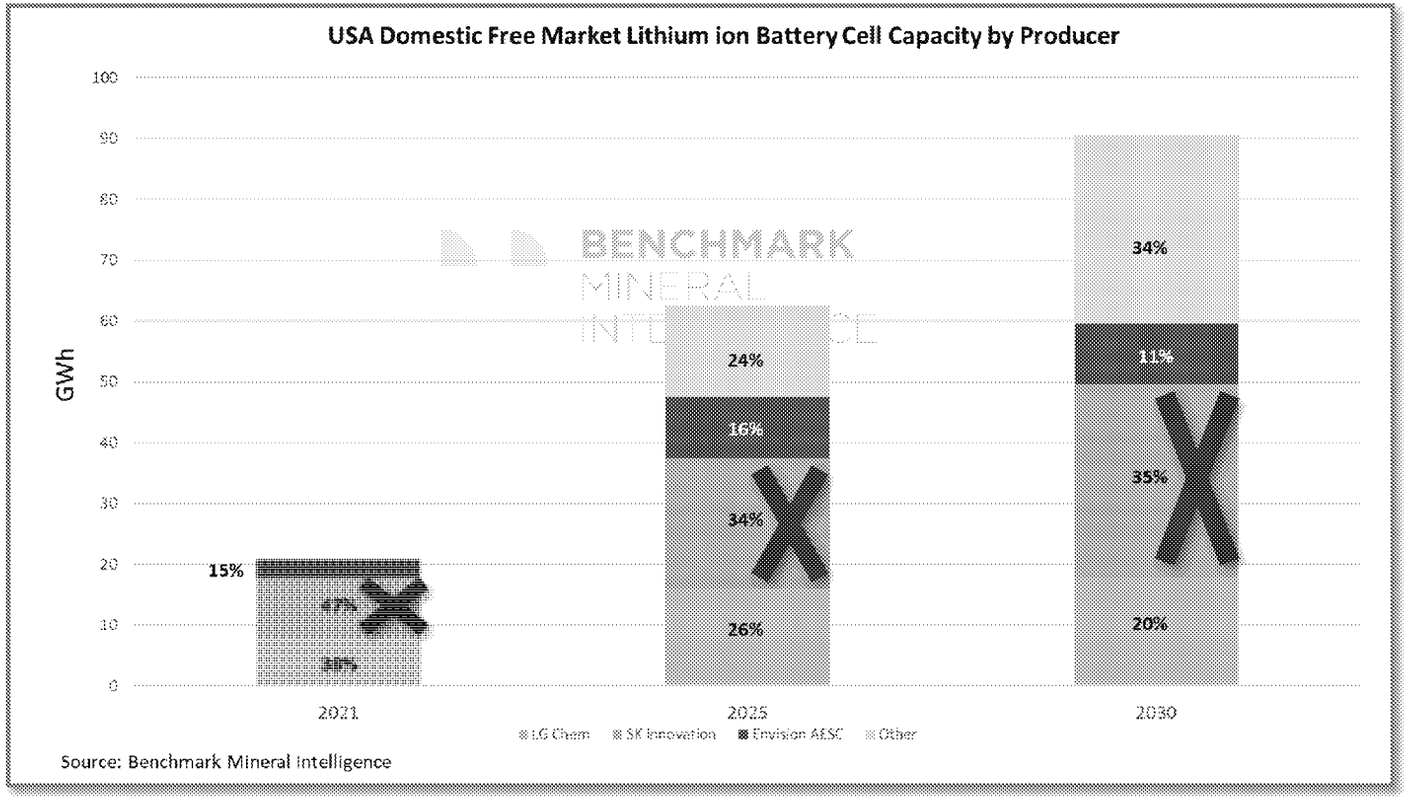
Disapproval Is Necessary To Save Ford's And VW's Domestic EV Programs

Substitutes for SK's Batteries Are Not Available

- Unable to secure alternative supply source during the carve-out period.
  - Actual period of commercial supply is significantly less:
    - [redacted]
    - [redacted]
- From R&D to actual battery, supply generally requires up to 5.5 years, making the carve-out period too short for OEMs to find domestic alternative supply.
- Other programs were not carved out and will not survive:
  - [redacted]
  - ESS batteries were not accused but are now banned

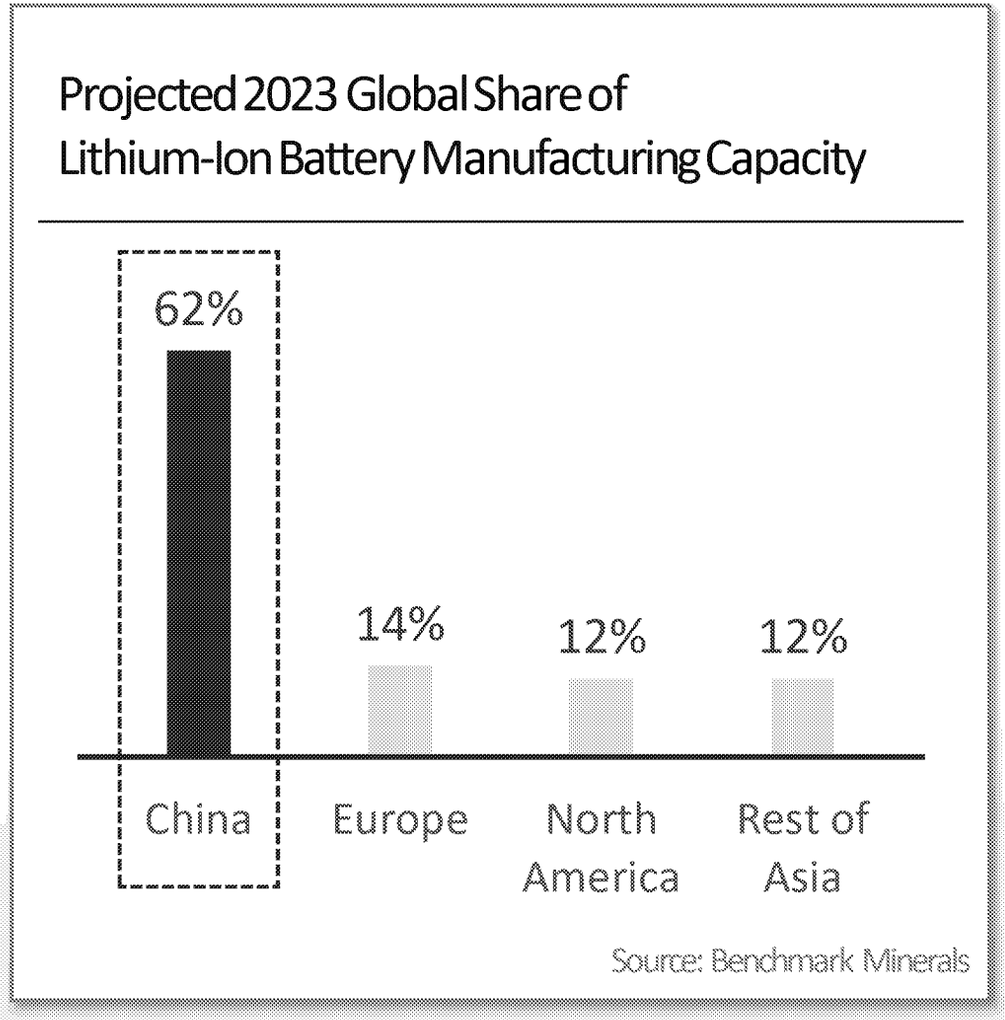
SK [redacted]

Disapproval Is Necessary To Protect A Nearly 50% Share Of Domestic Non-Captive Battery Supply



- Most of existing large-scale capacity is captive, *e.g.*, Tesla.
- SK will provide the largest source of free market capacity to supply all of the OEMs (and other end users such as ESS) without captive source, *e.g.*, Ford, VW, etc.
- Elimination of SK would effectively create a monopoly supplier — LGES.

Disapproval Is Necessary To Keep The U.S. From Falling Behind China In EV Competition

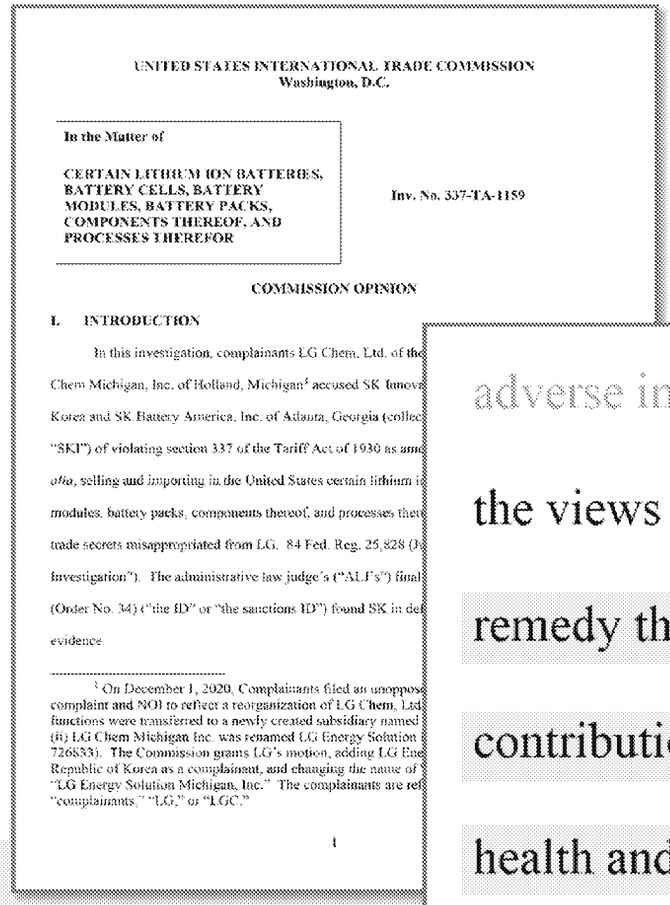


- Chinese government support has established **China as the world leader in lithium-ion battery manufacturing**.
  - China's "Made in 2025" policy calls for an 80% global market share in EV batteries and electric motors.
- Chinese EV battery manufacturers are well positioned to fill the void in the U.S. EV battery manufacturing capacity if SK's Georgia facility is shuttered.
- SK's low-cobalt batteries are crucial to combat China's control over rare earth elements required for EVs.

