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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D. C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported) June 28, 2017

Commission File Number	**Registrant, State of Incorporation, Address and Telephone Number**	**I.R.S. Employer Identification No.**
1-3526	**The Southern Company** (A Delaware Corporation) 30 Ivan Allen Jr. Boulevard, N.W. Atlanta, Georgia 30308 (404) 506-5000	Ex. 6 - Personal Privacy
001-11229	**Mississippi Power Company** (A Mississippi Corporation) 2992 West Beach Boulevard Gulfport, Mississippi 39501 (228) 864-1211	Ex. 6 - Personal Privacy

The names and addresses of the registrants have not changed since the last report.

This combined Form 8-K is filed separately by two registrants: The Southern Company and Mississippi Power Company. Information contained herein relating to each registrant is filed by each registrant solely on its own behalf. Each registrant makes no representation as to information relating to the other registrant.

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrants under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter). (Response applicable to each registrant.)

Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

The Southern Company ("Southern Company") and Mississippi Power Company ("Mississippi Power") are filing this Current Report on Form 8-K to provide information regarding Mississippi Power's integrated coal gasification combined cycle project in Kemper County, Mississippi (the "Kemper IGCC").

Item 8.01. Other Matters.

See MANAGEMENT'S DISCUSSION AND ANALYSIS - FINANCIAL CONDITION AND LIQUIDITY - "Capital Requirements and Contractual Obligations" and - FUTURE EARNINGS POTENTIAL - "Construction Program - Integrated Coal Gasification Combined Cycle" of Southern Company, MANAGEMENT'S DISCUSSION AND ANALYSIS - FUTURE EARNINGS POTENTIAL - "Integrated Coal Gasification Combined Cycle" and - FINANCIAL CONDITION AND LIQUIDITY - "Capital Requirements and Contractual Obligations" of Mississippi Power, and Note 3 to the financial statements of Southern Company and Mississippi Power under "Integrated Coal Gasification Combined Cycle" in each company's Annual Report on Form 10-K for the year ended December 31, 2016 (the "Form 10-K"). See also MANAGEMENT'S DISCUSSION AND ANALYSIS - FINANCIAL CONDITION AND LIQUIDITY - "Capital Requirements and Contractual Obligations" and - FUTURE EARNINGS POTENTIAL - "Construction Program - Integrated Coal Gasification Combined Cycle" of Southern Company, MANAGEMENT'S DISCUSSION AND ANALYSIS - FUTURE EARNINGS POTENTIAL - "Integrated Coal Gasification Combined Cycle" and - FINANCIAL CONDITION AND LIQUIDITY - "Capital Requirements and Contractual Obligations" of Mississippi Power, and Note (B) to the Condensed Financial Statements under "Integrated Coal Gasification Combined Cycle" in each company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017 for additional information regarding the Kemper IGCC,

including the order issued in December 2015 by the Mississippi Public Service Commission ("PSC") authorizing rate recovery of costs related to the combined cycle and associated common facilities portion of the Kemper IGCC assets previously placed in service (the "In-Service Asset Rate Order").

At its June 21, 2017 open meeting, the Mississippi PSC unanimously passed a motion instructing its counsel to prepare an order for consideration at its July 6, 2017 meeting regarding rate recovery for the Kemper IGCC (the "Proposed Order"). Pursuant to the motion, the Proposed Order would establish (i) a regulatory liability account to maintain current rates related to the Kemper IGCC following the July 2017 completion of the amortization period for certain regulatory assets approved in the In-Service Asset Rate Order that would allow for subsequent refund if the Mississippi PSC deems the rates unjust and unreasonable and (ii) a new docket for the purposes of pursuing a global settlement of costs of the Kemper IGCC (the "Kemper IGCC Settlement Docket"). Pursuant to the motion, in the Proposed Order, the Mississippi PSC would request resolution of the following areas in any such proposed settlement agreement: (i) at a minimum, no rate increase to Mississippi Power customers (with a rate reduction focused on residential customers encouraged); (ii) removal of all cost risk to customers associated with the Kemper IGCC gasifier and related assets; and (iii) modification or amendment of the certificate of public convenience and necessity (the "CPCN") for the Kemper IGCC to allow only for ownership and operation of a natural gas facility. Pursuant to the motion, the Proposed Order would provide that any related settlement agreement be filed within 45 days from the effective date of the Proposed Order.

In addition, pursuant to the motion, the Proposed Order would provide that, in the event a settlement agreement is not reached, the Mississippi PSC would reserve its right to

take any appropriate steps, including issuing an order to show cause as to why the CPCN for the Kemper IGCC should not be revoked or amended to provide for operation as a natural gas facility only.

On June 28, 2017, Mississippi Power notified the Mississippi PSC that it is beginning a process to suspend operations and start-up activities on the gasifier portion of the Kemper IGCC. Mississippi Power believes this action is necessary for several reasons. First, in light of the uncertainty as to the future of the gasifier portion of the Kemper IGCC, Mississippi Power believes it is proper and prudent to engage in an orderly suspension to preserve workforce safety and health, while still retaining the necessary workforce and ability to run the combined cycle units. Second, Mississippi Power believes that beginning this process is a prudent step to manage costs in light of the current circumstances surrounding the Kemper IGCC, including, but not limited to, (i) the factors affecting the economics of the Kemper IGCC; (ii) the positions articulated by other parties in recent motions filed with the Mississippi PSC; and (iii) the Mississippi PSC's statement of intent and expectations relating to the establishment of the Kemper IGCC Settlement Docket.

Mississippi Power expects to continue to operate the combined cycle portion of the Kemper IGCC as it has done since August 2014.

At May 31, 2017, approximately $3.4 billion in Kemper IGCC costs were not reflected in Mississippi Power's retail and wholesale rates. These costs primarily relate to the following:

Cost Category	Actual Costs
	(in billions)
Gasifiers and gas clean-up facilities, including allowance for funds used during construction ("AFUDC")	$ 2.5
Lignite mine and carbon dioxide pipeline facilities, including AFUDC	0.4
Combined cycle and common facilities, including AFUDC	0.3
Other	0.2
Total	$ 3.4

Although the ability to achieve a negotiated settlement is uncertain, Mississippi Power intends to pursue any available settlement alternatives and will also consider other possible operational and cost recovery options. The ultimate disposition of the gasification portion of the Kemper IGCC remains subject to the Mississippi PSC's jurisdiction, including the potential resolution of the matters addressed in the Proposed Order. If, as a result of the Proposed Order, any related discussions or proceedings with the Mississippi Public Utilities Staff or the Mississippi PSC, or otherwise, Mississippi Power does not ultimately obtain rate recovery of the $3.4 billion of Kemper IGCC costs not currently in rates, Southern Company and Mississippi Power would be required to recognize a charge to income in the second quarter of 2017 for those unrecovered costs, in addition to any other costs required to be incurred.

The ultimate outcome of these matters cannot be determined at this time.

Cautionary Note Regarding Forward-Looking Statements

Certain information contained in this Current Report on Form 8-K is forward-looking information based on current expectations and plans that involve risks and uncertainties. Forward-looking information includes, among other things, statements concerning the Proposed Order and the outcome of related discussions and proceedings. Southern Company and Mississippi Power caution that there are certain factors that could cause actual results to differ materially from the forward-looking information that has been provided. The reader is cautioned not to put undue reliance on this forward-looking information, which is not a guarantee of future performance and is subject to a number of uncertainties and other factors, many of which are outside the control of Southern Company and Mississippi Power; accordingly, there can be no assurance that such suggested results

will be realized. The following factors, in addition to those discussed in the Form 10-K and subsequent securities filings, could cause actual results to differ materially from management expectations as suggested by such forward-looking information: changes in tax and other laws and regulations to which Mississippi Power is subject, including potential tax reform legislation, as well as changes in application of existing laws and regulations; the ability to control costs and avoid cost overruns during the development, construction and operation of facilities, which include the development and construction of generating facilities with designs that have not been finalized or previously constructed, including changes in labor costs and productivity, adverse weather conditions, shortages and inconsistent quality of equipment, materials, and labor, sustaining nitrogen supply, continued issues with ash removal systems or syngas coolers, contractor or supplier delay, non-performance under operating or other agreements, operational readiness, including specialized operator training and required site safety programs, unforeseen engineering or design problems, start-up activities (including major equipment failure and system integration), and/or operational performance (including additional costs to satisfy any operational parameters ultimately adopted by the Mississippi PSC); the ability to construct facilities in accordance with the requirements of permits and licenses, to satisfy any environmental performance standards and the requirements of incentives, and to integrate facilities into the Southern Company system upon completion of construction; advances in technology; actions related to cost recovery for the Kemper IGCC, including the ultimate impact of the 2015 decision of the Mississippi Supreme Court, the Proposed Order and related legal or regulatory proceedings, Mississippi PSC review of the prudence of Kemper IGCC costs and approval of further permanent rate recovery plans, actions relating to proposed securitization, satisfaction of requirements to utilize grants, and the ultimate impact of the termination of the proposed sale of an interest in the Kemper IGCC to South Mississippi Electric Power Association (now known as Cooperative Energy); and the ability of counterparties of Mississippi Power to make payments as and when due and to perform as required. Southern Company and Mississippi Power expressly disclaim any obligation to update any forward-looking information.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, each of the registrants has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: June 28, 2017

THE SOUTHERN COMPANY

By /s/Melissa K. Caen
Melissa K. Caen
Assistant Secretary

MISSISSIPPI POWER COMPANY

By /s/Melissa K. Caen
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EDITORIALS

Air Pollution Still Kills

Rebecca E. Berger, M.D., Ramya Ramaswami, M.B., B.S., M.P.H., Caren G. Solomon, M.D., M.P.H., and Jeffrey M. Drazen, M.D.

In late October 1948, a dense smog descended over the town of Donora, Pennsylvania. The town was home to a zinc plant and a steel mill, both run by the United States Steel Corporation. Susan Gnora, a 62-year-old resident of Donora, started to gasp and cough as the smog descended.[1] She died the next day. Dr. William Rongaus, a physician and a member of the board of health, went door to door, treating patients for their respiratory symptoms and encouraging them to leave town if they could. Many thousands were ill, and at least 20 people died in one of the worst air-pollution disasters in U.S. history. The Donora tragedy transformed our perception of smog from a nuisance to a potential killer.

We started to improve air quality with the Clean Air Act of 1963. In 1970, Richard Nixon established the Environmental Protection Agency (EPA) by executive order, and the Clean Air Act was amended to institute National Ambient Air Quality Standards (NAAQS), which set exposure limits for six major air pollutants.[2] Among the pollutants regulated by the EPA is fine particulate matter — inhalable particles with an aerodynamic diameter of less than 2.5 μm ($PM_{2.5}$). Major contributors to $PM_{2.5}$ in the United States include various types of transportation and the coal-fired generation of electricity.[3,4] Since the 1970s, hundreds of articles have been written establishing an association between $PM_{2.5}$ and poor health outcomes, including asthma, ischemic heart disease, and all-cause mortality in urban populations.[5,6] In response to these findings, regulators have lowered NAAQS for the allowable amount of $PM_{2.5}$ in the air.[7] Current NAAQS, last updated in 2012, set an annual mean $PM_{2.5}$ level of 12 μg per cubic meter. This standard, which is to be reviewed every 5 years, aims to protect the population, especially those who are particularly sensitive to the adverse effects of air pollution, including children, elderly persons, and persons with cardiopulmonary disease.[2] As communities meet these stricter standards, fewer people will become sick and die as a result of air pollution. A 2011 report from the EPA projected that by 2020, amendments to the Clean Air Act would prevent more than 230,000 premature deaths, largely as a result of reductions in $PM_{2.5}$ levels.[8] But are current standards sufficient to protect public health?

Di et al. now report in the *Journal* the results of a large study, including more than 60 million Medicare beneficiaries from the years 2000 through 2012, that addresses the association between annual average levels of $PM_{2.5}$ and ozone,[9] as measured at the ZIP Code level, and mortality. For every increase of 10 μg per cubic meter in $PM_{2.5}$, there was an associated 7.3% increase in all-cause mortality (95% confidence interval [CI], 7.1 to 7.5), after adjustment for demographic characteristics, Medicaid eligibility, and area-level covariates. Below the current NAAQS for $PM_{2.5}$ of 12 μg per cubic meter, the data showed that each increase in $PM_{2.5}$ of 10 μg per cubic meter was associated with an even greater increase (13.6%) in mortality (95% CI, 13.1 to 14.1). There was no appreciable level below which the risk of death tapered off — and thus no "safe" level of $PM_{2.5}$. Owing to the large size of the cohort, Di et al. were able to perform robust sub-

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group analyses and identified greater risks of death associated with air pollutants among blacks and Medicaid-eligible populations; moreover, these groups were more likely to be exposed to higher pollutant levels.

The findings of Di et al. stress the need for tighter regulation of air-pollutant levels, including the imposition of stricter limits on levels of $PM_{2.5}$. Despite compelling data, the Trump administration is moving headlong in the opposite direction. In March, Trump signed an executive order that lifted a moratorium on new leases for coal mined on public and tribal lands and began a process to dismantle guidelines intended to reduce emissions from coal-fired electricity plants.[10] Earlier this month, he announced his intention to withdraw the United States from the Paris climate agreement. Although these actions were primarily intended to undo efforts made by the Obama administration to address climate change, the potentially dire consequences also include increasing people's exposure to particulate matter. In addition, EPA Administrator Scott Pruitt has not ruled out the possibility of revoking a waiver included in the 1970 Clean Air Act that allows California to set limits on automotive tailpipe emissions that are more stringent than national standards[11]; 15 states have adopted California's standards. Revoking this waiver could have the effect of exposing more than 100 million Americans to higher levels of automobile emissions. Trump's proposed budget includes crippling cuts to the EPA, including cuts in funding for both federal and state enforcement of regulations. The increased air pollution that would result from loosening current restrictions would have devastating effects on public health.

In explaining his withdrawal from the Paris climate agreement, Trump stated, "I was elected to represent the citizens of Pittsburgh, not Paris." Ironically, Pittsburgh is less than 30 miles from the Donora Smog Museum, where a sign reads, "Clean Air Started Here." With the report by Di et al. adding to the large body of evidence indicating the risks of air pollution, even at current standards, we must redouble our commitment to clean air. If such protections lapse, Americans will suffer and we are doomed to repeat history. Do we really want to breathe air that kills us?

Disclosure forms provided by the authors are available with the full text of this editorial at NEJM.org.