Disapproval Is Necessary To Support The Administration's Policy On Tackling The Climate Crisis

- Combating climate change is necessarily dependent on the manufacture of zero-emissions EVs.
  - EVs do not emit nitrogen oxide, volatile organic compounds, or particulate matter.
- Production of EVs is similarly critical to enhancing public health and racial equity.
  - Many of the communities burdened by conventional air pollution are of color and low-income.
- SK's projected production of batteries to power 330,000 vehicles per year is central to tackling the climate crisis and advancing environmental justice.

Disapproval Is Thus Necessary To Address The Adverse Effects On Public Health and Welfare



UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

CERTAIN LITHIUM ION BATTERIES, BATTERY CELLS, BATTERY MODULES, BATTERY PACKS, COMPONENTS THEREOF, AND PROCESSES THEREFOR

Inv. No. 337-TA-1159

COMMISSION OPINION

I. INTRODUCTION

In this investigation, complainants LG Chem, Ltd. of the Chem Michigan, Inc. of Holland, Michigan[1] accused SK Innov Korea and SK Battery America, Inc. of Atlanta, Georgia (collec "SKI") of violating section 337 of the Tariff Act of 1930 as amd *otha*, selling and importing in the United States certain lithium i modules, battery packs, components thereof, and processes ther trade secrets misappropriated from LG. 84 Fed. Reg. 25,828 (J investigation"). The administrative law judge's ("ALJ's") final (Order No. 34) ("the ID" or "the sanctions ID") found SK in de evidence.

[1] On December 1, 2020, Complainants filed an unoppos complaint and NOI to reflect a reorganization of LG Chem, Ltd functions were transferred to a newly created subsidiary named (ii) LG Chem Michigan Inc. was renamed LG Energy Solution 726833). The Commission grants LG's motion, adding LG Ene Republic of Korea as a complainant, and changing the name of "LG Energy Solution Michigan, Inc." The complainants are ref "complainants," "LG," or "LGC."

adverse impacts on public health and welfare. The Commission also recognizes, analogous to the views expressed in *Crankpin Grinders*, that it is in the public interest to avoid imposing a remedy that would hamper efforts to reduce automobile emissions and the consequent contribution such efforts make to combatting climate change and its adverse effects on public health and welfare. We take into account the relevance of this issue to the public health and

Comm'n Op at 70

Disapproval Does Not Harm U.S. Policy On Global IP Protection

- The ITC made no decision on IP merits.
- LGES's ill-defined alleged trade secrets received no scrutiny.
- The ITC applied U.S. document preservation law to a dispute between two Korean companies over document retention practices in Korea that are permitted by Korean law.
- Stands the intent of Section 337 on its head by destroying jobs and investments instead of protecting them.

Disapproval Does Not Harm LG

- Between existing commitments and recalls, LGES has as much business as they can possibly supply in the U.S.
- LGES has already filed a Federal District Court case, and if LGES wins:
  - Damages award can compensate LGES without shuttering Georgia plant.
  - Court can consider imposing a domestic manufacturing injunction.
- LG can sue in Korea.

SK innovation

Thank You

Message

From: POLITICO Pro [alert@email.politicopro.com]
Sent: 2/26/2021 9:42:58 PM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Biden hikes cost of carbon in new bid to put a price on climate change

Biden hikes cost of carbon in new bid to put a price on climate change

By Lorraine Woellert, Zack Colman

02/26/2021 04:41 PM EST

President Joe Biden on Friday restored an Obama-era calculation on the economic cost of greenhouse gases but stopped short of boosting it to higher levels that economists and climate scientists say are justified by new research.

The interim figure — $51 for every ton of carbon released into the atmosphere — is well above the $8 cost used under former President Donald Trump, who declined to factor the global impacts of climate pollution into his calculation. It's on par with a price based on analyses undertaken between 2010 and 2016 under former President Barack Obama, whose administration was first to calculate the figure known as the social cost of carbon.

The price point is temporary. A new Interagency Working Group on the Social Cost of Greenhouse Gases is required to issue a final number by January.

"A more complete update that follows the best science takes time. This is why we are quickly restoring the prior estimates as an interim step," Heather Boushey, a member of the Council of Economic Advisers, wrote in a blog post.

The social cost of carbon is an effort to quantify the economic and societal damage from greenhouse gas emissions in the coming decades. The figure will be baked into the administration's number-crunching on the costs and benefits of a wide array of regulations.

Friday's notice, posted on the Office of Management and Budget website, fulfills a promise Biden made on Inauguration Day when he signed an executive order on climate change that called for a recalculation of the social cost of carbon, which the Trump administration had sharply reduced.

The new price per ton is accompanied by discount rates of 2.5 percent, 3 percent and 5 percent, numbers that express the weight of future benefits against immediate ones. A higher discount rate suggests society cares less about long-term consequences than present-day effects. Environmental activists and economists had urged Biden to lower the 3 percent discount rate set by Obama.

Trump had bumped the discount rate up to to 7 percent. When the Obama team modeled its estimates in 2016 , a 3 percent discount rate carried a $42 per ton price. A 2.5 percent discount rate pushed the cost to $62 per ton.

Under the figures released Friday, the social cost of carbon will be $51 with the 3 percent discount rate applied. A discount rate of 5 percent would push the price per ton to $14.

"This is to be celebrated for getting the social cost of carbon out from being a political football, which is what Trump did, but it's Step One. Step Two is restore a transparent process and to return the social cost of carbon to

the frontier of climate science and economics," said Michael Greenstone, a University of Chicago economist who played a primary role developing the Obama-era social cost of carbon. "I view this whole thing as a reset and now they will go out and engage."

The Interagency Working Group, led by the Council of Economic Advisers, Office of Management and Budget and Office of Science and Technology Policy, must issue recommendations on incorporating the cost into government decision-making and budgeting by September and deliver a final number by January.

The working group, in Friday's notice, said it was "appropriate" for federal agencies to revert to the Obama-era values, even though "new data and evidence strongly suggests that the discount rate regarded as appropriate for intergenerational analysis is lower."

The group set a $1,500-per-ton cost for methane emissions and $18,000 for nitrous oxide.

"The IWG will consider the new science and evidence as it works towards a more comprehensive update," the group wrote.

Calculating the social cost of carbon is a complex endeavor that represents economists' attempt to quantify the long-term effects of greenhouse gases on society, for example, rising health costs caused by climate change, property damage from flooding and business losses due to extreme weather.

Economists and environmentalists had pushed the Biden administration to fundamentally change the climate modeling that's used to calculate social costs in ways that would increase the figure and thereby make federal approval of fossil fuel projects harder to justify.

"This is the interim number — the interagency working group hasn't even been officially formed yet," said Gernot Wagner, a climate economist at NYU. "There's only so much that can happen in a month."

"Could there be more? Yes," Wagner said. Citing work done by the Council of Economic Advisers in 2017, he said a 2 percent discount rate is "eminently justifiable."

"There is broad support in the economics community for a discount rate that is below 3 percent," he said.

But experts have long disagreed on what the precise figure should be, citing uncertainties over how much damage climate change will inflict. Conservatives and regulated industries say social costs overestimate the risks and thus inflate regulatory benefits of restricting carbon emissions.

During the Trump administration, then-chair of the Federal Energy Regulatory Commission Neil Chatterjee and other Republicans called the social cost of carbon "speculative" and refused to use it.

The social cost of carbon is different from congressional proposals to put a tax or fee on the burning of fossil fuels with the aim of encouraging a shift toward cleaner sources. Rather, it's an economic estimate meant to gauge the benefits of avoiding those emissions altogether.

Still, the high price point set by Biden could give Democrats ammunition to fight for taxes or other fees to curb climate change.

And while the administration's social cost of carbon has no immediate effect on corporations, it is likely to influence business activity across industries, including oil, aviation, construction, forestry and manufacturing.

States, municipalities and other governing bodies also could incorporate the federal number into their decision-making.

The number could rise as climate science advances, said Paul Kelleher, an associate professor at the University of Wisconsin-Madison who specializes in climate change economics. Advances in translating temperature increases to economic damage have enabled more precise measurements of climate impacts. And the Biden administration has emphasized equity considerations to take into account low-income areas and communities of color, which new modeling makes more possible.

Wagner said a concurrent revision of Office of Management and Budget guidelines might need to be finished before the administration incorporates equity concerns into the social cost of carbon analysis.

Alex Guillén contributed to this report.