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Air Pollution and Mortality in the Medicare Population

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ABSTRACT

BACKGROUND

Studies have shown that long-term exposure to air pollution increases mortality. However, evidence is limited for air-pollution levels below the most recent National Ambient Air Quality Standards. Previous studies involved predominantly urban populations and did not have the statistical power to estimate the health effects in underrepresented groups.

METHODS

We constructed an open cohort of all Medicare beneficiaries (60,925,443 persons) in the continental United States from the years 2000 through 2012, with 460,310,521 person-years of follow-up. Annual averages of fine particulate matter (particles with a mass median aerodynamic diameter of less than 2.5 μm [$PM_{2.5}$]) and ozone were estimated according to the ZIP Code of residence for each enrollee with the use of previously validated prediction models. We estimated the risk of death associated with exposure to increases of 10 μg per cubic meter for $PM_{2.5}$ and 10 parts per billion (ppb) for ozone using a two-pollutant Cox proportional-hazards model that controlled for demographic characteristics, Medicaid eligibility, and area-level covariates.

RESULTS

Increases of 10 μg per cubic meter in $PM_{2.5}$ and of 10 ppb in ozone were associated with increases in all-cause mortality of 7.3% (95% confidence interval [CI], 7.1 to 7.5) and 1.1% (95% CI, 1.0 to 1.2), respectively. When the analysis was restricted to person-years with exposure to $PM_{2.5}$ of less than 12 μg per cubic meter and ozone of less than 50 ppb, the same increases in $PM_{2.5}$ and ozone were associated with increases in the risk of death of 13.6% (95% CI, 13.1 to 14.1) and 1.0% (95% CI, 0.9 to 1.1), respectively. For $PM_{2.5}$, the risk of death among men, blacks, and people with Medicaid eligibility was higher than that in the rest of the population.

CONCLUSIONS

In the entire Medicare population, there was significant evidence of adverse effects related to exposure to $PM_{2.5}$ and ozone at concentrations below current national standards. This effect was most pronounced among self-identified racial minorities and people with low income. (Supported by the Health Effects Institute and others.)

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THE ADVERSE HEALTH EFFECTS ASSOCIATED with long-term exposure to air pollution are well documented.[1,2] Studies suggest that fine particles (particles with a mass median aerodynamic diameter of less than 2.5 μm [$PM_{2.5}$]) are a public health concern,[3] with exposure linked to decreased life expectancy.[4-6] Long-term exposure to ozone has also been associated with reduced survival in several recent studies, although evidence is sparse.[4,7-9]

Studies with large cohorts have investigated the relationship between long-term exposures to $PM_{2.5}$ and ozone and mortality[4,9-13]; others have estimated the health effects of fine particles at low concentrations (e.g., below 12 μg per cubic meter for $PM_{2.5}$).[14-18] However, most of these studies have included populations whose socioeconomic status is higher than the national average and who reside in well-monitored urban areas. Consequently, these studies provide limited information on the health effects of long-term exposure to low levels of air pollution in smaller cities and rural areas or among minorities or persons with low socioeconomic status.

To address these gaps in knowledge, we conducted a nationwide cohort study involving all Medicare beneficiaries from 2000 through 2012, a population of 61 million, with 460 million person-years of follow-up. We used a survival analysis to estimate the risk of death from any cause associated with long-term exposure (yearly average) to $PM_{2.5}$ concentrations lower than the current annual National Ambient Air Quality Standard (NAAQS) of 12 μg per cubic meter and to ozone concentrations below 50 parts per billion (ppb). Subgroup analyses were conducted to identify populations with a higher or lower level of pollution-associated risk of death from any cause.

METHODS

MORTALITY DATA

We obtained the Medicare beneficiary denominator file from the Centers for Medicare and Medicaid Services, which contains information on all persons in the United States covered by Medicare and more than 96% of the population 65 years of age or older. We constructed an open cohort consisting of all beneficiaries in this age group in the continental United States from 2000 through 2012, with all-cause mortality as the outcome. For each beneficiary, we extracted the date of death (up to December 31, 2012), age at year of Medicare entry, year of entry, sex, race, ZIP Code of residence, and Medicaid eligibility (a proxy for low socioeconomic status). Persons who were alive on January 1 of the year following their enrollment in Medicare were entered into the open cohort for the survival analysis. Follow-up periods were defined according to calendar years.

ASSESSMENT OF EXPOSURE TO AIR POLLUTION

Ambient levels of ozone and $PM_{2.5}$ were estimated and validated on the basis of previously published prediction models.[19,20] Briefly, we used an artificial neural network that incorporated satellite-based measurements, simulation outputs from a chemical transport model, land-use terms, meteorologic data, and other data to predict daily concentrations of $PM_{2.5}$ and ozone at unmonitored locations. We fit the neural network with monitoring data from the Environmental Protection Agency (EPA) Air Quality System (AQS) (in which there are 1928 monitoring stations for $PM_{2.5}$ and 1877 monitoring stations for ozone). We then predicted daily $PM_{2.5}$ and ozone concentrations for nationwide grids that were 1 km by 1 km. Cross-validation indicated that predictions were good across the entire study area. The coefficients of determination (R^2) for $PM_{2.5}$ and ozone were 0.83 and 0.80, respectively; the mean square errors between the target and forecasting values for $PM_{2.5}$ and ozone were 1.29 μg per cubic meter and 2.91 ppb, respectively. Data on daily air temperature and relative humidity were retrieved from North American Regional Reanalysis with grids that were approximately 32 km by 32 km; data were averaged annually.[21]

For each calendar year during which a person was at risk of death, we assigned to that person a value for the annual average $PM_{2.5}$ concentration, a value for average ozone level during the warm season (April 1 through September 30), and values for annual average temperature and humidity according to the ZIP Code of the person's residence. The warm-season ozone concentration was used to compare our results with those of previous studies.[10] In this study, "ozone concentration" refers to the average concentration during the warm season, unless specified otherwise.

As part of a sensitivity analysis, we also obtained data on $PM_{2.5}$ and ozone concentrations from the EPA AQS and matched that data with

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each person in our study on the basis of the nearest monitoring site within a distance of 50 km. (Details are provided in Section 1 in the Supplementary Appendix, available with the full text of this article at NEJM.org.)

STATISTICAL ANALYSIS

We fit a two-pollutant Cox proportional-hazards model with a generalized estimating equation to account for the correlation between ZIP Codes.[22] In this way, the risk of death from any cause associated with long-term exposure to $PM_{2.5}$ was always adjusted for long-term exposure to ozone, and the risk of death from any cause associated with long-term exposure to ozone was always adjusted for long-term exposure to $PM_{2.5}$, unless noted otherwise. We also conducted single-pollutant analyses for comparability. We allowed baseline mortality rates to differ according to sex, race, Medicaid eligibility, and 5-year categories of age at study entry. To adjust for potential confounding, we also obtained 15 ZIP-Code or county-level variables from various sources and a regional dummy variable to account for compositional differences in $PM_{2.5}$ across the United States (Table 1, and Section 1 in the Supplementary Appendix). We conducted this same statistical analysis but restricted it to person-years with $PM_{2.5}$ exposures lower than 12 μg per cubic meter and ozone exposures lower than 50 ppb (low-exposure analysis) (Table 1, and Section 1 in the Supplementary Appendix).

To identify populations at a higher or lower pollution-associated risk of death from any cause, we refit the same two-pollutant Cox model for some subgroups (e.g., male vs. female, white vs. black, and Medicaid eligible vs. Medicaid ineligible). To estimate the concentration-response function of air pollution and mortality, we fit a log-linear model with a thin-plate spline of both $PM_{2.5}$ and ozone and controlled for all the individual and ecologic variables used in our main analysis model (Section 7 in the Supplementary Appendix). To examine the robustness of our results, we conducted sensitivity analyses and compared the extent to which estimates of risk changed with respect to differences in confounding adjustment and estimation approaches (Sections S2 through S4 in the Supplementary Appendix).

Data on some important individual-level covariates were not available for the Medicare cohort, including data on smoking status, body-mass index (BMI), and income. We obtained data from the Medicare Current Beneficiary Survey (MCBS), a representative subsample of Medicare enrollees (133,964 records and 57,154 enrollees for the period 2000 through 2012), with individual-level data on smoking, BMI, income, and many other variables collected by means of telephone survey. Using MCBS data, we investigated how the lack of adjustment for these risk factors could have affected our calculated risk estimates in the Medicare cohort (Section 5 in the Supplementary Appendix). The computations in this article were run on the Odyssey cluster, which is supported by the FAS Division of Science, Research Computing Group, and on the Research Computing Environment, which is supported by the Institute for Quantitative Social Science in the Faculty of Arts and Sciences, both at Harvard University. We used R software, version 3.3.2 (R Project for Statistical Computing), and SAS software, version 9.4 (SAS Institute).

RESULTS

COHORT ANALYSES

The full cohort included 60,925,443 persons living in 39,716 different ZIP Codes with 460,310,521 person-years of follow-up. The median follow-up was 7 years. The total number of deaths was 22,567,924. There were 11,908,888 deaths and 247,682,367 person-years of follow-up when the $PM_{2.5}$ concentration was below 12 μg per cubic meter and 17,470,128 deaths and 353,831,836 person-years of follow-up when the ozone concentration was below 50 ppb. These data provided excellent power to estimate the risk of death at air-pollution levels below the current annual NAAQS for $PM_{2.5}$ and at low concentrations for ozone (Table 1).

Annual average $PM_{2.5}$ concentrations across the continental United States during the study period ranged from 6.21 to 15.64 μg per cubic meter (5th and 95th percentiles, respectively), and the warm-season average ozone concentrations ranged from 36.27 to 55.86 ppb (5th and 95th percentiles, respectively). The highest $PM_{2.5}$ concentrations were in California and the eastern and southeastern United States. The Mountain region and California had the highest ozone concentrations; the eastern states had lower ozone concentrations (Fig. 1).

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Table 1. **Cohort Characteristics and Ecologic and Meteorologic Variables.**

Characteristic or Variable	Entire Cohort	Ozone Concentration		$PM_{2.5}$ Concentration	
		≥50 ppb*	<50 ppb	≥12 μg/m³	<12 μg/m³
Population					
Persons (no.)	60,925,443	14,405,094	46,520,349	28,145,493	32,779,950
Deaths (no.)	22,567,924	5,097,796	17,470,128	10,659,036	11,908,888
Total person-yr†	460,310,521	106,478,685	353,831,836	212,628,154	247,682,367
Median yr of follow-up	7	7	7	7	7
Average air-pollutant concentrations‡					
Ozone (ppb)	46.3	52.8	44.4	48.0	45.3
$PM_{2.5}$ (μg/m³)	11.0	10.9	11.0	13.3	9.6
Individual covariates‡					
Male sex (%)	44.0	44.3	43.8	43.1	44.7
Race or ethnic group (%)§					
White	85.4	86.6	85.1	82.0	88.4
Black	8.7	7.2	9.2	12.0	5.9
Asian	1.8	1.8	1.8	2.1	1.6
Hispanic	1.9	2.0	1.9	1.9	1.9
Native American	0.3	0.6	0.3	0.1	0.6
Eligible for Medicaid (%)	16.5	15.3	16.8	17.8	15.3
Average age at study entry (yr)	70.1	69.7	70.2	70.1	70.0
Ecologic variables‡					
BMI	28.2	27.9	28.4	28.0	28.4
Ever smoked (%)	46.0	44.9	46.2	45.8	46.0
Population including all people 65 yr of age or older (%)					
Hispanic	9.5	13.4	8.4	8.4	10.0
Black	8.8	7.2	9.3	13.3	6.3
Median household income (1000s of $)	47.4	51.0	46.4	47.3	47.4
Median value of housing (1000s of $)	160.5	175.8	156.3	161.7	159.8
Below poverty level (%)	12.2	11.4	12.4	12.5	12.0
Did not complete high school (%)	32.3	30.7	32.7	35.3	30.6
Owner-occupied housing (%)	71.5	71.3	71.6	68.6	73.2
Population density (persons/km²)	3.2	0.7	3.8	4.8	2.2
Low-density lipoprotein level measured (%)	92.2	92.0	92.2	92.2	92.2
Glycated hemoglobin level measured (%)	94.8	94.6	94.8	94.8	94.8
≥1 Ambulatory visits (%)¶	91.7	92.2	91.6	91.7	91.7
Meteorologic variables‡					
Average temperature (°C)	14.0	14.9	13.8	14.5	13.7
Relative humidity (%)	71.1	60.8	73.9	73.7	69.6

* Summary statistics were calculated separately for persons residing in ZIP Codes where average ozone levels were below or above 50 ppb and where $PM_{2.5}$ levels were below or above 12 μg per cubic meter. The value 12 μg per cubic meter was chosen as the current annual National Ambient Air Quality Standard (NAAQS) (e.g., the "safe" level) for $PM_{2.5}$. BMI denotes body-mass index (the weight in kilograms divided by the square of the height in meters) and ppb parts per billion.

† The number for total person-years of follow-up indicates the sum of individual units of time that the persons in the study population were at risk of death from 2000 through 2012.

‡ The average values for air pollution levels and for ecologic and meteorologic variables were computed by averaging values over all ZIP Codes from 2000 through 2012.

§ Data on race and ethnic group were obtained from Medicare beneficiary files.

¶ The variable for ambulatory visits refers to the average annual percentage of Medicare enrollees who had at least one ambulatory visit to a primary care physician.

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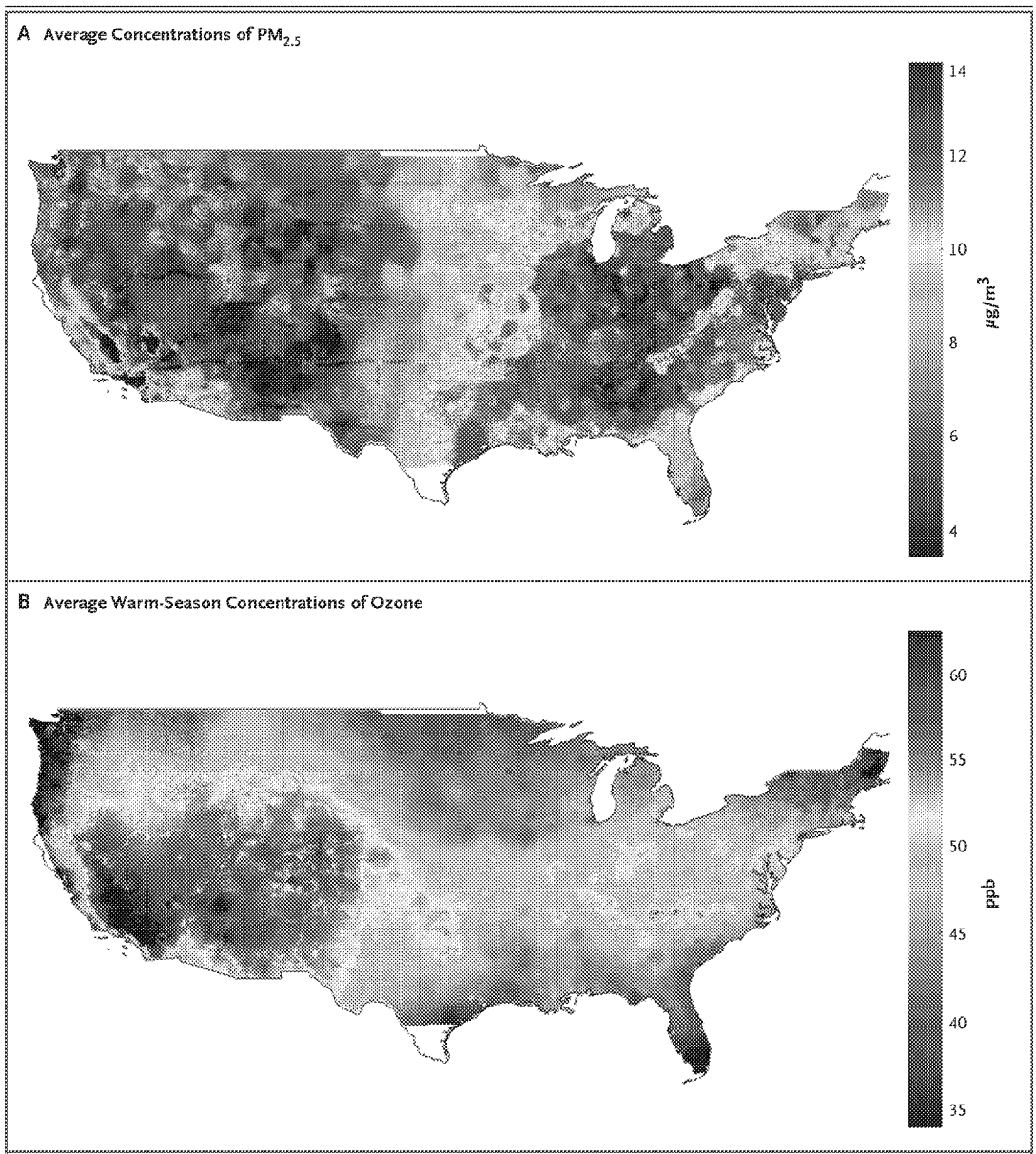

Figure 1. Average $PM_{2.5}$ and Ozone Concentrations in the Continental United States, 2000 through 2012.
Panel A shows the average concentrations of fine particulate matter (particles with a mass median aerodynamic diameter of less than 2.5 μm [$PM_{2.5}$]) in micrograms per cubic meter, as estimated on the basis of all daily predictions during the study period. Panel B shows the concentration of ozone levels in parts per billion as averaged from April 1 through September 30 throughout the study period.

In a two-pollutant analysis, each increase of 10 μg per cubic meter in annual exposure to $PM_{2.5}$ (estimated independently of ozone) and each increase of 10 ppb in warm-season exposure to ozone (estimated independently of $PM_{2.5}$) was associated with an increase in all-cause mortality of 7.3% (95% confidence interval [CI], 7.1 to 7.5) and 1.1% (95% CI, 1.0 to 1.2), respectively. Estimates of risk based on predictive, ZIP-Code–specific assessments of exposure were slightly higher than those provided by the nearest data-monitoring site (Table 2). When we restricted the $PM_{2.5}$ and ozone analyses to location-years with low concentrations, we continued to see significant associations between exposure and mortality (Table 2). Analysis of the MCBS

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Table 2. Risk of Death Associated with an Increase of 10 μg per Cubic Meter in $PM_{2.5}$ or an Increase of 10 ppb in Ozone Concentration.*

Model	$PM_{2.5}$	Ozone
	hazard ratio (95% CI)	
Two-pollutant analysis		
Main analysis	1.073 (1.071–1.075)	1.011 (1.010–1.012)
Low-exposure analysis	1.136 (1.131–1.141)	1.010 (1.009–1.011)
Analysis based on data from nearest monitoring site (nearest-monitor analysis)†	1.061 (1.059–1.063)	1.001 (1.000–1.002)
Single-pollutant analysis‡	1.084 (1.081–1.086)	1.023 (1.022–1.024)

* Hazard ratios and 95% confidence intervals were calculated on the basis of an increase of 10 μg per cubic meter in exposure to $PM_{2.5}$ and an increase of 10 ppb in exposure to ozone.

† Daily average monitoring data on $PM_{2.5}$ and ozone were obtained from the Environmental Protection Agency Air Quality System. Daily ozone concentrations were averaged from April 1 through September 30 for the computation of warm-season averages. Data on $PM_{2.5}$ and ozone levels were obtained from the nearest monitoring site within 50 km. If there was more than one monitoring site within 50 km, the nearest site was chosen. Persons who lived more than 50 km from a monitoring site were excluded.

‡ For the single-pollutant analysis, model specifications were the same as those used in the main analysis, except that ozone was not included in the model when the main effect of $PM_{2.5}$ was estimated and $PM_{2.5}$ was not included in the model when the main effect of ozone was estimated.

subsample provided strong evidence that smoking and income are not likely to be confounders because they do not have a significant association with $PM_{2.5}$ or ozone (Section 5 in the Supplementary Appendix).

SUBGROUP ANALYSES

Subgroup analyses revealed that men; black, Asian, and Hispanic persons; and persons who were eligible for Medicaid (i.e., those who had low socioeconomic status) had a higher estimated risk of death from any cause in association with $PM_{2.5}$ exposure than the general population. The risk of death associated with ozone exposure was higher among white, Medicaid-eligible persons and was significantly below 1 in some racial subgroups (Fig. 2). Among black persons, the effect estimate for $PM_{2.5}$ was three times as high as that for the overall population (Table S3 in the Supplementary Appendix). Overall, the risk of death associated with ozone exposure was smaller and somewhat less robust than that associated with $PM_{2.5}$ exposure. We also detected a small but significant interaction between ozone exposure and $PM_{2.5}$ exposure (Table S8 in the Supplementary Appendix). Our thin-plate–spline fit indicated a relationship between $PM_{2.5}$, ozone, and all-cause mortality that was almost linear, with no signal of threshold down to 5 μg per cubic meter and 30 ppb, respectively (Fig. 3, and Fig. S8 in the Supplementary Appendix).

DISCUSSION

This study involving an open cohort of all persons receiving Medicare, including those from small cities and rural areas, showed that long-term exposures to $PM_{2.5}$ and ozone were associated with an increased risk of death, even at levels below the current annual NAAQS for $PM_{2.5}$. Furthermore, the study showed that black men and persons eligible to receive Medicaid had a much higher risk of death associated with exposure to air pollution than other subgroups. These findings suggest that lowering the annual NAAQS may produce important public health benefits overall, especially among self-identified racial minorities and people with low income.

The strengths of this study include the assessment of exposure with high spatial and temporal resolution, the use of a cohort of almost 61 million Medicare beneficiaries across the entire continental United States followed for up to 13 consecutive years, and the ability to perform subgroup analyses of the health effects of air pollution on groups of disadvantaged persons. However, Medicare claims do not include extensive individual-level data on behavioral risk fac-

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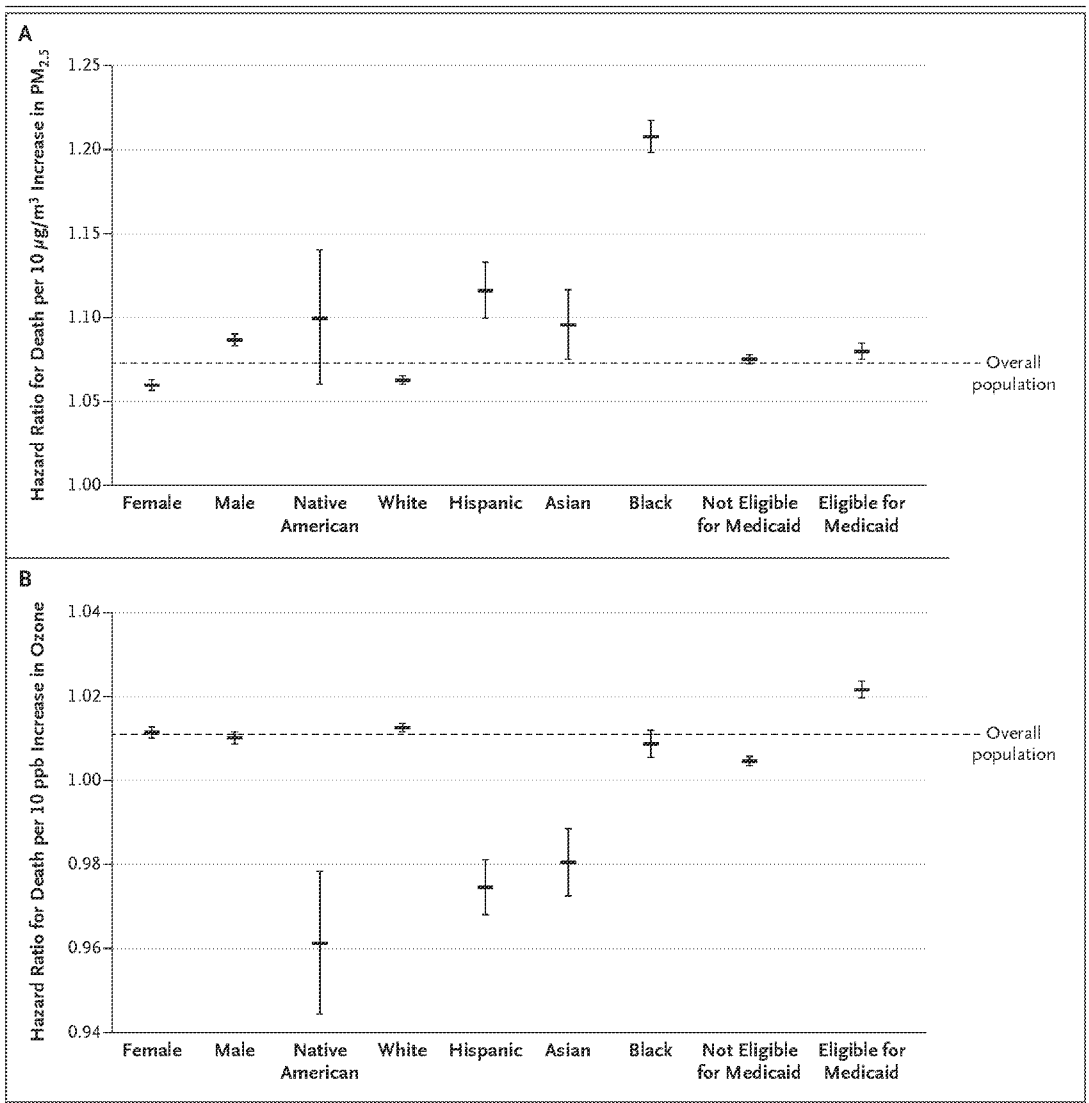

Figure 2. Risk of Death Associated with an Increase of 10 μg per Cubic Meter in $PM_{2.5}$ Concentrations and an Increase of 10 ppb in Ozone Exposure, According to Study Subgroups.

Hazard ratios and 95% confidence intervals are shown for an increase of 10 μg per cubic meter in $PM_{2.5}$ and an increase of 10 parts per billion (ppb) in ozone. Subgroup analyses were conducted by first restricting the population (e.g., considering only male enrollees). The same two-pollutant analysis (the main analysis) was then applied to each subgroup. Numeric results are presented in Tables S3 and S4 in the Supplementary Appendix. Dashed lines indicate the estimated hazard ratio for the overall population.

tors, such as smoking and income, which could be important confounders. Still, our analysis of the MCBS subsample (Table S6 in the Supplementary Appendix) increased our level of confidence that the inability to adjust for these individual-level risk factors in the Medicare cohort did not lead to biased results (Section 5 in the Supplementary Appendix). In another study, we analyzed a similar Medicare subsample with detailed individual-level data on smoking, BMI, and many other potential confounders linked to Medicare claims.[23] In that analysis, we found that for mortality and hospitalization, the risks of exposure to $PM_{2.5}$ were not sensitive to the additional control of individual-level variables that were not available in the whole Medicare population.

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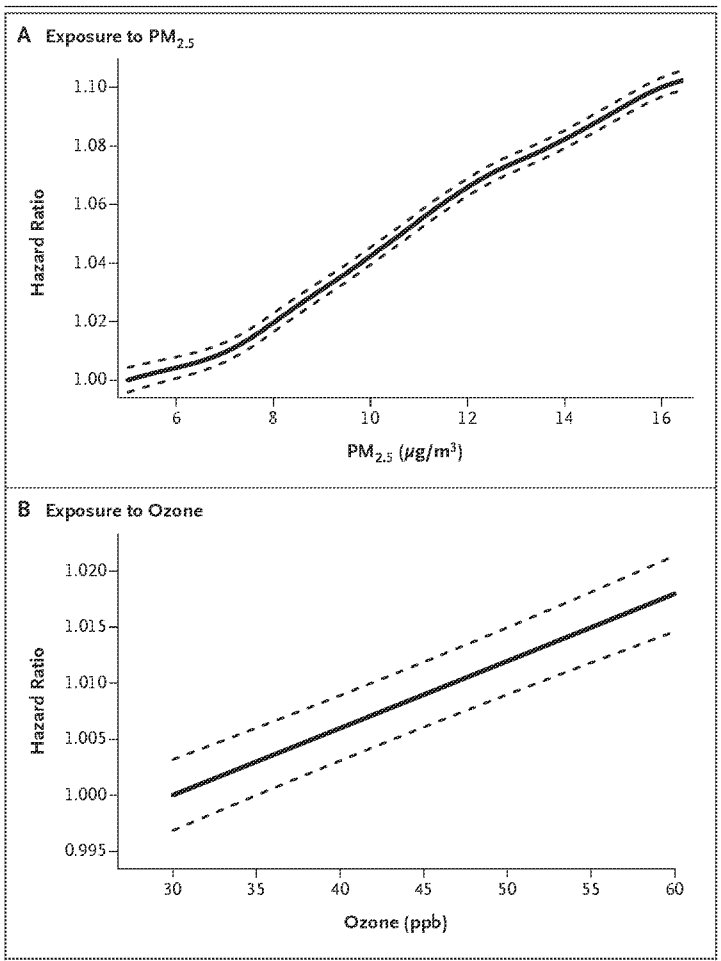

Figure 3. Concentration–Response Function of the Joint Effects of Exposure to $PM_{2.5}$ and Ozone on All-Cause Mortality.