To view online:
https://subscriber.politicopro.com/energy/article/2021/02/biden-hikes-cost-of-carbon-in-new-bid-to-put-a-price-on-climate-change-2037542

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Message

From: Enos, Kendra [Enos.Kendra@epa.gov]
Sent: 2/12/2021 5:03:23 PM
To: AO OPA OMR CLIPS [AO_OPA_OMR_CLIPS@epa.gov]
Subject: Daily News Clips: Morning Edition 2-12-21

Daily News Clips: Morning Edition
February 12th, 2021

Agency
Registration Opens for Webinars on PV29 and NMP
Air
Conservation Groups Announce Intent to Sue EPA Over Air Pollution in San Diego, Other Regions
Chemicals
EPA Orders Amazon to Halt Illegal Pesticides Sales
Oil
Oil Company Paying $1.9M for Wyoming spills
EPA Fines Hawaii Oil Refinery for Safety, Waste Violations
EPA settlement with Fleur de Lis resolves oil spills affecting surface waters in Wyoming

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Agency
Registration Opens for Webinars on PV29 and NMP
https://www.natlawreview.com/article/registration-opens-webinars-pv29-and-nmp

Friday, February 12, 2021
The U.S. Environmental Protection Agency (EPA) announced on February 9, 2021, that it will host two webinars intended to educate stakeholders on the risk management process under the Toxic Substances Control Act (TSCA) and the findings in the final risk evaluations for pigment violet 29 (PV29) and n-methylpyrrolidone (NMP). The webinars will also allow the public to provide input on considerations EPA should take into account for managing any unreasonable risks found with these chemicals. The PV29 webinar will be held on February 23, 2021, and the NMP webinar will be held on February 24, 2021. To provide oral comments during the PV29 webinar, registration is due by February 18, 2021. To provide oral comments during the NMP webinar, registration is due by February 19, 2021.

EPA states that it will also hold formal consultations with state and local governments, tribes, environmental justice communities, and small businesses. EPA notes that there will also be an open public comment period on any draft risk management regulation. According to EPA, while outreach and stakeholder engagement on risk management activities for these chemicals will continue to move forward, EPA "is actively reviewing the final risk evaluations to ensure that they use the best available science and protect of human health and the environment, in accordance with the Executive Orders and other direction provided by the Biden-Harris Administration." EPA "will keep stakeholders updated as decisions are made, and next steps are determined."

Air
Conservation Groups Announce Intent to Sue EPA Over Air Pollution in San Diego, Other Regions
https://www.nbcsandiego.com/news/local/conservation-groups-announce-intent-to-sue-epa-over-air-pollution-in-san-diego-other-regions/2520007/

The groups say San Diego and Ventura counties are among six regions in California that have failed to meet basic air-quality standards for ozone
By City News Service

Two conservation groups on Thursday filed a formal notice of their intent to sue the U.S. Environmental Protection Agency for its alleged failure to ensure San Diego County and other regions across the country rein in harmful air pollution.

The Center for Biological Diversity and the Center for Environmental Health say San Diego and Ventura counties are among six regions in the state that have failed to meet basic air-quality standards for ozone.

In a letter to EPA Acting Administrator Jane Nishida, they allege the federal agency has failed to meet its duty to ensure that adequate plans are in place to control pollution from the oil and methane gas industry in California -- including the San Diego region -- as well as five other eastern U.S. states.

"There's clearly bipartisan support to reduce air pollution from the oil and methane gas industry, but what's been missing is the political will to get it done," said Robert Ukeiley, an attorney at the Center for Biological Diversity.

"We're calling on the Biden administration to take the common-sense steps that will protect people and wildlife alike from dangerous pollution from the fossil fuel industry," he said. "Ultimately, the key to safeguarding the air we breathe is to move quickly away from drilling and fracking."

The groups say the areas outlined in their letter are home to more than 48.7 million people, or about 15% of the U.S. population.

"As we transition away from fossil fuels, we need to ensure that all of our energy sources are as protective of public health as possible," said Kaya Sugerman, director of the Center for Environmental Health's illegal toxic threats program. "Polluting industries, not the public, should pay the price for the impacts of extraction."

Chemicals

EPA Orders Amazon to Halt Illegal Pesticides Sales

https://www.pctonline.com/article/epa-stop-sale-order-amazon/

The Seattle office of the U.S. Environmental Protection Agency announced on Feb. 9 that it has issued a “stop sale” order to Amazon.com. This is the third pesticide stop-sale order issued by the agency to Amazon in the last three years.

February 12, 2021

Posted by Brad Harbison

WASHINGTON - The Seattle office of the U.S. Environmental Protection Agency announced on Feb. 9 that it has issued a “stop sale” order to Amazon.com to prevent sales on the platform of potentially dangerous or ineffective unregistered pesticides and pesticide devices making illegal and misleading claims, including multiple products that claimed to protect against viruses.

This action adds 70 products to a June 6, 2020 EPA order which contained over 30 illegal products.

“Unregistered pesticides in the e-commerce marketplace pose a significant and immediate health risk to consumers, children, pets, and others exposed to the products,” says Ed Kowalski, director of the Enforcement Compliance Assurance Division in EPA’s Region 10 office in Seattle.

This is the third pesticide stop-sale order issued by the agency to Amazon in the last three years. Beyond the stop-sales EPA has mounted other efforts to stop fraudulent products, such as partnering with U.S. Customs and Border Protection to stop multiple imports of millions of illegal disinfectant products imported by or for sale on Amazon. EPA has also provided guidance to e-commerce companies on multiple occasions about their requirements to ensure their disinfectant products are legal and safe.

The agency advises consumers who have purchased an unregistered pesticide product or a misbranded pesticidal device to safely dispose of it in accordance with local, state, and federal laws. This is especially important for consumers seeking to protect against SARS-CoV-2, the virus that causes COVID-19. EPA recommends that consumers only purchase products on EPA's "List N of Disinfectants for Coronavirus (COVID-19)." EPA expects all products on this list to kill the coronavirus SARS-CoV-2 (COVID-19) when used according to the label directions.

Under the Federal Insecticide Fungicide and Rodenticide Act, pesticides and disinfectants intended for sale in the U.S. must be evaluated for safety and efficacy by EPA and bear approved labeling with an EPA registration number (e.g. "EPA Reg. No. 1234-56") and an EPA establishment number (e.g., "EPA Est. No. 12345-AA-1" (domestic) or "EPA Est. No. 12345-AAA1" (foreign)). In contrast, pesticidal devices must bear an EPA establishment number and conform to certain other requirements, but they are not evaluated for safety and efficacy by EPA before marketing.

Oil

Oil Company Paying $1.9M for Wyoming spills
https://www.insurancejournal.com/news/west/2021/02/12/601140.htm

February 12, 2021

An oil company has agreed to pay almost $2 million for spilling crude oil and wastewater at two central Wyoming oilfields.

The spills happened between the fall of 2016 and spring of 2018. One was in the Linch Complex Field in Johnson County and five were in the Salt Creek Field in Natrona County, according to the U.S. Environmental Protection Agency.

The biggest spill was about 300,000 gallons. The rest were 23,000 gallons or less.

Irving, Texas-based Fleur de Lis Energy, LLC, has agreed to pay a $1.9 million settlement, EPA officials said in a release this week.

A phone message left with the company seeking comment wasn't immediately returned Wednesday.

Fleur de Lis didn't have adequate plans to prevent and respond to spills but recently has submitted plans that meet regulatory requirements, according to the EPA.

The penalty goes into the Oil Spill Liability Trust Fund used by the U.S. government to respond to spills of oil and hazardous substances.

Oil

EPA Fines Hawaii Oil Refinery for Safety, Waste Violations
https://www.usnews.com/news/best-states/hawaii/articles/2021-02-12/epa-fines-hawaii-oil-refinery-for-safety-waste-violations

The U.S. Environmental Protection Agency says a Hawaii oil refinery has agreed to pay a civil penalty of more than $219,000 for chemical safety and hazardous waste violations.
By Associated Press, Wire Service Content Feb. 12, 2021, at 10:02 a.m.

HONOLULU (AP) — A Hawaii oil refinery has agreed to pay a civil penalty of $219,638 for chemical safety and hazardous waste violations, the U.S. Environmental Protection Agency said.

Par Hawaii Refining LLC violated the federal Clean Air Act and Resource Conservation and Recovery Act at its facilities in Kapolei on Oahu, the agency said Thursday.

Par Hawaii also agreed to implement changes to reduce the risk of further chemical accidents at a facility where agency inspectors said they found violations of prevention requirements in 2019.

The violations included process safety errors and operating procedures that were unclear and out of date, including the emergency shutdown operating procedure in a control room.

The company also must conduct sampling at a second facility to determine whether improper management of hazardous waste contaminated soil.

A 2018 federal inspection determined the facility improperly managed waste from its refinery processes. Inspectors also documented oily residue released onto an unlined asphalt pad and into nearby soil.

"We are acting to ensure that oil refining facilities reduce the risk of releases of toxic substances, and properly store, manage and dispose of hazardous wastes to protect local communities and the environment," Amy Miller, EPA Pacific Southwest Regional Director of Enforcement and Compliance Assurance, said in a statement.

The settlement requires Par Hawaii to adopt a sampling plan to determine the possibility of localized hazardous waste contamination.

Peter Boylan, Par Hawaii Director of Government and Public Affairs, said the company strives "to conduct business in a safe and environmentally protective manner."

"While we disagree with the EPA's assertions, these two settlements resolve this matter for the benefit of all parties, and we look forward to continuing our support of the state's transition to its clean energy goals," Boylan said.

Oil

EPA settlement with Fleur de Lis resolves oil spills affecting surface waters in Wyoming
https://www.watertechonline.com/industry/oil-gas/article/14197439/epa-settlement-with-fleur-de-lis-resolves-oil-spills-affecting-surface-waters-in-wyoming

Feb 12th, 2021

The U.S. Environmental Protection Agency (EPA) recently announced a Clean Water Act (CWA) settlement with Fleur de Lis Energy and Fleur de Lis Operating (Fleur de Lis) in which the companies have agreed to pay $1.9 million for alleged Clean Water Act violations associated with the operation of oil and gas facilities in the state of Wyoming.