A log-linear model with a thin-plate spline was fit for both $PM_{2.5}$ and ozone, and the shape of the concentration-response surface was estimated (Fig. S8 in the Supplementary Appendix). The concentration–response curve in Panel A was plotted for an ozone concentration equal to 45 ppb. The concentration–response curve in Panel B was plotted for a $PM_{2.5}$ concentration equal to 10 μg per cubic meter. These estimated curves were plotted at the 5th and 95th percentiles of the concentrations of $PM_{2.5}$ and ozone, respectively. The complete concentration–response three-dimensional surface is plotted in Fig. S8 in the Supplementary Appendix.

We also found that our results were robust when we excluded individual and ecologic covariates from the main analysis (Fig. S2 and Table S2 in the Supplementary Appendix), when we stratified age at entry into 3-year and 4-year categories rather than the 5 years used in the main analysis (Fig. S3 in the Supplementary Appendix), when we varied the estimation procedure (by means of a generalized estimating equation as opposed to mixed effects) (Tables S3 and S4 in the Supplementary Appendix), and when we used different types of statistical software (R, version 3.3.2, vs. SAS, version 9.4). Finally, we found that our results were consistent with others published in the literature (Section 6 in the Supplementary Appendix).[5,17,24-28]

There was a significant association between $PM_{2.5}$ exposure and mortality when the analysis was restricted to concentrations below 12 μg per cubic meter, with a steeper slope below that level. This association indicated that the health-benefit-per-unit decrease in the concentration of $PM_{2.5}$ is larger for $PM_{2.5}$ concentrations that are below the current annual NAAQS than the health benefit of decreases in $PM_{2.5}$ concentrations that are above that level. Similar, steeper concentration-response curves at low concentrations have been observed in previous studies.[29] Moreover, we found no evidence of a threshold value — the concentration at which $PM_{2.5}$ exposure does not affect mortality — at concentrations as low as approximately 5 μg per cubic meter (Fig. 3); this finding is similar to those of other studies.[18,30]

The current ozone standard for daily exposure is 70 ppb; there is no annual or seasonal standard. Our results strengthen the argument for establishing seasonal or annual standards. Moreover, whereas time-series studies have shown the short-term effects of ozone exposure, our results indicate that there are larger effect sizes for longer-term ozone exposure, including in locations where ozone concentrations never exceed 70 ppb. Unlike the American Cancer Society Cancer Prevention Study II,[9,10] our study reported a linear connection between ozone concentration and mortality. This finding is probably the result of the interaction between $PM_{2.5}$ and ozone (Section 7 in the Supplementary Appendix). The significant, linear relationship between seasonal ozone levels and all-cause mortality indicates that current risk assessments,[31-33] which incorporate only the acute effects of ozone exposure on deaths each day from respiratory mortality, may be substantially underestimating the contribution of ozone exposure to the total burden of disease.

The enormous sample size in this study, which includes the entire Medicare cohort, allowed for unprecedented accuracy in the estimation of risks among racial minorities and disadvantaged subgroups. The estimate of effect size for $PM_{2.5}$ expo-

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sure was greatest among male, black, and Medicaid-eligible persons. We also estimated risks in subgroups of persons who were eligible for Medicaid and in whites and blacks alone to ascertain whether the effect modifications according to race and Medicaid status were independent. We found that black persons who were not eligible for Medicaid (e.g., because of higher income) continued to have an increased risk of death from exposure to $PM_{2.5}$ (Fig. S4 in the Supplementary Appendix). In addition, we found that there was a difference in the health effects of $PM_{2.5}$ exposure between urban and rural populations, a finding that may be due to compositional differences in the particulates (Table S3 Supplementary Appendix).

Although the Medicare cohort includes only the population of persons 65 years of age or older, two thirds of all deaths in the United States occur in people in that age group. Although our exposure models had excellent out-of-sample predictive power on held-out monitors, they do have limitations. Error in exposure assessment remains an issue in this type of analysis and could attenuate effect estimates for air pollution.[34]

The overall association between air pollution and human health has been well documented since the publication of the landmark Harvard Six Cities Study in 1993.[25] With air pollution declining, it is critical to estimate the health effects of low levels of air pollution — below the current NAAQS — to determine whether these levels are adequate to minimize the risk of death. Since the Clean Air Act requires the EPA to set air-quality standards that protect sensitive populations, it is also important to focus more effort on estimating effect sizes in potentially sensitive populations in order to inform regulatory policy going forward.

The views expressed in this article are those of the authors and do not necessarily represent the official views of the funding agencies. Furthermore, these agencies do not endorse the purchase of any commercial products or services related to this publication.

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No potential conflict of interest relevant to this article was reported.

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

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Today, Mississippi Power and Southern Company will announce the very difficult decision to suspend operations involving the lignite gasification portion of the Kemper County energy facility (KCEF). Our plan is to continue to operate the project exclusively as a combined cycle power plant using natural gas, with the approval of the Mississippi Public Service Commission. The combined cycle natural gas plant has been serving customers with reliable and affordable electricity since August 2014.
At its June 21 meeting, the Commission asked its staff to develop a proposed new docket concerning Mississippi Power's cost recovery and the Kemper project's future operations. The Commission's desire is for all parties to reach a settlement agreement about these issues. We will work to reach a resolution and achieve the best possible outcome for everyone once the Commission establishes its process on July 6.
In light of today's decision, it is important to highlight the tremendous accomplishments of our employees and partners at the KCEF:

- The project's gasifiers have been producing syngas from locally-mined lignite coal during testing and start-up activities since July 2016

- All gasification-system components of the plant have operated and the company has achieved generation of electricity using syngas in the plant's turbines

- A total of approximately 150,000 megawatt hours of electricity has been produced using syngas

- CO2 has been captured at a rate of 65 percent as designed, with approximately 92,000 tons of CO2 placed in the CO2 pipeline and delivered for enhanced oil recovery

- Chemical products have been produced and shipped from the project

This decision, like all of our decisions, is made with the best interests of our customers in mind. We will work closely with the Mississippi Public Service Commission and other interested parties to achieve the best outcome.
Please let me know if you have any questions.

Melissa Horton
Southern Company
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June 28, 2017

Southern Company and Mississippi Power announce suspension of gasification operations

ATLANTA—Southern Company (NYSE:SO) and Mississippi Power today announced the company is immediately suspending start-up and operations activities involving the lignite gasification portion of the Kemper County energy facility. The combined cycle plant has been serving customers with reliable and affordable electricity for almost three years. The facility will continue to operate using natural gas pending the Mississippi Public Service Commission's decision on future operations.

This action is being taken to preserve the safety and health of the workforce and safety of the facility, while still retaining the necessary workforce to operate the combined cycle power plant.

"We are committed to ensuring the ongoing focus and safety of employees while we consider the future of the project, including any possible actions that may be taken by the Commission," said Southern Company Chairman, President and CEO, Thomas A. Fanning. "We believe this decision is in the best interests of our employees, customers, investors and all other stakeholders."

Southern Company and Mississippi Power believe this is the appropriate step to manage costs given the economics of the project and the Commission's intent to establish a settlement docket to address Kemper related matters including the future operation of the gasifier portion of the project.

"I am extremely proud of the thousands of our employees and the contractors who have helped construct Kemper," said Mississippi Power Chairman, President and CEO, Anthony L. Wilson. "The commitment of these individuals to their jobs, the challenges they have overcome and their dedication to our customers has been outstanding. The customer is at the center of everything that we do. We appreciate the communities we are privileged to serve and the local leaders who continue to support our company and our employees throughout this process."

The company will fully participate in the proposed settlement docket to be established by the Commission on July 6. The company will make any future announcements as to the status of the project based on the outcome of that process or future Commission action.

About Southern Company

Southern Company (NYSE: SO) is America's premier energy company, with 46,000 megawatts of generating capacity and 1,500 billion cubic feet of combined natural gas consumption and throughput volume serving 9 million electric and gas utility customers through its subsidiaries. The company provides clean, safe, reliable and affordable energy through electric utilities in four states, natural gas distribution utilities in seven states, a competitive generation company serving wholesale customers across America and a nationally recognized provider of customized energy solutions, as well as fiber optics and wireless communications. Southern Company brands are known for excellent customer service, high reliability and affordable prices that are below the national average. Through an industry-leading commitment to innovation, Southern Company and its subsidiaries are inventing America's energy future by developing the full portfolio of energy resources, including carbon-free nuclear, 21st century coal, natural gas, renewables and energy efficiency, and creating new products and services for the benefit of customers. Southern Company has been named by the U.S. Department of Defense and G.I. Jobs magazine as a top military employer, recognized among the Top 50 Companies for Diversity by DiversityInc, listed by Black Enterprise magazine as one of the 40 Best Companies for Diversity and designated a Top Employer for Hispanics by Hispanic Network. The company has earned a National Award of Nuclear Science and History from the National Atomic Museum Foundation for its leadership and commitment to nuclear development and is continually ranked among the top utilities in Fortune's annual *World's Most Admired Electric and Gas Utility* rankings. Visit our website at **www.southerncompany.com**.

About Mississippi Power

Mississippi Power, a subsidiary of Southern Company (NYSE: SO), produces safe, reliable and environmentally responsible energy for nearly 187,000 customers in 23 southeast Mississippi counties. Mississippi Power ranked first in the Southeastern Electric Exchange's 2016 Safety Performance Reports and is consistently recognized as an industry leader in reliability, customer service and safety. Visit our websites at **www.mississippipower.com** and **www.mississippipowernews.com**, like us on **Facebook**, and follow us on **Twitter, LinkedIn, Google+** and **YouTube**.

Cautionary Note Regarding Forward-Looking Statements

Certain information contained in this communication is forward-looking information based on current expectations and plans that involve risks and uncertainties. Forward-looking information includes, among other things, statements concerning the outcome of regulatory discussions and proceedings regarding the Kemper integrated coal gasification combined cycle project (Kemper IGCC). Southern Company and Mississippi Power caution that there are certain factors that could cause actual results to differ materially from the forward-looking information that has been provided. The reader is cautioned not to put undue reliance on this forward-looking information, which is not a guarantee of future performance and is subject to a number of uncertainties and other factors, many of which are outside the control of Southern Company and Mississippi Power; accordingly, there can be no assurance that such suggested results will be realized. The following factors, in addition to those discussed in Southern Company's and Mississippi Power's Annual Reports on Form 10-K for the year ended December 31, 2016 and subsequent securities filings, could cause actual results to differ materially from management expectations as suggested by such forward-looking information: changes in tax and other laws and regulations to which Mississippi Power is subject, including potential tax reform legislation, as well as changes in application of existing laws and regulations; the ability to control costs and avoid cost overruns during the development, construction and operation of facilities, which include the development and construction of generating facilities with designs that have not been finalized or previously constructed, including changes in labor costs and productivity, adverse weather conditions, shortages and inconsistent quality of equipment, materials, and labor, sustaining nitrogen supply, continued issues with ash removal systems or syngas coolers, contractor or supplier delay, non-performance under operating or other agreements, operational readiness, including specialized operator training and required site safety programs, unforeseen engineering or design problems, start-up activities (including major equipment failure and system integration), and/or operational performance (including additional costs to satisfy any operational parameters ultimately adopted by the Mississippi Public Service Commission); the ability to construct facilities in accordance with the requirements of permits and licenses, to satisfy any environmental performance standards and the requirements of incentives, and to integrate facilities into the Southern Company system upon completion of construction; advances in technology; actions related to cost recovery for the Kemper IGCC, including the ultimate impact of the 2015 decision of the Mississippi Supreme Court, the Kemper IGCC settlement docket and related legal or regulatory proceedings, Mississippi Public Service Commission review of the prudence of Kemper IGCC costs and approval of further permanent rate recovery plans, actions relating to proposed securitization, satisfaction of requirements to utilize grants, and the ultimate impact of the termination of the proposed sale of an interest in the Kemper IGCC to South Mississippi Electric Power Association (now known as Cooperative Energy); and the ability of counterparties of Mississippi Power to make payments as and when due and to perform as required. Southern Company and Mississippi Power expressly disclaim any obligation to update any forward-looking information.

Southern Company Mississippi Power

Southern Company Mississippi Power

Suspension of Gasifier Operations Talking Points

- We are today announcing the difficult decision to suspend the start-up and operations of the gasification portion of the Kemper project and operate the facility only as a natural gas combined cycle power plant.
  - This action is only a suspension and not a cancellation of the gasification portion of the project.
  - The Mississippi Public Service Commission has the ultimate authority for determining the project's future, including the possibility that the continued operation of the gasifier portion of the project may no longer be in the public interest.

- This action is being taken to preserve the safety and health of the workforce and safety of the facility, while still retaining the necessary workforce to operate the combined cycle power plant.
  - Not continuing with the start-up and operation of the gasification portion of the project could result in approximately 250 employees' jobs being at risk.
  - The company will retain the necessary workforce and ability to run the combined cycle plant.

- Southern Company and Mississippi Power believe that beginning this process now is an appropriate step given the economics of the project and the Commission's intent to establish a settlement docket to address Kemper related matters including the future operation of the gasifier portion of the project.
  - The company will fully participate in the proposed settlement docket to be established by the Commission on July 6 and will make any future announcements as to the status of the project based on the outcome of that process or future Commission action.
  - Mississippi Power will not take action beyond suspension of work involving the gasification portion of the project prior to a ruling by the Commission concerning the project, including the potential Commission approval of any settlement ultimately reached between the company and other parties.

- The combined cycle portion of the Kemper facility has been in-service and generating electricity primarily from natural gas since August 2014.
  - The combined cycle and associated components are the only portions of the project currently in rates and the action the company announced today will have no impact on customer bills.
  - The Commission must approve any change in customer bills.

Message

From: Williams, Brendan [Brendan.Williams@pbfenergy.com]
Sent: 6/29/2017 5:10:55 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Left you a vm

...but figured I'd follow up with an email too. Toyed around with some data and have additional insights. Let me know if there would be a good time to call and discuss when you get a chance.

Thx,

Brendan Williams
Government Relations
PBF Energy
601 Pennsylvania Avenue, NW
Suite 900 South
Washington, DC 20004
O: (202) 434-8254
M: (703) 863-6825
brendan.williams@pbfenergy.com
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Message

From: Chris Bliley [cbliley@growthenergy.org]
Sent: 6/30/2017 9:16:31 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Thanks!

Mandy,

As always, thanks for your time this afternoon. I know you've got tons of demands and we greatly appreciate it. Have a good weekend and a good 4th.

Chris

Chris Bliley | Vice President, Regulatory Affairs
Growth Energy
701 8th St NW Suite 450
Washington DC 20001
OFFICE 202.545.4023 CELL 202.579.7418
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FACEBOOK growthenergy.org/facebook
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Message

From: Betsy Monseu [bmonseu@americancoalcouncil.org]
Sent: 7/7/2017 8:34:22 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Ken Riddle [Ken.Riddle@lakelandelectric.com]
Subject: FW: American Coal Council thanks and invitation

Hi Mandy, I am following up from our phone conversation Wednesday 7/5, during which you indicated you would be checking with the team about a speaker for our event on August 15th. I would appreciate receiving your plans on Monday 7/10. Thanks for your continuing consideration. Enjoy your weekend!

Regards, Betsy

Betsy B. Monseu | CEO | American Coal Council
1101 Pennsylvania Ave. NW, #300
Washington, DC 20004
Office 202.756.4540 | Direct 202.805.2310
bmonseu@americancoalcouncil.org
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From: Betsy Monseu [mailto:bmonseu@americancoalcouncil.org]
Sent: Wednesday, July 5, 2017 2:12 PM
To: Mandy Gunasekara (Gunasekara.Mandy@epa.gov) <Gunasekara.Mandy@epa.gov>
Cc: Ken Riddle (Ken.Riddle@lakelandelectric.com) <Ken.Riddle@lakelandelectric.com>
Subject: RE: American Coal Council thanks and invitation

Mandy, I believe Ken Riddle spoke with you last week regarding American Coal Council's invitation to speak at our upcoming Coal Market Strategies conference, per my earlier invitation to you to have a senior representative from EPA join us at our conference in Park City, Utah in August. I'm writing today to request a response from you/EPA one way or the other by COB tomorrow. I have other speakers committed for our program that I may need to re-arrange for our general sessions August 15th and 16th if EPA is unavailable to participate, and they have been holding off making travel plans while ACC finalizes the program.

We hope EPA can participate and I will appreciate hearing from you as to a Go or No Go. If this doesn't work out, we would invite EPA to join us at a future conference.

Thanks and regards, Betsy

Betsy B. Monseu | CEO | American Coal Council
1101 Pennsylvania Ave. NW, #300
Washington, DC 20004

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bmonseu@americancoalcouncil.org
www.americancoalcouncil.org

From: Betsy Monseu [mailto:bmonseu@americancoalcouncil.org]
Sent: Thursday, June 22, 2017 10:57 AM
To: Mandy Gunasekara (Gunasekara.Mandy@epa.gov) <Gunasekara.Mandy@epa.gov>
Subject: RE: American Coal Council thanks and invitation

Mandy, we are finalizing our Coal Market Strategies program plans and I wanted to check with you again. We would be most appreciative of a senior EPA representative addressing our group. This would be as part of a policy session on the afternoon of August 15th which will include presentations/addresses by Congressman Rob Bishop (R-UT) and Chair of the Hose Natural Resources Committee and also Dr. Laura Nelson, Energy Policy Advisor to Utah Governor Gary Herbert. Congressman Bishop will be addressing coal and energy policy in the context of the 115th Congress and Trump administration. Dr. Nelson will be discussing the States' role in coal and energy development. An EPA speaker would be a valuable part of this policy session.

Please let me know if EPA can accommodate our invitation.

Thanks and regards, Betsy

Betsy B. Monseu | CEO | American Coal Council
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Washington, DC 20004
Office 202.756.4540 | Direct 202.805.2310
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www.americancoalcouncil.org

Message

From: Gunasekara, Surya [Surya@mail.house.gov]
Sent: 6/30/2017 9:03:26 PM
To: Hamill, Bobby [Bobby.Hamill@mail.house.gov]
CC: Bobby Hamill Personal Email / Ex. 6 Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Re: Moving On...

Congrats!

Surya G. Gunasekara
202-288-8657

On Jun 30, 2017, at 3:14 PM, Hamill, Bobby <Bobby.Hamill@mail.house.gov> wrote:

Friends,

Just wanted to let you know that today is my last day with Rep. Griffith. I've enjoyed the past 6 ½ years on the Hill and appreciate the support and guidance you all have provided during that time.

It's been an honor to work for the past 2 years with Rep. Griffith, representing Virginia's "Fightin' Ninth". And for the 4 ½ years prior to that with Rep. Sean Duffy, representing Wisconsin's 7th District – one of the best parts of the best state in America.

Beginning on July 10th, I'll be starting with the National Rural Electric Cooperative Association (NRECA).

Don't hesitate to contact me at Personal Email / Ex. 6 or text or call at Personal Phone / Ex. 6

And if there is anything you may need from Rep. Griffith's office, please contact Kristin Seum (Kristin.seum@mail.house.gov), who will be taking over as Legislative Director.

All the best,

Bobby Hamill
Legislative Director
Office of Rep. H. Morgan Griffith (VA-09)
(202) 225-3861 (O)

Message

From: Larry Schafer [lschafer@playmakerstrategies.com]
Sent: 6/30/2017 2:00:56 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Thank you

Mandy,

I appreciate … will talk more next week …

==========
Larry Schafer
Playmaker Strategies
202.997.8072

750 Ninth Street NW
Suite 650
Washington DC 20001

Lschafer@PlaymakerStrategies.com
www.PlaymakerStrategies.com

==========

Message

From: Eric Dell [edell@namanow.org]
Sent: 6/27/2017 1:55:35 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]; Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: Meeting Request - July 25 or 26, 2017
Attachments: Meeting Request with EPA regarding SNAP Rule.pdf

Mandy,
In follow-up to our recent conversation, please find a formal request to meet with you regarding the issues facing the vending industry in meeting the SNAP January 2019 deadline. Thanks so much for your consideration.
Thanks
Eric

W. Eric Dell
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Attorneys for Defendant

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

SIERRA CLUB, Plaintiff, STATE OF NEW YORK, Intervenor-Plaintiff, v. GINA McCARTHY, in her official capacity as the Administrator of the United States Environmental Protection Agency, Defendant.	Case No. 3:15-cv-04328-JD (JSC) **EPA'S MEMORANDUM IN OPPOSITION TO PLAINTIFF'S AND PLAINTIFF-INTERVENOR'S MOTIONS FOR SUMMARY JUDGMENT, AND IN SUPPORT OF EPA'S CROSS-MOTION FOR SUMMARY JUDGMENT, AND [PROPOSED] ORDER** Date: March 9, 2017 Time: 10:00 a.m. Place: Courtroom 11, 19th Floor

NOTICE OF CROSS-MOTION

Please take notice that on March 9, 2017 at 10:00 a.m. or as soon thereafter as counsel can be heard, Defendant, Gina McCarthy, in her official capacity as Administrator of the United States Environmental Protection Agency (hereinafter, "EPA"), will move this Court, located in Courtroom 11, 19th Floor, United States Court House located at 450 Golden Gate Avenue, San Francisco, California, to grant summary judgment as to remedy and enter EPA's Proposed Order.

RELIEF REQUESTED

The relief EPA seeks is denial of Plaintiff's and Plaintiff-Intervenor's motion for summary judgment and granting of EPA's cross-motion as to remedy and entry of EPA's Proposed Order.

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ACRONYMS

AQAT	Air quality assessment tool
CAIR	Clean Air Interstate Rule
CAMx	Comprehensive Air Quality Modeling with extensions
CoST	Control Strategy Tool
CMDB	Cost measures database
CSAPR	Cross-State Air Pollution Rule
FIP	Federal implementation plan
IPM	Integrated planning model
NAAQS	National Ambient Air Quality Standards
NODA	Notice of Data Availability
NO_X	Nitrogen oxides or oxides of nitrogen
$PM_{2.5}$	Fine particulate matter
SIP	State implementation plan
SO_2	Sulfur dioxide

Pursuant to Civil L.R. 7-2 and Fed. R. Civ. P. 56(a), Defendant Gina McCarthy, in her official capacity as Administrator of the United States Environmental Protection Agency (hereinafter "EPA"), files this opposition to Plaintiff Sierra Club's and Plaintiff-Intervenor State of New York's motions for summary judgment (Dkt. No. 62 ("Pl.'s. Br.") and 61 ("Pl.-Inv.'s Br.")) and concurrently cross-moves for summary judgment as to remedy.

I. INTRODUCTION

Plaintiff Sierra Club and Plaintiff-Intervenor State of New York allege that EPA has failed to perform a non-discretionary duty under the Clean Air Act ("CAA"), 42 U.S.C. §§ 7401-7671q, section 110(c)(1), 42 U.S.C. § 7410(c)(1), to promulgate a Federal implementation plan ("FIP") within two years of disapproving Kentucky's state implementation plan ("SIP") submission addressing the requirements of CAA section 110(a)(2)(D)(i)(I), 42 U.S.C. § 7410(a)(2)(D)(i)(I) -- the "good neighbor" provision -- for the 2008 ozone National Ambient Air Quality Standard ("NAAQS"). 2nd Am. Compl. ¶¶39-44 (Dkt. No. 39); Pl.-Int. Compl. ¶¶25-28 (Dkt. No. 45). While EPA recently promulgated a FIP that partially addresses the deficiency in Kentucky's SIP, EPA does not dispute that it has not fully performed its statutory obligation. However, Plaintiff and Plaintiff-Intervenor ask this Court to impose an unreasonable schedule on the Agency, one that would direct EPA to sign a proposed rule by January 31, 2018 and to sign a final FIP by June 11, 2018. Pl.'s Br. at 1, Pl.-Int.'s Br. at 1. In order to fulfill EPA's obligation to promulgate a FIP that fully considers the nature of the remaining air quality problems and imposes reasonable emission controls that neither impermissibly over- nor under-control the sources impacted by the FIP, consistent with the statutory requirements, the most expeditious schedule under which EPA could sign a proposed rule is November 1, 2018, and a final rule by February 1, 2020.

II. STATUTORY AND REGULATORY BACKGROUND

A. National Ambient Air Quality Standards

"The Clean Air Act sets forth a cooperative state-federal scheme for improving the nation's air quality." *Vigil v. Leavitt*, 381 F.3d 826, 830 (9th Cir. 2004). In this "cooperative federalism regime[,] . . . the federal agency sets required air quality standards but the state is a

primary actor in creating plans to achieve them, followed by potential enforcement at both state and federal levels and by private citizens." *Comm. for a Better Arvin v. EPA*, 786 F.3d 1169, 1173 (9th Cir. 2015). As part of this scheme, EPA must establish NAAQS that limit concentrations of certain pollutants in the "ambient," or outdoor, air. 42 U.S.C. §§ 7408 (a)(1), 7409 (a)-(b). These are generally referred to as "criteria pollutants." Specifically, EPA is tasked with developing "air quality criteria," which must reflect the latest scientific knowledge on "all identifiable effects on public health or welfare" that may result from a criteria pollutant's presence in the ambient air. *Id.* § 7408(a)(2). Based on the air quality criteria, EPA must promulgate "primary" and "secondary" NAAQS to protect against a criteria pollutant's "adverse" effects on public health and public welfare, respectively. *Id.* § 7409. To ensure that the NAAQS keep pace with scientific advances, EPA is required to review air quality criteria and NAAQS at least once every five years. *Id.* § 7409(d). This case relates to the standard for ozone.

B. The Clean Air Act's "Infrastructure" State Implementation Plans

States have primary responsibility for ensuring that their air quality meets the NAAQS. *Id.* § 7407(a). The CAA requires States to develop SIPs that provide for the implementation, maintenance, and enforcement of the NAAQS in each air quality control region within the State. *Id.* § 7410(a)(1)-(2). These SIPs are referred to as "infrastructure" SIPs because they address basic structural requirements for a new or revised NAAQS. The States must submit such SIPs within no more than three years after promulgation or revision of a NAAQS. *Id.* § 7410(a)(1).[1]

Section 110(a)(2) lists specific elements that States must meet, as applicable, in their general infrastructure SIP submissions. *Id.* § 7410(a)(2). The requirements include basic SIP infrastructure elements such as provisions to provide for monitoring, enforcement, and general legal authority, which are designed to assure attainment and maintenance of the NAAQS. In

---

[1] For areas that do not attain the NAAQS, states must also submit attainment SIPs designed to help states meet the NAAQS. Based on the severity of an area's ozone air quality problem, the Act specifies different dates by which states are to bring areas into attainment with the ozone NAAQS.

particular, the "good neighbor" provision requires SIPs to "contain adequate provisions . . . prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will . . . *contribute significantly to nonattainment in*, or *interfere with maintenance by*, any other State" with respect to any NAAQS. *Id.* § 7410(a)(2)(D)(i)(I) (emphasis added). These two requirements address the "interstate transport" of air pollution.

C. EPA Review of SIP Submissions and Promulgation of Federal Implementation Plans

CAA section 110(k) sets forth procedural mechanisms relating to SIP submissions or revisions. 42 U.S.C. § 7410(k). EPA must determine no later than six months after the date by which a State is required to submit a SIP whether a State has made a submission that meets minimum completeness criteria. *Id.* § 7410(k)(1)(B). If EPA does not determine completeness of the plan or revision within six months, then the submittal is deemed complete by operation of law. *Id.* Pursuant to CAA section 110(k)(2)-(4), EPA must approve, disapprove, or conditionally approve, in whole or in part, each plan or revision, within 12 months of a determination of completeness by EPA or by operation of law. *Id.* § 7410(k)(2)-(4).

If EPA has determined that a State has failed to submit a required SIP or has disapproved a SIP, EPA must promulgate a FIP within two years, unless the State submits and EPA approves a SIP correcting the deficiency before EPA promulgates such a FIP. *Id.* § 7410(c). Thus, when EPA is required to put a FIP in place, it is stepping into the State's traditional role of determining how to manage emissions in the State, including determining which sources will bear the burden of emissions reductions.

III. FACTUAL BACKGROUND

Pursuant to 42 U.S.C. § 7409(d)(1), EPA promulgated a final rule revising the ozone NAAQS in 2008 (the "2008 ozone NAAQS"). *Final Rule*, 73 Fed. Reg. 16,436 (Mar. 27, 2008). In response, the Commonwealth of Kentucky, through the Division of Air Quality of the Kentucky Energy and Environment Cabinet, submitted an infrastructure SIP addressing most of the requirements of CAA section 110(a)(2), 42 U.S.C. § 7410(a)(2), on July 17, 2012 (replacing its original September 8, 2009 submission). On March 7, 2013, EPA took final action on the

submission, disapproving the portion addressing the requirements of CAA section 110(a)(2)(D)(i)(I), 42 U.S.C. § 7410(a)(2)(D)(i)(I), for the 2008 ozone NAAQS. *Final Rule*, 78 Fed. Reg. 14,681 (Mar. 7, 2013).