The settlement, lodged in the United States District Court for the District of Wyoming, involves six separate discharges of crude oil and produced water from Fleur de Lis operated facilities into waters of the United States and their adjoining shorelines; inadequate Spill Prevention Control and Countermeasure (SPCC) Plans for five facilities; inadequate Facility Response Plans (FRP) for three facilities; and no FRP for one facility.

"Companies that store oil must ensure they have adequate spill prevention and discharge response plans to protect public health and the environment," said Suzanne Bohan, director of EPA Region 8's Enforcement and Compliance Assurance Division. "EPA is committed to ensuring compliance with federal requirements that safeguard our rivers and streams."

EPA alleges Fleur de Lis oil and gas operations were responsible for spills of oil and produced water to surface waters in Wyoming between Oct. 5, 2016, through May 29, 2018.

EPA also alleges that Fleur de Lis failed to prepare adequate SPCC plans for five facilities.

In addition, EPA alleges that Fleur de Lis failed to prepare adequate FRPs, or had no FRPs in place, from April 2015 through December 2017 at four facilities and failed to develop and implement a facility response training and drill/exercise program. The planning distance for these four facilities, which represents the extent of potential impacts associated with a worst-case spill scenario, extends over 90 miles to the Powder River.

The Clean Water Act prohibits discharges of oil to waters of the United States that violate applicable water quality standards; or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines; or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

The Oil Pollution Prevention requirements of the Clean Water Act are intended to prevent and facilitate the response to the discharge of oil from non-transportation-related onshore facilities. All facilities with 1,320 gallons of oil that have the potential for a spill to reach waters of the United States are required to have an SPCC Plan. Facilities with storage capacity of one million gallons or more and have the potential to impact fish, wildlife and sensitive environments are also required to meet FRP requirements.

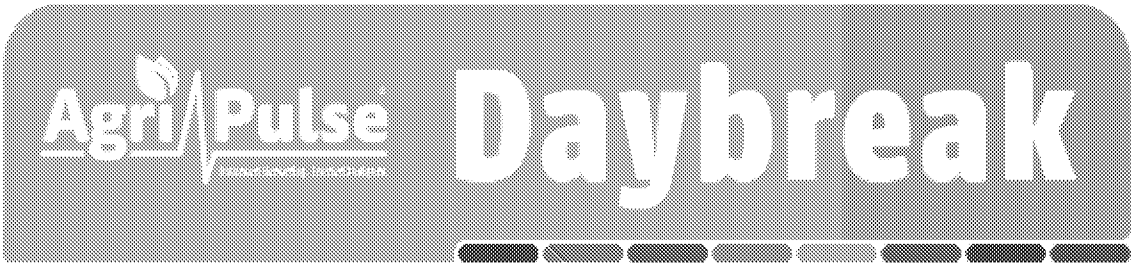
The $1.9 million penalty will be deposited into the Oil Spill Liability Trust Fund, a fund used by federal agencies to respond to discharges of oil and hazardous substances. Fleur de Lis has submitted SPCC and FRP plans that satisfy regulatory requirements; is satisfactorily continuing its pipeline maintenance program; and has demonstrated that it can implement its FRP and respond to discharges into Salt Creek and the Powder River.

Message

From: Agri-Pulse Daybreak [sara@agri-pulse.com]
Sent: 2/5/2021 9:59:37 AM
To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: Agri-Pulse Daybreak Feb. 5: USDA climate czar addresses concerns * Minority farmers getting new focus * USDA denies system hack

Agri-Pulse Daybreak Feb. 5: USDA climate czar addresses concerns * Minority farmers getting new focus * USDA denies system hack

Your Agri-Pulse Daybreak for February 5, 2021



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USDA: We won't compete with private sector on carbon

USDA's top climate adviser is trying to dispel concerns that the administration's carbon spending will crowd out private investors. That's a concern shared by some entities that are building private carbon credit markets.

"We don't want to compete with private investment," says Robert Bonnie, a leading proponent of using USDA's Commodity Credit

Corp. spending authority to create a carbon bank that would buy and sell carbon credits. The idea is to help jump-start carbon markets.

"We actually want to figure out how to build policy in a way that invites more investment in agriculture, that gives producers more opportunities," Bonnie said on a webinar sponsored by the AGree Economic and Environmental Risk Coalition.

Bonnie defended using the CCC for carbon trading, saying that "carbon is a commodity right now," and the CCC is intended to help stabilize commodity markets.

But, but, but: Anne Simmons, the House Ag Committee's majority staff director, cautioned that lawmakers will have a lot of questions about the concept. "Some of our members are going to ask, 'Why do we need a carbon bank?' 'Who's going to buy the credits?' All those questions still need to be asked," she said.

Bonnie with Tom Vilsack

'Equity lens' will be important

Bonnie cautioned that climate policies will have to work for minority farmers: "Thinking about that equity lens is going to be really, really important," he said.

There are concerns that carbon credits will primarily benefit large, well-capitalized farms, and that the credits will drive up land values.

But Bonnie still has some work to do selling the administration's policy to larger, conventional farms. For a variety of reasons, many aren't convinced they will benefit, cautions Josh Tonsager, vice president of policy and communications for the National Association of Wheat Growers.

"The skepticism isn't around whether climate change is real or happening or not. It's around what the correct solutions are, and what it's going to mean to their bottom line," he said during a conference sponsored by the Crop Insurance and Reinsurance Bureau. One of the concerns: Cover crops compete for needed moisture in drier areas.

Land O'Lakes launches credit program

Land O'Lakes announced through its TruTerra subsidiary the launch of its TruCarbon credit program. Its first customer will be Microsoft, which has announced a goal of being carbon-negative by 2030.

Participating farmers will be paid $20 per ton in the first tranche of credits this summer.

Take note: Qualifying farmers "may be compensated for carbon sequestration retroactively up to five years based on the soil

health practices they adopted in prior growing seasons." That provision gets at concerns that "early adopters'' of conservation practices will be left out of carbon payments.

Sen. Warnock (middle) with two Georgia brothers who told him they are struggling to stay in business against larger farms. (Twitter)

New Senate Ag member eyes aiding small growers

Agri-Pulse caught up Thursday with one of five new members of the Senate Ag Committee, Georgia Democrat Raphael Warnock.

He says his priorities will include addressing the "concerns of independent, small farmers who too often don't get their share, even of the subsidies." He cited some Black farmers in Georgia

"who are living on the edge, and we need policy that is going to take seriously their concerns."

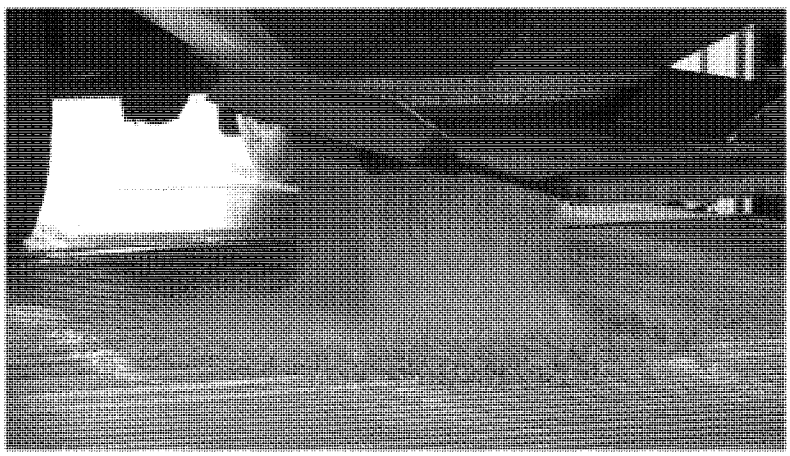
He wants to provide debt relief to minority farmers and also ensure there is adequate nutrition assistance for needy families in "both rural and urban settings."

Read our report on the new committee members here.

Senate backs rural hospitals

The Senate voted 99-1 Thursday night to ensure that health care providers get a significant share of funding in the next stimulus bill. During debate on a budget resolution that Democrats are using to advance a $1.9 trillion aid package, the Senate voted to set aside 20% of the provider relief funds for rural hospitals.

On a separate issue, the Senate voted 58-42 to prohibit the Biden administration from providing stimulus checks to illegal immigrants.



China continues buying US soy

China's purchases of U.S. corn hogged the headlines for the fourth week in January – the country purchased 5.86 million

metric tons – but Chinese buyers were also busy purchasing U.S. soybeans for delivery this marketing year and the next.

Chinese importers committed to buying 598,900 tons of U.S. soybeans for the 2020-21 marketing year and 528,000 tons for the 2021-22 marketing year, according to the latest weekly data from USDA's Foreign Agricultural Service.

Physical shipments were also strong for the Jan. 22-28 period. The U.S. shipped about 1.3 million tons of soybeans to China during the seven-day period.

USDA denies hack of federal payroll system

USDA said it has "no evidence" of a data breach at its National Finance Center, following a Reuters report that cited unnamed sources saying suspected Chinese hackers had broken into government computers last year.

The NFC, which Reuters says was targeted in the breach, includes payroll services for more than 650,000 employees at more than 170 agencies. The hack would be the second targeting of SolarWinds' Orion software. The first, involving Russian hackers, was revealed in December.

A USDA spokesperson says the department complied with a directive from Cybersecurity and Infrastructure Security Agency, notifying customers in December that "it had removed SolarWinds Orion products from its networks due to the SolarWinds compromise. While we continue to look into it, we have no evidence of a data breach" at the NFC.

She said it. “We do want to make sure we are driving the conversation and not having someone else on Capitol Hill or somebody else who is less informed tell us what that policy is going to look like.” – Callie Eideberg of the Environmental Defense Fund, a partner in the Food and Agriculture Climate Alliance, which released more than 40 policy proposals in November.

Steve Davies, Bill Tomson and Ben Nuelle contributed to this report.

Questions? Tips? Contact Philip Brasher at philip@agri-pulse.com

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To: Goffman, Joseph [Goffman.Joseph@epa.gov]
Subject: EPW unveils subcommittee chairs

EPW unveils subcommittee chairs

By Anthony Adragna

03/02/2021 03:54 PM EST

The Senate Environment and Public Works Committee announced Tuesday the leaders of subcommittees responsible for clean air, chemical safety and water issues.

- **The Clean Air, Climate, and Nuclear Safety Subcommittee:** Sen. Ed Markey (D-Mass.) will chair the subpanel, while Sen. Jim Inhofe (R-Okla.) is the top Republican.
- **The Fisheries, Water, and Wildlife Subcommittee:** Sen. Tammy Duckworth (D-Ill.) will chair the subcommittee and Sen. Cynthia Lummis (R-Wyo.) is the ranking member.
- **The Chemical Safety, Waste Management, Environmental Justice and Regulatory Oversight Subcommittee:** Sen. Jeff Merkley (D-Ore.) will chair the subcommittee, while Sen. Roger Wicker (R-Miss.) is the ranking member.
- **The Transportation and Infrastructure Subcommittee:** Sen. Ben Cardin (D-Md.) will lead this subcommittee and Sen. Kevin Cramer (R-N.D.) is the top Republican.

A full list of subcommittee rosters is available here.

To view online:
https://subscriber.politicopro.com/energy/whiteboard/2021/03/epw-unveils-subcommittee-chairs-3987331

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Sent: 3/16/2021 9:02:58 PM
To: AO OPA OMR CLIPS [AO_OPA_OMR_CLIPS@epa.gov]
Subject: News Clips- Afternoon Edition March 16th, 2021

News Clips- Afternoon Edition
March 16th, 2021

Administration:
Kate Huffling, The Hill, A new day for the Environmental Protection Agency
Jennifer A Dlouhy and Stephen Lee, Bloomberg, New EPA Chief Michael Regan Vows Assault on Environmental Injustice

Air:
Environmental Defense Fund- EPA Takes a "Good Step" for Public Health with Update to Cross-State Air Pollution Rule
Global Newswire, Continued Investment, Innovation in Advanced Technology Diesel Engines Sustains Clean Air and Climate Progress
Law 360, EPA Imposes Power Plant Emissions Limits In 12 States
The Hill, EPA finalizes rule aimed at reducing smog pollution across state lines

Biofuels:
Oahidur Islam Roman, The Bisovu Network, Plotting future, U.S. biofuel industry seeks federal clean fuel program from Biden

Energy:
Palash Ghosh, Forbes, Here's How Volkswagen Can Beat Tesla (It's Not With Software Or Batteries)

Environment:
Kimberly Johnson, Patch, As Millions Go Hungry, Here's How To Reduce Food Waste In NC

Water:
Anthony Warren, WLBT, Bill would provide Jackson with tens of millions in federal funding to restore water system
Charlotte Sanford-Carne, Cecil Daily, **Lack of water regulation leaves rural communities holding the bill**
WSAV- **Water advisory issued for South Beach on Tybee Island**

Kate Huffling, The Hill, A new day for the Environmental Protection Agency

On March 10, the Senate made history by confirming Michael Regan as head of the U.S. Environmental Protection Agency (EPA) under President Biden. His confirmation is momentous — Regan is the first Black man to lead the agency in its 50-year history.

As the COVID-19 pandemic rages on, ensuring access to breathable air and clean water for all has never been so important. With Regan at the helm, the EPA can now act swiftly to address environmental injustices, protect public health and rein in pollution from fossil fuels.

Climate, environmental justice and public health are inextricably intertwined. As nurses, we see this connection every day. Low wealth communities and communities of color are often located in the shadows of oil and gas fields, refineries and other polluting industries. These communities bear a disproportionate burden of negative health impacts from this environmental contamination. For example, communities of color face disproportionate levels of air pollution, leading to higher rates of asthma and respiratory illnesses. This chronic exposure to pollution is further compounded by the threat of inadequate health care access.

Regan has spent his career fighting for clean air and water. Few people know more about the public health emergency posed by toxic "forever chemicals" than Regan, who led complex negotiations regarding the cleanup of per- and polyfluoroalkyl substance (PFAS) water contamination and issued the largest civil penalty in North Carolina's history. Regan also negotiated the historic coal ash settlement after the largest coal ash cleanup in the United States. It only takes short-term exposure to coal ash to bring on irritation of the nose and throat, dizziness, nausea, vomiting and shortness of breath. Long-term exposure can lead to liver damage, kidney damage, cardiac arrhythmia and a variety of cancers. Additionally, Regan established an environmental justice advisory board that worked closely with North Carolina's Republican legislature.

Regan is the best person to protect public health, eliminate pollution and help the Biden administration meet the goals of an equitable and just transition to a clean and prosperous economy. His entire career has been centered on protecting communities disproportionately affected by environmental pollution. Through the creation of the state advisory board and by holding corporate polluters accountable, he has championed underrepresented communities and is committed to racial and environmental justice.

Regan will take a leading role in Biden's bold and unprecedented climate policy by reinstating and expanding pollution safeguards, jumpstarting our clean energy economy and placing an emphasis on equity and environmental justice.

- New report finds 4,276 children held in Border Patrol custody as of...

As nurses, we know the importance tackling climate change plays in protecting public health. We applaud the senators who voted to confirm Regan to lead the EPA. However, the work is far from over. The EPA is staffed by thousands of dedicated professionals committed to our environment and the protection of public health. At the uppermost levels of the agency, Regan will need a strong team of fellow appointees to serve alongside him. It starts with Janet McCabe, who was nominated to serve as deputy EPA administrator. She has a proven track record of reaching across the aisle to protect our air and water.

A driven and fully-functioning EPA, with leaders like Regan and McCabe, will be key to fulfilling the promises of Biden's early executive orders, tackling the climate crisis and ensuring EPA is fulfilling its mission to protect health and the environment.

Katie Huffling is the executive director of the Alliance of Nurses for Healthy Environments. She works with nurses and national nursing organizations on a variety of environmental health issues including climate change, inclusion of environmental health into nursing education and sustainable health care.

Jennifer A Dlouhy and Stephen Lee, Bloomberg, New EPA Chief Michael Regan Vows Assault on Environmental Injustice

Michael Regan vowed to put environmental justice at the center of the EPA's decision making during his first formal public appearance as the administrator of the agency.

"Every person in the United States has the right to clean air, clean water and a healthier life no matter how much money they have in their pockets, the color of their skin or their zip code," Regan said in an address to a conference of state regulators. "Yet too many Black, indigenous, Latinx and other people of color bear the highest burden of pollution."

Regan's efforts comes as President Joe Biden promises government-wide attention to combating environmental inequity. The just-enacted stimulus law included some $50 million in funding for state and local environmental justice work. Biden also created an interagency task force focused on the topic and signaled he wants the Justice Department to increase enforcement against polluters. On Monday, the administration named former solicitor general of the District of Columbia Todd Kim to be Justice's prosecutor focusing on environmental issues.

What on

At the Environmental Protection Agency, Regan said he would appoint an adviser to focus on environmental justice, and he outlined plans to make sure resources are devoted to the issue throughout EPA.

"What I think you'll see in the coming year or so is an emphasis on environmental justice, equity and civil rights by which we reconstruct our resources in our offices here within the EPA so that it permeates through our regions and to the states," Regan said.

Regan outlined an array of priorities in his remarks to the Environmental Council of States, including more urgency in addressing long-lasting pollution from per- and polyfluoroalkyl substances and "an aggressive posture on reducing climate emissions." Under Biden, the EPA is expected to move swiftly to impose tighter limits on greenhouse gas emissions from automobiles, oil wells and power plants.

But, Regan cautioned, "climate isn't the only game," as the EPA also works with states to safeguard water, clean up polluted former industrial sites and deal with solid waste. "We have to have an all-out assault on pollution and protecting the environment," Regan said.

Environmental justice underpins the entire portfolio, Regan said.

"If we protect the least amongst us, we can create a rising tide that elevates the level of environmental protection and equity for every American in this great country."

EPA Takes a "Good Step" for Public Health with Update to Cross-State Air Pollution Rule

More Steps Still Needed to Reduce Smog-Forming Pollution from Coal-Fired Power Plants
March 16, 2021

(Washington, D.C. – March 16, 2021) The U.S. Environmental Protection Agency just took a valuable step toward protecting millions of people in downwind states from the dangerous air pollution that blows across their boundaries from upwind coal-fired power plants. EPA's action requires reductions in that pollution for this summer's smog season.

EPA just issued an update to the Cross-State Air Pollution Rule that will require coal plants in 12 states to reduce their oxides of nitrogen (NOx) pollution by improving the operation of NOx pollution controls that are already in place and by upgrading NOx pollution controls. NOx is a major component of ground-level ozone, commonly known as smog, and contributes heavily to downwind states' inability to meet an EPA health-based smog standard set in 2008. Smog exacerbates lung conditions like asthma and is linked to a wide array of serious heart and lung diseases as well as to premature deaths. It's especially dangerous for children, the elderly, people who work outdoors, and low-income communities or communities of color.