EPA's action on the Kentucky SIP submission was in accord with a D.C. Circuit opinion regarding EPA and state obligations under the good neighbor provision. The court held that no state was required to submit a SIP under that provision until EPA notified it of the quantity of emissions reductions necessary to address the state's obligation pursuant to 42 U.S.C. § 7410(a)(2)(D)(i)(I). It further held that EPA could not promulgate a FIP addressing that provision until the Agency took such action. *EME Homer City Generation, L.P. v. EPA*, 696 F.3d 7 (D.C. Cir. 2012) (*EME Homer City I*) (considering challenges to the implementation of the "good neighbor" provision with respect to other NAAQS).[2] Based upon *EME Homer City I*, in disapproving Kentucky's SIP submission on July 17, 2014, EPA explained that because it had not yet quantified Kentucky's emission reduction obligation pursuant to 42 U.S.C. § 7410(a)(2)(D)(i)(I), the mere disapproval of the submission was insufficient to trigger the Agency's obligation to promulgate a FIP.[3]

Subsequently, the Supreme Court reversed the D.C. Circuit. *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584 (2014). The D.C. Circuit opinion remained effective until June 2, 2014, when the Supreme Court issued its judgment.[4] In a challenge to EPA's disapproval of the Kentucky SIP submission, the Sixth Circuit then partially vacated and remanded the portion of EPA's action determining that "a requirement for the EPA to issue a [FIP] under the Clean Air Act, 42 U.S.C. § 7410(c), regarding the 'good neighbor' provision, 42 U.S.C. § 7410(a)(2)(D)(i)(I), was not triggered when EPA disapproved the SIP."[5]

In response to the remand, on September 7, 2016, EPA issued a final action that, among

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[2] 78 Fed. Reg. at 14,684 (discussing the case).

[3] *Id.*

[4] Although the Supreme Court's opinion issued on April 29, 2014, the Supreme Court's opinions are not effective until the judgment issues.

[5] Order, at 1-2, *Sierra Club v. EPA*, No. 13-3546 (6th Cir. Mar. 13, 2015) (Dkt. No. 74-1).

other things, corrected or updated statements in the final action disapproving Kentucky's SIP submission.[6] In particular, EPA found that the Agency's FIP obligation as to Kentucky was triggered on June 2, 2014, the date that the Supreme Court clarified state and federal obligations with respect to the good neighbor provision. Thus, EPA's mandatory duty to promulgate a FIP accrued two years later, on June 2, 2016.

IV. LEGAL STANDARD

EPA does not dispute that it has not taken the required action to resolve its FIP obligation regarding the good neighbor requirements for Kentucky for the 2008 ozone NAAQS. The only dispute concerns the length of time EPA should be given to perform its obligations. Courts adjudicating similar disputes concerning the remedy for an agency's failure to meet a statutory deadline commonly resolve such disputes through summary judgment. *See, e.g.*, *Sierra Club v. McCarthy*, No. 14-cv-5091, 2015 WL 3666419, at *3 (N.D. Cal. May 7, 2015); *Sierra Club v. Johnson*, 444 F. Supp. 2d 46, 52 (D.D.C. 2006) ("Because defendant does not contest the issue of liability, the entry of summary judgment is appropriate, and it remains only for the Court to fashion an appropriate equitable remedy.") (citing cases). The Court may properly enter an order setting deadlines for EPA to perform an obligation for which it admits liability. *See Nat. Res. Def. Council, Inc. v. Train*, 510 F.2d 692, 713 (D.C. Cir. 1974).

A district court has broad discretion to fashion equitable remedies. *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 311-13 (1982); *Am. Lung Ass'n v. Browner*, 884 F. Supp. 345, 347 (D. Ariz. 1994); *see also Envtl. Def. Fund v. Thomas*, 627 F. Supp. 566, 569-70 (D.D.C. 1986) (adopting compliance schedule proposed by EPA in a case where the Agency had failed to comply with a nondiscretionary statutory duty, after finding that EPA's proposed schedule was "reasonable"). *Sierra Club v. Johnson*, 444 F. Supp. 2d at 58 (focusing on amount of time "necessary for the promulgation of workable regulations").

In a suit alleging violation of a Congressionally mandated duty, courts have recognized circumstances that can make it infeasible for an agency to comply with a particular deadline:

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[6] *Final Rule*, 81 Fed. Reg. 74,504, 74,513 (Oct. 26, 2016).

(1) the "budgetary" and "manpower demands" required are "beyond the agency's capacity or would unduly jeopardize the implementation of other essential programs," and (2) an agency's need to have more time to sufficiently evaluate complex technical issues. *Train*, 510 F.2d at 712-13. When an agency concludes that such constraints require an extension of the deadline, it may so demonstrate to the district court. *Id.* at 713. In *Train*, the D.C. Circuit reasoned that a federal court may exercise its equitable discretion to extend a deadline if the agency has "in good faith employed the utmost diligence in discharging [its] statutory responsibilities." *Id.*

In short, when an agency has missed a statutory deadline, the court should examine the relevant facts and circumstances and evaluate the time needed by the agency to take action.

V. LEGAL FRAMEWORK AND PRIOR RULEMAKINGS ON INTERSTATE TRANSPORT FEDERAL IMPLEMENTATION PLANS

Plaintiff grossly oversimplifies EPA's task and the legal certainty relating to the requirements of CAA section 110(a)(2)(D)(i)(I), 42 U.S.C. § 7410(a)(2)(D)(i)(I). *See* Pl.'s Br. at 8-9. That task is particularly difficult and fraught with the potential for over- or under-shooting the mark, in violation of the statute, as the Supreme Court emphasized, calling the task "a thorny causation problem." *EME Homer City Generation, L.P.*, 134 S. Ct. at 1604.

The statute requires States to eliminate those "amounts" of pollution that "contribute significantly to nonattainment" or "interfere with maintenance" of the NAAQS in downwind States. 42 U.S.C. § 7410(a)(2)(D)(i)(I). "Thus, EPA's task is to reduce upwind pollution, but only in 'amounts' that push a downwind State's pollution concentrations above the relevant NAAQS." 134 S. Ct. at 1603-04. The question presented to EPA is: "How should EPA allocate among multiple contributing upwind States responsibility for a downwind State's excess pollution?" *Id.* at 1604. EPA is similarly limited by the second part of the good neighbor provision, 42 U.S.C. § 7410(a)(2)(D)(i), "to reduce only by 'amounts' that 'interfere with *maintenance*,' i.e., by just enough to permit an already-attaining State to maintain satisfactory air quality." *Id.* at 1604 n.18. Moreover, "while EPA has a statutory duty to avoid over-control, the Agency also has a statutory obligation to avoid 'under-control,' *i.e.*, to maximize achievement of attainment downwind." *Id.* at 1609. Thus, as interpreted by the

courts, EPA's task requires a level of precision that the Plaintiff and Plaintiff-Intervenor fail to appreciate.[7]

Once EPA determines the amount of Kentucky's emissions that must be addressed, EPA must then step into the state's shoes and determine how to reduce those emissions, from what sources and to what extent. *See Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 470-72 (2001) (explaining that "[i]t is to the States that the Act assigns initial and primary responsibility for deciding what emissions reductions will be required from which sources."). EPA has previously addressed the requirements of the good neighbor provision for multi-state regions in four rulemakings, each of which has been subject to extensive litigation, demonstrating the complexity of the issues raised in applying the good neighbor provision. *See* 134 S. Ct. at 1604 n.18 ("Nothing in *either* clause of the Good Neighbor Provision provides the criteria by which EPA is meant to apportion responsibility."). The four prior rulemakings and associated litigation described below provide context and some guidance as to the requirements for preparing a FIP.

A. NO_X SIP Call.

The "NO_X SIP Call," promulgated in 1998, was EPA's first regional rule addressing the good neighbor provision and addressed the 1979 1-hour ozone NAAQS.[8] The rule required 22 states and the District of Columbia to amend their SIPs and limit nitrogen oxide ("NO_X") emissions that contribute to ozone nonattainment in other states. EPA set a cap on ozone season NO_X emissions for each covered state and states were given the option to participate in a regional cap-and-trade program, known as the NO_X Budget Trading Program. While the NO_X SIP Call was largely upheld by the D.C. Circuit, the court vacated and remanded certain portions of the rulemaking. *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000).

B. Clean Air Interstate Rule.

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[7] Individual states have greater flexibility in developing SIPs to address the good neighbor provision because they can select a level of control that is independent from other states (e.g., the statute permits states to impose greater emissions reductions than the statute may require).

[8] *Final Rule*, 63 Fed. Reg. 57,356 (Oct. 27, 1998).

The Clean Air Interstate Rule ("CAIR"), promulgated in 2005, addressed both the 1997 fine particulate matter ("$PM_{2.5}$") and the 1997 8-hour ozone standards under the good neighbor provision.[9] CAIR required SIP revisions in 28 states and the District of Columbia to ensure that certain emissions of sulfur dioxide ("SO_2") and/or NO_X -- important precursors of regionally transported $PM_{2.5}$ (SO_2 and NO_X) and ozone (NO_X) -- were prohibited. As under the NO_X SIP Call, states were given the option to participate in a regional cap-and-trade program to satisfy their SIP obligations. EPA also promulgated FIPs to ensure that the emission reductions required by CAIR would be achieved on schedule.[10] Upon review, the D.C. Circuit determined that CAIR was "fundamentally flawed," and the rule was remanded to EPA to be replaced "from the ground up." *North Carolina v. EPA*, 531 F.3d 896, 929, *modified on reh'g*, 550 F.3d 1176 (D.C. Cir. 2008).

C. Cross-State Air Pollution Rule ("CSAPR").

In 2011, EPA promulgated CSAPR to address the issues raised by the remand of CAIR and to address the good neighbor provision for the 2006 $PM_{2.5}$ NAAQS.[11] CSAPR requires 28 states to reduce SO_2 and NO_X emissions that significantly contribute to other states' nonattainment or interfere with other states' abilities to maintain the NAAQS. To align implementation with the applicable NAAQS attainment deadlines, EPA promulgated FIPs for the 28 states. These FIPs establish regional cap-and-trade programs to achieve the necessary emission reductions.

CSAPR was subject to four years of litigation in both the D.C. Circuit and the Supreme Court. The D.C. Circuit initially stayed and eventually vacated implementation of CSAPR. *EME Homer City I*, 696 F.3d 7. The Supreme Court reversed this decision and remanded the case to the D.C. Circuit. *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584. On July 28, 2015, the D.C. Circuit ruled on the remaining legal issues. *EME Homer City Generation, L.P. v. EPA*, 795 F.3d 118 (D.C. Cir. 2015) (*EME Homer City II*). While this decision largely

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[9] *Final Rule*, 70 Fed. Reg. 25,162 (May 12, 2005).
[10] *Final Rule*, 71 Fed. Reg. 25,328 (April 28, 2006).
[11] *Final Rule*, 76 Fed. Reg. 48,208 (Aug. 8, 2011).

upheld EPA's approach to addressing interstate transport in CSAPR, the court also remanded the rule (without vacatur) for reconsideration of fifteen state emission budgets because the court determined that EPA had or may have over-controlled emissions in those states. *Id.* at 138.

D. Cross-State Air Pollution Rule Update ("CSAPR Update").

On October 26, 2016, EPA published the Cross-State Air Pollution Rule Update, or CSAPR Update.[12] The rule promulgates FIPs for 22 states, including Kentucky, to address the good neighbor provision with respect to the 2008 ozone NAAQS at issue in this case. The FIPs require power plants, or electric generation units ("EGUs"), to participate in a regional allowance trading program beginning in May 2017 that will reduce emissions of NO_X, which contributes to ozone formation, in time to assist downwind states with meeting the July 2018 attainment date for the 2008 ozone NAAQS.

In promulgating the CSAPR Update, EPA took the same analytical approach that the Supreme Court had approved in CSAPR. In the first step of that analysis, EPA conducted complex air quality modeling to determine which states contribute to air quality problems in other states. The key factor is whether the modeling projects a state's emissions contribute one percent or more of the level of the NAAQS to areas (called receptors) that are either projected to not attain or may have trouble maintaining the NAAQS.

Of particular relevance here, the modeling showed that emissions from Kentucky were contributing above the one percent screening threshold and therefore "linked" to four downwind maintenance receptors. 81 Fed. Reg. at 74,538-39. Between seven and ten other states also contributed above the one percent screening threshold to each of these four receptors. *Id.* A total of 23 states and the District of Columbia were identified as "linked" to 19 different receptors in nine different states. *Id.* at 74,533, 74,538-39. EPA determined that these linkages warranted further evaluation of potential emissions reductions from each of these upwind states.

After determining which states were linked to problems in other states, EPA next determined what "amount" of emissions above the screening threshold would significantly

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[12] *Final Rule*, 81 Fed. Reg. 74,504 (Oct. 26, 2016).

contribute to nonattainment or interfere with maintenance at those receptors. EPA did so by analyzing various levels of uniform NO_X control stringency, represented by an estimated incremental cost per ton of NO_X reduced. Specifically, EPA evaluated the incremental cost of various power plant NO_X control strategies, available emission reductions, and downwind air quality improvements at different levels of control (or cost-thresholds) to determine the appropriate level of uniform NO_X control stringency necessary to address the impacts of interstate ozone transport on downwind nonattainment or maintenance receptors. *Id.* at 74,549. This multi-factor test generated a "knee in the curve" at a point where emission budgets reflected a control stringency with an estimated incremental cost of $1,400 per ton of NO_X emissions reduced. This was the level at which the ratio of emission reductions to incremental cost and the ratio of ozone improvements to incremental cost is maximized relative to the other levels of NO_X control stringency evaluated. Thus, EPA determined that cost-effective emissions reductions from EGUs could be achieved at a level of control stringency equivalent to $1,400 per ton of NO_X emissions reduced and EPA calculated EGU emissions budgets for each state based on these emissions reductions. *Id.* at 74,508, 74,549-50.

EPA concluded that the emissions reductions achieved by implementation of the budgets constitute a portion of each upwind state's significant contribution to nonattainment or interference with maintenance of the 2008 ozone NAAQS at these receptors. For Kentucky, the emissions budget quantified by the rule requires EGU emissions reductions of 6,616 tons (24%) from 2015 emissions levels. Kentucky's and other states' budgets are implemented through FIPs that require affected EGUs in each state to participate in a regional cap-and-trade program beginning with the 2017 ozone season. *Id.* at 74,550-53.

The CSAPR Update is a significant first step to quantifying Kentucky's emission reduction obligations with respect to the 2008 ozone NAAQS and to addressing EPA's FIP obligation pursuant to the good neighbor provision. McCabe Decl. ¶¶67-70. However, EPA could not conclude that the reductions required by the CSAPR Update represent the full amounts of emission reductions necessary for Kentucky (or 20 other states) to satisfy the requirements of the good neighbor provision. After implementation of the budgets finalized in

the CSAPR Update, EPA determined that Kentucky is linked to two receptors in Harford County, Maryland, and Richmond County, New York, that may continue to have problems maintaining the 2008 ozone NAAQS in 2017.[13] EPA further determined that emissions from Kentucky and other linked states are expected to continue to exceed the one percent screening threshold for these two receptors in 2017.

Because the CSAPR Update focused on achieving emissions reductions by the July 2018 attainment date,[14] EPA only evaluated emissions reductions achievable from EGUs by the 2017 ozone season, the last full ozone season before that date. Since EPA did not evaluate emissions reductions from EGUs on a longer timeframe or from other non-EGU point sources, EPA could not conclude that the CSAPR Update would implement *all* available cost-effective emissions reductions. Therefore, EPA could not conclude that the emissions reductions achieved through the CSAPR Update necessarily represent the full "amounts" of emissions reductions necessary to address these states' significant contribution to nonattainment and interference with maintenance of the 2008 ozone NAAQS. Thus, as discussed below, in order to fully quantify a state's significant contribution to nonattainment or interference with maintenance, EPA believes it must consider both emissions reductions available from EGUs that are achievable on a timeframe longer than 2017 and emissions reductions achievable from other sources, including non-EGU point sources. 81 Fed. Reg. at 74,521-22; *see also* McCabe Decl. ¶69.

The CSAPR Update was published in the *Federal Register* on October 26, 2016, 81 Fed. Reg. at 74,586, and thus petitions for review of that rule must be filed by December 27 2016. 42 U.S.C. § 7607(a)(1). Thus far, five states have challenged the CSAPR Update in the D.C. Circuit. *See Wisconsin v. EPA*, No. 16-1406 (D.C. Cir. filed Nov. 23, 2016).

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[13] *See* Ozone Transport Policy Analysis, Final Rule Technical Support Document (Attach. 2 to the McCabe Declaration).

[14] EPA's decision to focus on 2017 is consistent with *North Carolina v. EPA* which requires EPA to implement upwind emission reductions, *to the extent feasible*, aligned with the relevant attainment dates, which for the 2008 ozone NAAQS meant implementation starting with the 2017 ozone season. 531 F.3d at 911-12.

VI. ARGUMENT

Although it has promulgated a FIP that partially addresses the good neighbor provision for Kentucky, EPA does not dispute that it has not promulgated a FIP that fully satisfies its statutory obligation. The only dispute is over the date by which EPA must promulgate such a FIP. EPA has presented a detailed schedule of the work necessary to complete this obligation and fully explains the necessity and timeframe for each step in the Declaration of Janet G. McCabe, Acting Assistant Administrator for the Office of Air and Radiation (attached as Exhibit A). As detailed in that declaration, the most expeditious schedule under which EPA could sign a proposed and final rule addressing this obligation is November 1, 2018, and February 1, 2020, respectively. The timetable reflects the fact that EPA is not waiting for this litigation to conclude to begin the analytical work necessary to propose FIPs that fully address the good neighbor provision with respect to the 2008 ozone NAAQS for Kentucky and for other states.

The tasks required to promulgate a FIP for Kentucky are complex and interconnected, with some tasks on the critical path (i.e., shortest possible timeline) and some that can be completed concurrently with critical path or other elements. This level of analysis is necessary to ensure that EPA's final rule is technically and legally defensible, particularly in light of existing case law and pending litigation on EPA's prior regional transport rulemakings. The McCabe Declaration describes in great detail each of the steps necessary to promulgate a FIP for Kentucky and the time needed for each task, which we will not duplicate here. Instead we summarize the five groups of tasks and, to the extent any were presented, respond to Plaintiff's and Plaintiff-Intervenor's arguments or comments related to these tasks. A Gantt chart that depicts the tasks in a more easily understood visual format, including those tasks that necessarily must be completed before or after others as well as tasks that can be completed concurrently, is also attached to the McCabe Declaration (Attach. 1 to the McCabe Decl.).

Through the nearly 20 years of interstate transport rulemaking, EPA has consistently found that the ozone transport problem is regional: downwind air quality problems result from contributions of emissions from multiple upwind states; and upwind states routinely contribute

to multiple downwind air quality problems in varying amounts. McCabe Decl. ¶86. Air emissions from each upwind state do not simply travel neatly to a single downwind state and, conversely, impacted downwind states do not simply receive air emission from one upwind state. *Id.* (linkage graphic). Given the interconnected nature of ozone transport, the Supreme Court has acknowledged that EPA must determine "how to differentiate among otherwise like contributions of multiple upwind states." 134 S. Ct. at 1607. Because the ozone air quality problems are regional in nature, and EPA has a responsibility to avoid impermissible under- and over-control,[15] it is an enormous challenge to quantify the amount of emission reductions that comprise one state's good neighbor obligation without evaluating the contribution of all other states linked to the same air quality problem.[16] If EPA were to look at Kentucky in isolation, and not consider these interconnections, it would be unable to demonstrate that it had not controlled more or less of Kentucky's emissions than necessary to address the state's significant contribution to nonattainment and interference with maintenance of the NAAQS. McCabe Decl. ¶88.

In light of these constraints, EPA developed a four-step framework (referred to as the "CSAPR framework") to evaluate, quantify, and implement emissions reductions necessary to address the requirements of the good neighbor provision. The four steps are: (1) identify downwind areas (referred to as "receptors") that are expected to have problems attaining or maintaining the NAAQS using air quality modeling; (2) determine which upwind states contribute emissions in amounts sufficient to "link" them to the downwind air quality problems using contribution modeling; (3) for states linked to downwind air quality problems, identify the "amounts" of upwind emissions that significantly contribute to nonattainment or interfere with maintenance of a standard; and (4) implement the necessary emissions reductions. 81 Fed. Reg. at 74,507. Although EPA recently completed these steps in the CSAPR Update, that analysis was focused on the 2017 compliance year. As discussed more fully below, the analysis for a

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[15] *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. at 1609.
[16] *See supra* n.7.

subsequent rulemaking will necessarily focus on an analytic year later than 2017 and thus will require EPA to complete each of the steps for an appropriate future year. McCabe Decl. ¶97.

A. Task Group 1: Improve Data on Inventory and NOx Control Strategies for Non-EGUs [9.5-11.5 months]

As a first preliminary step, EPA must take steps to improve the quality of its information regarding the current status of existing controls for the non-EGU inventory and data on potential control devices that could be installed on uncontrolled or under-controlled sources. This information is necessary to quantify potential emissions impacts and reductions from non-EGU sources. If EPA does not gather this information with respect to non-EGUs, the results of EPA's subsequent analyses might be inaccurate and might result in either over- or under-control of emissions relative to downwind air quality problems, a scenario that is prohibited by 42 U.S.C. § 7410(a)(2)(D)(i). *EME Homer City Generation*, 134 S. Ct. at 1604.

Although the CSAPR Update included a preliminary assessment of non-EGU NOx emission controls that could be installed for the 2017 compliance year, EPA believes that this information is insufficient to support an evaluation of longer-term NOx emissions reduction potential for non-EGUs. McCabe Decl. ¶¶98-100. [17] Presently, EPA is completing its inventory of non-EGUs and a review of National Emissions Inventory ("NEI") to ensure that the NEI's control measures and control measure efficiency information is accurate. *Id.* ¶¶109-12. These data serve as inputs to EPA's air quality modeling platform. Concurrently, EPA is updating its control measures database to improve the data regarding existing NOx controls and NOx reduction potential from additional controls at non-EGUs. *Id.* ¶¶113-17. The database serves as a primary input for the Control Strategy Tool ("CoST"). As discussed below, the CoST model evaluates potential emissions reductions and control costs that result from the use of control devices (physical equipment) or control measures (operational changes) by matching

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[17] Final Technical Support Document for the Cross-State Air Pollution Rule for the 2008 Ozone NAAQS, Assessment of Non-EGU NOx Emission Controls, Cost of Controls, and Time for Compliance (Attach. 4 to the McCabe Declaration).

the devices or measures to the non-EGU emissions sources identified in the NEI. *Id.* ¶¶116, 120.

Once EPA has completed these tasks in January 2017, the Agency intends to conduct analyses of potential NO_X emissions reductions and costs from EGUs and the various types of non-EGU emissions sources or units and request public comment, likely through the publication of a Notice of Data Availability ("NODA"). The Agency would request comment on a number of data elements, potentially including the appropriateness of certain control measures for various sources; current costs for installation, operation, and maintenance of these control measures; and installation times for NOx control measures. The NODA would ensure that a proposed rulemaking to address the remaining interstate transport obligations for the 2008 ozone NAAQS is based on data of adequate quality. McCabe Decl. ¶¶122-24. EPA expects to issue the NODA in March 2017 and complete the public comment period in June 2017. Assessing and incorporating comments received in response to the NODA into EGU analysis, the control measures database, the CoST model, and the NEI is estimated to take between three and five months and be completed between September and November of 2017. *Id.* ¶¶125-26.

Contrary to Plaintiff's suggestion that EPA has sufficient information, Pl.'s Br. at 17, EPA anticipates that public comments on a NODA, particularly from non-EGU sources, will result in the need to update many data elements informing its analysis. McCabe Decl. ¶¶119-21. If EPA were to instead issue a proposed rule based on outdated or inaccurate information, EPA would still have to complete the same data collection effort. *Id.* ¶125. Depending on the significance of both the comments received, EPA could find it necessary to issue a supplemental proposal based on the new analysis before issuing a final rule, thus further delaying issuance of a final rule, or if the agency proceeded without a supplemental proposal, subjecting the final rule to significant legal risk, including potential vacatur of the rule.[18]

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[18] *See, e.g.*, *Ala. Envtl. Council v. EPA*, 711 F.3d 1277 (11th Cir. 2013) (vacating a SIP disapproval); *Nat. Res. Def. Council v. EPA*, 489 F.3d 1250 (D.C. Cir. 2007) (vacating emission standards).

Sierra Club does not know better than EPA what information or analysis is necessary to prepare a technically and legally defensible FIP. Deference to the agency "is highest when reviewing an agency's technical analyses and judgments involving the evaluation of complex scientific data within the agency's technical expertise." *League of Wilderness Defs. Blue Mountains Biodiversity Project v. Allen*, 615 F.3d 1122, 1130 (9th Cir. 2010). Although this case will not fix the technical decisions that EPA makes, and thus traditional agency deference is not at issue, these technical decisions regarding, for example, the need for additional data on non-EGUs, are integral to the determination of a schedule upon which the agency will act. In that vein, EPA's technical judgments should be given deference, particularly where Plaintiff and Plaintiff-Intervenor offer nothing more than conclusory estimates or their own policy choices.

B. Task Group 2: Identify Downwind Receptors and Upwind State Contributions [12 Months]

As described in the McCabe Declaration in significant detail, *see* ¶¶124-146, EPA's first step in applying the CSAPR framework is to identify downwind receptors (i.e., areas with nonattainment or maintenance issues) and the upwind states that contribute to those receptors in amounts sufficient to "link" the upwind states for purposes of further analysis. Although EPA determined that Kentucky would contribute to two maintenance receptors after implementation of the CSAPR Update emissions budgets, that finding was based on analysis of data for the 2017 compliance year. 81 Fed. Reg. at 74,507. Because the determination of what constitutes a significant contribution rests upon both whether there continue to be future downwind receptors and whether Kentucky continues to contribute to those receptors at or above the one percent screening threshold, preparing an additional FIP for Kentucky will require analysis with respect to a future analytic year. McCabe Decl. ¶¶85, 96-97, 129, 146.

The air quality modeling that EPA does for these types of assessments necessitates a determination of both a base year and the future analytic year -- that is, EPA conducts modeling to determine the air quality at some point in the future in response to known changes in air emissions between the base year and the future year. The selection of the base year requires analysis of several factors, including the available emissions inventories, measured ozone

concentrations, and meteorological conditions for the potential base years. The selection of the future analytic year for purposes of the good neighbor provision considers several factors including the relevant NAAQS attainment date and the anticipated compliance timeframes for implementation of available control strategies. The analysis to inform these selections, which can be completed concurrent with development of the NODA described above, is expected to take three months, and be completed by April 2017. During this time EPA will also create the meteorological data for the base year for the air quality modeling. *Id.* ¶¶137-40 & Attach. 1.

EPA must then assemble base year and future year emissions inventories necessary for air quality modeling. These inventories form the basis for EPA's modeling platform to project emissions in the future analytic year absent any additional control measures resulting from implementation of the good neighbor FIP. The future year emissions inventory reflects the growth in emissions from the base year, taking into account federal and state control programs as well as other changes affecting emissions in that timeframe. *Id.* ¶141. Determination of the emissions growth over the period requires consideration of each emissions source category, e.g., EGUs and non-EGUs, cars, trucks, and off-road vehicles, etc. Different analytical tools are used to forecast emissions for the various categories to the future year. *Id.* This effort can be completed in six months, or by October 2017. *Id.* ¶129, 141.

EPA must run air quality models to project ozone concentrations in the future year to identify the extent of the remaining downwind air quality problems. *Id.* ¶144. Air quality models use mathematical techniques to simulate the physical and chemical processes that affect air pollutants as they disperse and react in the atmosphere. These model runs are not simple and the programs run for up to two weeks. *Id.* ¶145. EPA must conduct the following sequential model runs using the Comprehensive Air Quality Model with Extensions ("CAMx"):

1. model-predicted ozone concentrations in the base year;
2. model-predicted ozone concentrations in the future year; and
3. model-predicted contributions from upwind states using the CAMx ozone source apportionment modeling tool. *Id.*

These scenarios are run sequentially in order to include time for quality assurance review of modeling results and possible corrections to inputs which would then require rerunning the particular simulation before proceeding on to the next run. *Id.* ¶146.