"Millions of people across the Eastern U.S. suffer because of the coal plant pollution that blows into their communities from neighboring states. The update to the Cross State Air Pollution Rule is a common sense step to help them," said EDF senior attorney Graham McCahan. "We can do much more, though. We urge EPA to build on this foundation and strengthen smog protections for all Americans who live near coal plants or in downwind states."

The Cross-State Air Pollution Rule was created under the "Good Neighbor" provision of the Clean Air Act. It reduces sulfur dioxide and NOx pollution emitted from coal-fired power plants across the Eastern U.S. That pollution, and the resulting soot and smog, drift across state borders and contribute to dangerous, sometimes lethal, levels of pollution in 22 downwind states.

EPA issued the update in response to a court order requiring the agency to strengthen protections for the downwind states. The update will require that coal units in 12 states – Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania, Virginia, and West Virginia – use the modern, effective pollution controls that they have already installed, as well as update their pollution controls. Coal-fired power plants that have pollution controls sometimes don't operate them, or don't use them to full capacity.

The update will require those plants to begin reducing pollution immediately after the rule becomes legally effective – 60 days after its publication in the Federal Register. That means downwind states will see less pollution during this year's summer smog season. It is ultimately expected to reduce NOx pollution from those plants by 19 percent over 2019 levels, and is expected to provide an estimated $2.8 billion in health and environmental benefits.

However, more than one-third of all coal plants in the Eastern U.S. have not yet installed modern pollution controls for NOx, and will not be covered by the update. EPA will need to take further action to protect Americans from the more than 250,000 tons of NOx, and more than 300 million tons of climate pollution, those plants emitted in 2018.

The update will help meet the Clean Air Act's 2008 national ozone standard. However our nation's health-based standard for ozone was updated and made more protective in 2015. EPA will need to swiftly require additional pollution reductions for NOx from coal plants so we can ensure our air quality meets the vital 2015 health standard.

Continued Investment, Innovation in Advanced Technology Diesel Engines Sustains Clean Air and Climate Progress

Washington, DC, March 16, 2021 (GLOBE NEWSWIRE) — In comments submitted today to the U.S. Senate Energy and Natural Resources Committee Hearing – "Ways to Strengthen Research and Development in Innovative Transportation Technologies with a Focus on Solutions that Decrease Emissions, Reduce Our Reliance on Foreign Supply Chains, and Increase Manufacturing in the United States" – the Diesel Technology Forum outlined the success of past investments in research in diesel engine efficiency and emissions that have created jobs, improved air quality and lowered greenhouse gas emissions.

"It is fitting that the Committee is holding this hearing on innovative transportation technologies today, just a few days before the 163rd birthday of Rudolph Diesel, inventor of the diesel engine. Well over a century has passed since Diesel's invention, and today it is the prime mover of 15 sectors of the global economy. Diesel technology was innovative in its earliest days and it is clear that manufacturers relentless course of innovation, investment and continuous improvement has not only paid off, but ensured its role in the future," said Allen Schaeffer, executive director of the Diesel Technology Forum, a not-for-profit educational organization dedicated to raising awareness about the importance of diesel engines and the latest generations of advanced diesel technologies and fuels.

"Today diesel engines are delivering substantial benefits to society in the form of efficient and clean power. Thanks to sustained research and investment from leading manufacturers, suppliers and fuel producers, advanced diesel engines have undergone a fundamental transformation in environmental performance while boosting energy efficiency.

"In the commercial trucking sector, the U.S. Department of Energy SuperTruck program, a partnership between manufacturers and government, has resulted in new understanding about combustion and emissions reduction. The SuperTruck program has translated fundamental research

into new commercial technology on the road today that enables trucks to use less fuel and emit fewer greenhouse gas and other emissions. From coupling with hybrid-electric technology and battery-storage systems, to pushing thermal efficiency boundaries, to advanced waste-heat recovery systems, to utilizing high-quality advanced renewable biodiesel fuels, research has played a key role in ensuring that advanced diesel technology and fuels will contribute to meeting clean air and climate goals for a sustainable future.

"While zero-emissions solutions for some applications are planned for the future, few are available today, and analysts predict that diesel engines are expected to continue to dominate the trucking sector well beyond the 2030 timeframe. Even as manufacturers are working to develop new power options such as battery-storage/electrification and hydrogen, the adoption of these solutions at market scale could be well into the future, according to many analysts. This underscores the importance of continued innovation, investment and progress in advanced diesel engines to sustain progress toward meeting national and international climate and clean air goals.

"The use of advanced renewable biofuels in diesel engines is growing and is an important opportunity that leverages existing vehicle technology and infrastructure while also delivering meaningful greenhouse gas emissions reductions. Large investments are being made in the refining sector to boost the supply of advanced biofuels including renewable diesel fuel and biodiesel fuel that, when used in diesel engines, yield substantial greenhouse gas emissions benefits at very low cost. Low-carbon fuel policies in California and those being considered in other regions, are realizing the cost savings and other benefits of using these fuels compared to zero emission vehicle alternatives that require considerable infrastructure investments and new vehicles to fully realize their benefits."

The diverse nature and significance of the challenge to reduce global greenhouse gas emissions dictates that it is not a one-size fits all problem, but instead one where many solutions will be needed. An effective climate policy is also one that balances near-term strategies for greenhouse gas emissions reductions alongside investments in future zero-emissions solutions. The advanced generation of diesel technology is part of a National Climate Solution, for many reasons:

Diesel is an Economic Driver: Heavy-duty diesel engines manufactured in the U.S. in 2019 exceeded 900,000 units. Diesel engines and the vehicles and equipment they power are directly responsible for supporting $12 billion in economic activity (Q1 2019) or about 12 percent of all private sector economic activity. Without diesel trucks and equipment, we could not generate the $1.2 billion in economic activity provided by the warehousing and logistics sector. According to research commissioned by the Diesel Technology Forum, industries that produce diesel technology and use these technologies generate $275 billion in economic activity.

Diesel is a U.S. Manufacturing and Skilled Workforce Success Story: Nearly 1 million heavy-duty diesel engines were manufactured in facilities in 13 states across the U.S. in 2019. It takes a highly skilled workforce to produce these engines and an even larger workforce to keep these engines running. The Department of Labor estimates that more than 265,000 Americans are employed as truck, bus and diesel engine specialists. Diesel mechanics are employed in a growth industry, as the Department of Labor predicts that the industry will expand by five percent each year.

New Technology Diesel Engines Deliver Clean Air Benefits Today: According to the latest information, 43 percent of the U.S. commercial truck fleet in operation on our roads today is of the newest generation clean diesel power that achieves near-zero emissions. These new technology diesel engines have eliminated more than 26 million tons of nitrogen oxides (NOx) already since 2010. New diesel trucks are so clean that it would take more than 60 new-generation diesel trucks to equal the emissions from one truck sold in 1988.

New Technology Efficient Diesel Engines Are Delivering Major Greenhouse Gas (CO_2) Reductions Today: More efficient diesel trucks now on the road since 2010 have already saved 12 billion gallons of fuel and eliminated 126 million tons of greenhouse gas emissions between 2011 and 2018. This is equivalent to taking 26 million cars off the road for a year.

The U.S. Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) estimate that the Commercial Vehicle Fuel Economy and Greenhouse Gas Reduction Standards Phase 1 rules saved 270 million tons of CO_2 and 530 million barrels of oil between 2014

and 2018, and that the Phase 2 rules will save another one billion tons of CO2 and nearly two billion barrels of oil between 2021 and 2027. Research commissioned by the Diesel Technology Forum confirms that the majority of these significant benefits will be delivered by more efficient diesel trucks. These benefits are enormous, and they will be largely generated by diesel technology, as 80 percent of truck sales by 2030 will still be diesel. These more efficient trucks will have eliminated the same emissions as taking just about every car off U.S. roads for a year.

Use of Advanced Renewable Low-Carbon Biodiesel Fuels Enhances Diesel: More and more fleets are making the switch to advanced biofuels including renewable diesel fuel and biodiesel fuel. These fuels are considered advanced biofuels by the EPA capable of reducing greenhouse gas emissions by at least 50 percent. In California, where the use of these fuels is growing quickly, biodiesel and renewable diesel fuel have provided the greatest reduction in greenhouse gas emissions, according to the California Air Resources Board. These significant benefits could not be realized without the diesel engine.

Michael Phillis, 360, EPA Imposes Power Plant Emissions Limits In 12 States

By Michael Phillis

Law360 (March 16, 2021, 1:57 PM EDT) -- In response to a D.C. Circuit ruling that the U.S. Environmental Protection Agency isn't doing enough to address pollution from states that makes it harder for those that sit downwind from them to meet clean air targets, the EPA finalized a rule requiring ozone emissions reductions from power plants in 12 states.

The agency on Monday finalized changes to the Cross-State Air Pollution Rule Update, aimed at addressing the "good neighbor" provision of the Clean Air Act that imposes requirements on upwind states to reduce emissions if they significantly contribute to high levels in states downwind. As soon as this summer, power plants in Kentucky, New York, Ohio, Pennsylvania and several other states will be expected to reduce the amount of nitrogen oxide emissions they produce.

"EPA plays a critical role in working with states and the power sector to prevent pollution released in one state from harming the health and air quality of its neighbors," recently confirmed EPA Administrator Michael Regan said in a statement Monday.

In July, a New York federal judge set a tight deadline of March 15 for the EPA to issue plans to hold states accountable for their ozone emissions, saying the agency has long been aware of its obligations and needed to finally act.

The rule only addresses power plant sources so that downwind states have a chance of complying with 2008 air quality standards. The rule does not address stronger 2015 standards. The reductions will involve the "optimization of existing, already-installed selective catalytic reduction and non-catalytic reduction controls." There may also be upgrades or new equipment to reduce nitrogen oxides, or NOx, for next year's summer ozone season, according to the agency.

Ozone is linked to respiratory harms, including worsened asthma, according to the agency.

The EPA's obligation to act comes after a pair of decisions handed down by the D.C. Circuit that found fault with how the Trump administration had interpreted the Clean Air Act. In October 2019, the D.C. Circuit said the EPA failed to protect states that sit downwind from other ozone-polluting states, throwing out the agency's close-out rule, which did not impose additional emission requirements on upwind states under the good neighbor provision of the CAA. An earlier ruling, State of Wisconsin et

al. v. EPA, said the EPA must "eliminate, not just reduce, upwind states' excess emissions" by an established deadline.

In Wisconsin, the panel said downwind states must comply with CAA-mandated ozone levels and that they face deadlines for doing so. The panel said the 2016 update to the Cross-State Air Pollution Rule, or CSAPR update, must force upwind state polluters to improve so the downwind states have a chance of complying with 2008 air quality standards by the law's deadline.

Earthjustice said that as the Biden EPA addresses the more protective 2015 ozone standards, its actions will be "a test of its stated commitment to environmental justice."

"We are encouraging the administration to achieve greater pollution reductions under the more protective 2015 ozone standard, and to restrict the use of emissions credit trading, which creates pollution hotspots in already overburdened communities," Kathleen Riley, an Earthjustice attorney, said in a statement.

Graham McCahan, an attorney with the Environmental Defense Fund, said the east coast suffers from pollution caused by coal-fired power plants.

"The update to the Cross State Air Pollution Rule is a common sense step to help them," McCahan said in a statement. "We can do much more, though. We urge EPA to build on this foundation and strengthen smog protections for all Americans who live near coal plants or in downwind states."

--Editing by Alyssa Miller.

Rachel Frazin, The Hill, EPA finalizes rule aimed at reducing smog pollution across state lines
The Environmental Protection Agency (EPA) has finalized a rule that aims to reduce smog pollution from 12 states that can cross state lines, it announced late Monday.
The rule will require additional controls for nitrogen oxides, which can form smog or ozone pollution, on power plants in the dozen states.
It follows a 2019 court decision requiring the agency to take additional action to prevent downwind states from being impacted by their neighbors' pollution.
The rule was first proposed in October under the Trump administration, but was finalized this year, making it among the first environmental actions the Biden administration has carried out.
"The action we are taking today will not only help states meet their clean air obligations, but, more importantly, deliver cleaner, healthier air to millions of Americans starting this summer," EPA Administrator Michael Regan said in a statement.
The agency said it expects to reduce nitrogen oxide emissions by 17,000 tons starting this year.
Exposure to these types of pollutants have been linked to lung issues including asthma attacks.
While advocates characterized the rule as a positive step, some said they had wished the Biden administration had worked toward more significant reductions.
"They could have required greater reductions in...the emissions that create ozone," said Kathleen Riley, an attorney with Earthjustice.

- Sandstorm creates 'airpocalypse' in China
- Progressive groups announce $30M voting rights effort

Riley also took issue with a provision that allows states to buy credits from others that make more progress on reducing emissions, saying this can create pollution "hot spots" for the states that don't sufficiently reduce pollution.
"We've seen how relatively unrestricted emissions credit trading can create those pollution hot spots and we think that emissions credits trading in the future has to be restricted to protect overburdened communities," she said.
The rule will impact emissions from Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania, Virginia and West Virginia.

Oahidur Islam Roman, The Bisovu Network, Plotting future, U.S. biofuel industry seeks federal clean fuel program from Biden

> America's biggest biofuel companies plan to ask President-elect Joe Biden to impose a nationwide standard to reduce carbon emissions from transport fuels, according to five sources familiar with the matter, and hope to preserve a role for products like ethanol amid the fight against climate change.
> The planned push from the biofuel industry reflects its increasing concern about the future as Biden prepares measures to slash emissions that could upend traditional energy markets, and as the federal regulation that has underpinned growth in the biofuel market for more than a decade – the Renewable Fuel Standard – nears expiry in its current form.
> Officials from biofuel companies and trade groups like POET LLC, Pacific Ethanol, and the Renewable Fuels Association teamed up with representatives from the agriculture, autos, and electricity industries to draft a letter to Biden urging a nationwide "clean fuel standard," the sources said.
> It was not clear which groups had signed the final letter.
> Such a rule would require reductions in the amount of greenhouse gas emissions emitted through the production, transport and combustion of fuels, but would allow for flexibility for how those goals are achieved – including through the purchase of carbon credits generated by companies like electrical vehicle producers.
> "A federal clean fuels policy is crucial to provide a durable price signal for clean fuels deployment, including electricity, hydrogen, biofuels, and others, across the country," the letter, seen by Reuters, said. The group planned to send the letter soon, the sources said.
> Biofuel producers claim the carbon intensity of their fuels is low, mainly because they are produced from renewable crops like corn and other organic materials.
> Transportation is the largest source of greenhouse gas emissions in the United States, ahead of the power industry, and will be a target for Biden as he seeks to deliver on a campaign promise to bring the country to net-zero emissions by 2050.
> California already has a Low Carbon Fuel Standard, and the head of the state's environmental body overseeing the program, Mary Nichols, is on Biden's short list to run the U.S. Environmental Protection Agency.
> "There is growing consensus among the biofuel community that there is a lot of promise for ethanol and other renewable fuels in a national LCFS (Low Carbon Fuel Standard) program that is truly tech- and fuel-neutral," one source familiar with the industry's deliberations said.
> A NEW COURSE
> The draft letter shows the industry, for the first time, charting a potentially different future than the one that has been laid out by the Renewable Fuel Standard, a George W. Bush-era law that requires refiners blend increasing amounts of biofuels into the fuel pool.

While the RFS has created a multibillion-gallon annual market for ethanol and other biofuels, the regulation will reset in 2022. At that point, the authority to set new annual volume targets moves to the discretion of the EPA, raising uncertainty over future demand for biofuels. Biden's yet-to-be defined climate policy adds to that uncertainty because it could drastically reduce demand for liquid fuels if it is not flexible.

The working group that drafted the letter first began conversations more than a year ago, well before the presidential election, to find common ground between the industries. Once Biden won the election, they finalized the memo, according to one of the sources.

President Donald Trump had downplayed concerns about global warming and had been undoing environmental regulation to unfetter drillers, miners and manufacturers.

The working group has discussed whether a national low-carbon fuel program would be applied on top of the RFS after 2022, or would simply replace it, though no consensus has been reached, according to the sources.

"We have a well-established mechanism – already in statute – that gives the administration a powerful lever to shift the market toward clean, renewable energy," said Brooke Coleman of the Advanced Biofuels Business Council.

Palash Ghosh, Forbes, Here's How Volkswagen Can Beat Tesla (It's Not With Software Or Batteries)

KEY BACKGROUND

Last year, Tesla sold just under 500,000 EVs, taking a 16% share of the global market (down from 17% in 2019), while VW sold about 422,000, denoting a 13% share. In the fourth quarter of 2020, VW actually sold the most EVs (191,000) compared with 183,000 for Tesla. However, in terms of all-electric car sales, Tesla had a 23% global market share in 2020, more than double VW's 11% position (Tesla only manufactures all-electric vehicles, while VW also makes plug-in hybrids). On Monday, VW unveiled plans to operate six battery cell factories in Europe by the end of the decade; and 18,000 public battery charging stations on the continent by 2025 (a fivefold increase from its current network). VW will also set up 3,500 charging stations in the U.S. and 17,000 in China. VW expects all-electric vehicles to represent more than 70% of its total car sales in Europe (double its prior target of 35%) by 2030; and over 50% of its sales in China and the U.S. by then. 2030 is an important year for "green" cars as that is the date by when the European Commission, the executive branch of the European Union, wants to have at least 30 million zero-emission vehicles on European roads as part of its overall campaign to achieve carbon-neutrality in the EU by 2050. "We assume that [EV market] share shifts in Europe were a function of the onset of [carbon dioxide regulations] and subsidies, with Tesla also tight on inventory given the Fremont [factory in California] shutdown," Levy of Credit Suisse wrote. Trainer of New Constructs points out that since VW already makes more cars — including internal combustion engine vehicles — in a month than Tesla does in a year, it can easily overtake Tesla as the world's largest EV maker. "Tesla has yet to prove it can produce vehicles anywhere near the scale of the incumbents, who have proven they can switch their internal combustion engine production capacity over to make EVs," he says. "Further, the incumbents have a large cost advantage because they've already built and paid for their production factories while Tesla still has to build their factories."

However, UBS cautioned that VW remains far behind Tesla in terms of its software and battery capabilities, noting that VW currently has a $1,300 per car cost disadvantage in batteries versus Tesla, and that "this gap is unlikely to be closed due to Tesla's vertical integration and innovative power." Software, UBS analysts said, will be the "battleground" for EV supremacy in the future. Meanwhile, VW plans to invest $19 billion over the next five years to upgrade its digitalization and software capabilities.

CRUCIAL QUOTE

"No, we haven't considered [a deal with Tesla], we are going our own way. We want to get close and then overtake," said VW CEO Herbert Diess.

SURPRISING FACT

Despite some early successes in the EV market and its status as one of the world's largest automakers, VW remains only about one-fifth of Tesla's size in terms of market cap — $134 billion versus $678 billion.

TANGENT

VW's reputation was badly damaged by a diesel emissions scandal that emerged in 2015 when the Environmental Protection Agency found that the company rigged its diesel vehicles in order to cheat emissions tests in the U.S. Martin Winterkorn, who was VW's chief executive during the emissions scandal, will soon stand trial on charges of fraud in connection with the cheating. He has denied any wrongdoing.

WHAT TO WATCH FOR

Recent research by Wood Mackenzie, a consultancy group based in Edinburgh, Scotland, forecast that annual electric vehicle sales will reach 62 million by 2050 – at which time some 700 million electric vehicles will be on the roads. Auto sales in Europe (86%), China (81%) and North America (78%) will be dominated by EVs by that time.

Kimberly Johnson, Patch, As Millions Go Hungry, Here's How To Reduce Food Waste In NC

CHARLOTTE, NC — A year into the coronavirus pandemic, families throughout the U.S. and in North Carolina are still struggling to make ends meet. Millions can't put food on the table for their families, while others frequently go to bed hungry.

The pandemic left a profound mark on families both here and throughout the world. Yet while millions of our neighbors go hungry, many of us are wasting and throwing away food at unprecedented rates, according to a recent United Nations report.

The report, released earlier this month, estimates that 17 percent of the food produced globally each year is wasted. That amounts to 931 million metric tons of food, the report says.

The United States is the world's greatest offender, according to the Environmental Protection Agency. In this country, we throw away about 31 percent of our food annually. That amounts to 133 billion pounds and $161 billion worth of food each year.

Yet Feeding America, the nation's largest hunger-relief organization, estimates more than 174,000 people are facing food insecurity in Mecklenburg County. Nationally, at least 42 million Americans could grapple with hunger this year, partly because of the pandemic.

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Given the number of hungry people in our country, why — but, better yet, how — do we allow so much food to go to waste?

Here's a look at some truths behind food waste and what North Carolina residents can do to curb it:

What Causes Food Waste

The average person in the United States tosses about 219 pounds of food each year, according to the U.S. Department of Agriculture. Food waste happens for many reasons and at all stages of the food cycle. However, three types of food waste generally exist: food that's spoiled, food we think is spoiled, and food we know is still consumable but no longer want.

Food waste also happens at the retail and production level for numerous reasons: weather, processing and storage problems, overproduction, overbuying, poor planning — the list goes on.

Still, a majority of food thrown away is perfectly safe to eat — about 90 percent of tossed food can still be consumed, according to The Economics Review at New York University.
Yet we throw it away anyway. What gives?
The first study to look at consumer attitudes about food waste came out in June 2015 from the Johns Hopkins Center for a Livable Future. A second study by Ohio State University showed that while a majority of Americans think food waste is a problem, most find it difficult to reduce their own waste while others are "simply too busy to change."
Also, Americans spend less on groceries than people in most other countries, which means we can afford to throw away food.

Economic, Environmental Repercussions

Food production takes a significant amount of labor, material resources, time and energy; so when food is wasted, so is the money it takes to acquire these resources, according to The Economics Review at New York University.
In fact, the Food and Agriculture Organization of the United Nations recently estimates at least $1 trillion in resource costs is lost annually.
Food waste produces enormous environmental consequences, too.
An alarming amount of wasted food ends up in our landfills each year. Food waste comprises about 22 percent of all waste in municipal landfills, according to data from the U.S. Food and Drug Administration.
Food that ends up in landfills also produces a large amount of methane — a greenhouse gas more powerful than carbon dioxide. Methane and other greenhouse gases absorb infrared radiation and heat up the Earth's atmosphere, contributing to climate change.
In addition, food waste is responsible for more than 25 percent of all freshwater consumption in the United States each year. This means when we throw out food, we also waste the water it took to produce it.

How We Can Reduce Food Waste

Reducing food waste has to be a cooperative effort involving federal, state, tribal and local governments, faith-based institutions, environmental organizations, communities, and the entire food supply chain, according to the U.S. Food and Drug Administration.
To tackle the problem of food waste in the United States, the FDA joined the USDA and EPA in 2015 to set a goal to cut U.S. food waste by 50 percent by the year 2030. The agreement aims to improve coordination and communication across federal agencies in order to better educate Americans on the importance of reducing food loss and waste.

Still, the best way to cut back on food loss and waste is to not create it in the first place. Individuals can look for ways they can improve and change the way they cook, store and shop for food.
In its food recovery hierarchy, the EPA identifies source reduction as the first step to reducing food waste, followed by feeding hungry people, feeding animals, industrial use and composting. Landfills are identified as the last measure people should take in eliminating food waste.

Where To Take Your Leftover Food

While some food banks and pantries such as Feeding America do not accept most perishable or leftover food items, there are still ways to make sure food from your home doesn't go to waste.
The EPA created an Excess Food Opportunities Map, which supports keeping food out of the nation's landfills. The map identifies places that may generate extra food as well as more than 5,000 places that will take extra food, including anaerobic digestion facilities, composting facilities and food banks.

Bill would provide Jackson with tens of millions in federal funding to restore water system

By Anthony Warren | March 16, 2021 at 11:19 AM CDT - Updated March 16 at 11:21 AM

WASHINGTON, D.C. (WLBT) - Tens of millions of dollars in federal funding could soon be on its way to Jackson, through the Emergency Water Infrastructure Act.

Tuesday, Sen. Cindy Hyde-Smith announced that she had introduced the bill to help Jackson "overcome long-neglected water infrastructure upgrades."

If passed, the measure would authorize the U.S. Army Corps of Engineers to spend $47 million under its Section 219 program to help Jackson design and construct "environmental infrastructure projects."

"I cannot sit back and watch Jackson schools, businesses and residents go without water," Hyde-Smith said. "Providing safe and reliable drinking water is a local responsibility, but there are federal programs and funds available that can be used to address these types of problems."

Sen. Cindy Hyde-Smith, R-Miss. (Source: Graeme Jennings)

The bill also includes new benefits for disadvantaged communities seeking to rebuild following natural disasters and would allow the city of Jackson to access "no less than $25 million in unobligated" funding from the Economic Development Administration's (EDA) Economic Adjustment Assistance grants programs.

The announcement comes weeks after Mayor Chokwe Antar Lumumba sent a letter to Gov. Tate Reeves asking for his help in securing $47 million for immediate water repairs.

It also comes a month after severe winter weather crippled the city's water production efforts at its O.B. Curtis Water Treatment Plant. Nearly 43,000 connections were impacted by the storm, and residents were still under boil water notices Tuesday.

The bill would utilize resources from three agencies to help the city: the U.S. Army Corps of Engineers, the Environmental Protection Agency, and the EDA, according to a release from the senator's office.

"The weeks of hardship on Jackson residents is upsetting and completely unacceptable ... but the hard truth is that the crisis was just waiting to happen after decades of neglecting necessary repairs

and maintenance," Hyde-Smith said. "It's time to put that neglect behind us and work toward fixing the problem."

It is not known when the bill would be brought up for a vote.

Lack of water regulation leaves rural communities holding the bill

LETTER TO THE EDITOR Charlotte Sanford-Crane Thompson, Elkton

Infrastructure catastrophes in Texas and Michigan have brought attention to the fact that many U.S. communities lack access to clean, safe water. While folks on public water are struggling, rural Marylanders feel secure in our private wells. This security is often a mirage, however. Private wells serving less than 25 people in Maryland currently have no federal or state regulation, and home owners alone are responsible for inspecting their wells. When was the last time yours was checked? Did the landlord share that information when you moved in? Contrary to popular belief, just because water comes from a private well does not mean it is safe.

A 2018 University of Maryland study found that nearly half of the private wells surveyed did not meet Environmental Protection Agency (EPA) standards in at least one category, including 25% that had unacceptable bacteria levels. A separate study conducted on the Eastern Shore in 2020 found that 1 in 25 wells had unsafe nitrate levels. The EPA sets guidelines for a reason. Nitrates are associated with pregnancy complications, blue baby syndrome, and some cancers. Bacteria can cause potentially severe gastrointestinal illness. A cancer research group found that cancer patients on the Eastern Shore were significantly more likely to have a private well than be on city water.

There is often no noticeable difference in taste or smell in water that is safe compared to unsafe. My own well water often has a sulfur odor, which does not cause any physical harm. On the other hand, toxic levels of arsenic and nitrates do not have a taste. The Maryland Geological survey advises that if you suspect contamination, the well should be tested. Which leads to the question: How would one suspect contamination?

Many states have already taken steps to address these concerns, and it is time for Maryland to join them. House Bill 1069, currently in committee, is intended to create a well safety program to help cover the cost of well tests and treatment of contaminated wells, generate a public database of test results, and require property owners to disclose results to tenants and buyers.

Life on the Eastern Shore may be slower, but that does not mean it needs to be less safe. We all deserve access to clean fresh water, and I'll raise a glass of home sourced well water to that.

WSAV- Water advisory issued for South Beach on Tybee Island

TYBEE ISLAND, Ga. (WSAV) – Health officials are recommending swimmers stay out of the water on Tybee Island's South Beach at Chatham Street. Recent testing has detected enterococcus bacteria that could pose a risk to those who come into contact with it.

According to the Chatham County Health Department, the water advisory stretches from South Beach, along 18th Street, to Inlet Avenue.

The beach remains open, but the department recommends no swimming or wading. If fish or seafood is caught in the waters there, it should be thoroughly washed and cooked before eating.

"There is no way of knowing if going into water that is under advisory will result in illness," the department stated. "However, this beach water advisory is to alert the public of a possible risk of illness associated with water contact."

Officials say it's difficult to determine exactly where enterococcus bacteria come from, but sources could include animal waste, stormwater runoff or boating waste.

The area will be retested and the advisory will be lifted when tests show the bacteria levels meet the recommended standards of the Environmental Protection Agency.

For more information, click or tap here to view FAQs from the health department.