After running the models, EPA must extract and evaluate the results of the modeling (post-processing) to identify the future year receptors and quantify the upwind state contributions. *Id.* ¶¶144-45. The result of this process is a geographic and quantitative picture of which upwind emissions impact which downwind receptors, thus identifying the linkages. *Id.* at 145. The process for conducting the air quality modeling, including the development of model inputs, running the model, and post-processing and evaluation of results, as described above, is expected to take 12 months and be completed by January 2018. *Id.* ¶146.

Though Sierra Club appears to concede that additional air quality modeling will be necessary, it misunderstands the effort required and the utility of modeling work conducted for the CSAPR Update. Pl.'s Br. at 19-20; Howekamp Decl. ¶¶13, 19. Sierra Club is incorrect in its belief that "no revisions to the modeling tools are required," Howekamp Decl. ¶19, and that EPA can simply evaluate emissions reductions in a future year using the ozone air quality assessment tool ("AQAT") developed for the CSAPR Update. McCabe Decl. ¶149. The ozone AQAT was developed so that EPA could evaluate the impacts of different levels of emissions controls on downwind air quality *in 2017*, and it has not been not calibrated for any other future year. *Id.* Though Mr. Howekamp appears to concede this point, he fails to recognize that development of a new ozone AQAT will require the outputs from new air quality modeling conducted for the future analytic year. Thus, whether or not EPA utilizes the ozone AQAT tool in some manner, it must nonetheless complete the modeling described above. *Id.*

C. Task Group 3: Quantify Upwind State Obligations [5-6 months]

Once EPA completes the process to improve its non-EGU data, it can then quantify the amounts of each "linked" upwind state's emissions that constitute significant contribution to nonattainment and interference with maintenance of the 2008 ozone NAAQS. McCabe Decl. ¶150. This process consists of several stages of complex evaluations, including: identifying NO_X reduction strategies at both EGUs and non-EGUs and their associated compliance timing

and costs for sources in relevant sectors; assessing NO_X emission reduction potential through modeling using various NOx reduction strategies (i.e., tons of emissions reduced); analyzing downwind air quality impacts of such emissions reductions (i.e., improvements in ozone concentrations); selecting a level of control by applying a multi-factor test; ensuring that emissions reductions do not constitute impermissible over-control relative to the downwind air quality problems; and establishing emission limits (e.g., budgets) that represent emissions remaining following the elimination of significant contribution to nonattainment and interference with maintenance of the NAAQS downwind. *Id.* This effort requires analysis of both the potential EGU and non-EGU NO_X reductions available in Kentucky and other states. Here again, the McCabe Declaration presents an extensive and detailed justification for each of the four steps required to develop the emissions budget for Kentucky. *Id.* ¶153.

In order to quantify upwind state emission reduction obligations, EPA must first evaluate the types of emission reduction strategies that can be applied to EGUs and non-EGUs and their associated implementation timing and cost. EPA then uses this information to organize the NO_X control strategies into uniform levels of NO_X control stringency represented by uniform cost-thresholds (e.g., $5,000 per ton of NO_X emissions reduced). *Id.* ¶¶153-54. These cost-thresholds will help EPA apportion responsibility for making emissions reductions among the multiple upwind states collectively contributing to a downwind receptor. EPA can then assess the NOx emission reduction potential in the linked states at each cost-threshold, i.e., tons of emissions reductions estimated for the various control devices and measures, using two tools. *Id.* ¶155.

EPA uses the CoST model, including updates reflecting the data on non-EGU NO_X reduction control devices or measures developed in Task Group 1, to evaluate non-EGU control strategies for their NO_X emission reduction potential. *Id.* ¶¶118, 160. Specifically, EPA runs CoST at the various cost-thresholds and assesses the resulting emissions reduction potential. To address control strategies for EGUs, EPA uses an integrated planning model ("IPM"), which can model emission reductions in the power sector. *Id.* ¶¶157-59. EPA runs a series of IPM assessments that impose increasing cost thresholds representing uniform levels of NO_X controls

and assesses the resulting emission reduction potential. The CoST and IPM analyses can occur concurrently, require 2-3 months to complete, and could be completed by December 2017.

EPA then converts the projected emissions reductions from CoST and IPM into an emissions limitation for further air quality analysis. The limitation represents the remaining allowable emissions after the reductions are imposed in each state and at each cost-threshold. For example, in the CSAPR Update, EPA quantified limitations for EGU in terms of state-wide budgets representing remaining EGU emissions after implementation of the emissions reductions. The process for developing potential emissions limitations for EGUs and non-EGUs at each cost-threshold is expected to take one month and be completed in January 2018.

After EPA has quantified potential emissions limitations, the second step is to analyze downwind air quality impacts of these emissions reductions, i.e., improvements in ozone concentrations, at each level of potential NO_X control stringency. *Id.* ¶161. EPA has used the ozone AQAT to estimate the air quality impacts of the EGU NO_X emission limitations on downwind ozone pollution levels for various NO_X emission levels. *Id.* ¶162. This analysis also permits EPA to ensure that the selected level of control neither impermissibly under- nor over-controls upwind emissions relative to the downwind air quality problems. *Id.* ¶163. This task will take one month and is scheduled to be completed by February 2018. *Id.* ¶164.

Once EPA has calculated emissions limitations and improvements in air quality at downwind receptors at the various levels of NOx control stringency, EPA applies a multi-factor test to determine the appropriate level of control. The multi-factor test evaluates cost, available emissions reductions, and resulting downwind air quality impacts to determine the appropriate stopping point for quantifying upwind state obligations to address interstate ozone transport, including whether the identified downwind ozone problems are resolved. *Id.* ¶165. EPA must look at various levels of NO_X control stringency for each downwind receptor (represented by the cost thresholds) and evaluates the magnitude of the change in the ambient ozone concentration. *Id.* ¶¶152, 155, 165. EPA must then determine whether the estimated concentration would resolve each receptor's nonattainment or maintenance problem by lowering the average ozone concentration to or below the level of the NAAQS. *Id.* ¶161. As

required by the Supreme Court's holding in *EPA v. EME Homer City*, EPA must also evaluate the estimated improvement in ozone concentrations at downwind receptors to ensure that the expected ozone improvements would not be greater than necessary to resolve the downwind ozone pollution problem or that the estimated ozone improvements would not reduce Kentucky's ozone contributions to below the screening threshold, i.e., one percent of the ozone NAAQS. *Id.* ¶161; *see* 134 S. Ct. at 1608 (EPA cannot "require[ ] an upwind State to reduce emissions by more than the amount necessary to achieve attainment in *every* downwind State to which it is linked"). These tasks will take one month and could be completed by March 2018.

In total, completing the reduction potential analysis and determining the emissions budgets for the upwind states that contribute to the downwind states that Kentucky contributes to will take five to six months.

EPA does not agree with Plaintiff that there are significant short-cuts that can reduce the amount of time necessary for EPA to evaluate the remaining emissions reduction obligation for Kentucky. First, EPA could not simply impose emissions reductions on sources in Kentucky until the state's contribution to downwind receptors meets the one percent threshold. *See* Howekamp Decl. ¶12. Under the CSAPR framework, the "amounts" of emissions that must be prohibited pursuant to the good neighbor provision are those emissions that *both* exceed the one percent threshold *and* which can be eliminated through the implementation of cost-effective controls, considering downwind air quality and the contributions of other states.[19] 81 Fed. Reg. at 74,518-21; *see also* McCabe Decl. ¶¶88, 104. Thus, EPA cannot simply reduce one state's emissions reductions without considering the interrelated factors of cost-effectiveness, downwind air quality, and the contributions of other linked upwind states. *Id.*

Second, though Plaintiff suggests that EPA left readily available emissions reductions on the table, EPA explicitly included emissions reductions achievable from the optimized operation of existing selective catalytic reduction units (pollution control devices commonly referred to as

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[19] *EME Homer City Generation*, 134 S. Ct. at 1606 (holding it to be a permissible interpretation of the statute to apportion responsibility considering "both the magnitude of upwind States' contributions and the cost associated with eliminating them").

SCRs) and from plant retirements in calculating emissions budgets in the CSAPR Update. McCabe Decl. ¶¶105-7. Mr. Howekamp suggests that if a list of EGUs were operated at the lowest reported ozone season average emission rate identified at some time between 2005 and 2015, resulting emissions reductions, along with the retirement of the two EGUs, might be enough to satisfy Kentucky's obligation. *See* Howekamp Decl. ¶10 & Attach. 2 & 3. In fact, the CSAPR Update considered the extent to which certain EGUs could operate "optimally" and imposed emissions limitations based on those calculations. 81 Fed. Reg. at 74,543-44. EPA determined that the lowest rate at which an EGU has operated in the past is not cost-effectively sustainable over time. McCabe Decl. ¶¶105-6. To the extent Plaintiff disagrees, the appropriate venue to challenge those conclusions is the D.C. Circuit, where the CSAPR Update rulemaking is already being challenged.[20]

Similarly, EPA does not agree with Howekamp's spurious suggestion that, because NO_X allowances were trading at $1,100/ton (below the CSAPR Update cost-threshold of $1,400/ton) as of October 31, 2016, there are "readily available" emissions reductions. Howekamp Decl. ¶11. Mr. Howekamp fails to explain how that figure can be a means to establish Kentucky's remaining emissions reductions. McCabe Decl. ¶108. Further, to the extent this claim is cognizable, it makes an inapt comparison of the cost of an allowance on the open market, i.e., how much industry will value the allowance to emit pollutants, with the cost-threshold that acts as a proxy for available control strategies in the aggregate. *Id.*

Thus, additional analysis is required to identify both the level and source of emissions reductions required to satisfy Kentucky's obligation, McCabe Decl. ¶106, a point Mr. Howekamp concedes, Howekamp Decl. ¶14 ("In the event that the readily achievable emission reductions are not sufficient for fulfillment of Kentucky's 'good neighbor' obligation, then EPA will need to evaluate and apply additional control strategies that can be applied to completely fulfill the obligation.").

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[20] *See* 42 U.S.C. § 7607(b)(1) (exclusive jurisdiction over petitions for review of FIP is vested in the courts of appeals).

D. Task Group 4: Issue Proposed Federal Implementation Plan [11 months]

After EPA completes the technical analysis, determining the appropriate level of emissions controls, senior EPA management must make the policy decisions that will define the scope of the proposed rulemaking, and EPA must develop the rulemaking proposal. McCabe Decl. ¶¶169-173. The notice of proposed rulemaking must include a preamble that explains the legal, policy and technical bases for the proposed action in addition to presenting the actual regulatory language that will be codified if the rule, as proposed, is finalized. *See* 42 U.S.C. § 7607(d)(3). The proposal also requires detailed technical support documents ("TSD") explaining the various technical analyses supporting the proposed action. Further, EPA must prepare a variety of impact analyses to address other Federal requirements. McCabe Decl. ¶174. This process can be expected to take four to five months in total, a portion of which is concurrent with previously discussed analytic and rulemaking activities.

The proposed rulemaking must then undergo review within the Agency by various offices and levels of management, which would take two months, and then go through an interagency review process, which can take up to three months. In total, the process to develop a proposed rulemaking for signature by the Administrator requires at least seven additional months after completion of the technical analysis, and is expected to be completed by November 1, 2018.

Sierra Club severely underestimates the time required to prepare a proposed rule, claiming that only 5.5 months is required. Contrary to Plaintiff's assertion that this effort should take significantly less time than the CSAPR Update, Pl.'s Br. at 17, the opposite is actually true. McCabe Decl. ¶179. As is abundantly clear, evaluation of interstate ozone transport, even if EPA is only required to address one state's significant contribution, must necessarily evaluate the contributions of other upwind states to ensure that the state is neither impermissibly under- nor over-controlled. *Id.* ¶¶43, 98, 109. Moreover, though Plaintiff's declarant, Mr. Howekamp, has experience in various rulemakings while on the staff at EPA's Regional Office, he has never prepared a FIP addressing the good neighbor provision, an effort that is more difficult to navigate than other more straightforward FIPs that he might have

worked on. *See* Howekamp Decl. ¶¶3, 24-25. [21] In contrast to Mr. Howekamp's conclusory and unsupported opinions, the McCabe Declaration presents a detailed discussion of the amount of time that EPA expects will be necessary to issue the proposed rule. McCabe Decl. ¶¶169-79.

E. Task Group 5: Promulgate Final Federal Implementation Plan [14 months]

As Sierra Club acknowledges, the Clean Air Act requires EPA to provide 30-days' notice of the proposed rulemaking and an opportunity to provide written comments. 42 U.S.C. § 7607(d)(5). The Act also requires EPA to provide an opportunity for a public hearing, *id.*, for which the agency must provide sufficient notice -- a requirement that is presumptively satisfied if EPA provides 15 days-notice. 44 U.S.C. § 1508. If a public hearing is held, the Clean Air Act then imposes a second timing requirement -- that EPA must keep the public comment period open for 30 days after any public hearing. 42 U.S.C. § 7607(d)(5). Therefore, EPA must plan for at least a 45-day public comment period. McCabe Decl. ¶180. Moreover, rulemakings of this nature are often the subject of public requests for extensions of the comment period based on the volume of technical information provided for public review. Thus, EPA's schedule provides for a 60-day public comment period, and, if requested, a public hearing. Given that a proposed notice can take approximately a month to appear in the *Federal Register*, EPA anticipates the public comment period would close in January 2018.

EPA must then review and evaluate comments to determine whether they impact the technical analysis or the policy decisions made for purposes of developing the final rule, which would require two to three months to complete. *Id.* ¶182. The time estimates EPA presents for preparing the final rule are predicated on the issuance of the NODA described above, such that EPA does not expect to receive comments or data that would force it to prepare a supplemental proposal. However, EPA does expect to receive highly technical comments that might require it

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[21] The Howekamp Declaration identifies him as an environmental consultant. Although Mr. Howekamp provides a resume, his declaration fails to present the information required for an expert witness: the facts or data considered by the witness, a list of publications authored in the last ten years, a list of all cases the witness testified at in the past four years, and a statement of the compensation paid for his report and any testimony. Fed. R. Civ. P. 26(a)(2)(B).

to update various parts of the technical analysis, work that would be partially concurrent with evaluation of the public comments. *Id.* ¶183. Updating could include revisions to the emissions inventories, additional air quality modeling, or updates to the EGU and non-EGU cost and NO_X reduction potential analyses. *Id.* ¶184. Based on its experience, EPA estimates that the effort to update the technical analyses would take six months, partially concurrent with its review of its public comments. *Id.* & Attach. 1.

Once the updated technical analyses are completed, EPA will again need to identify issues requiring decisions by senior management, e.g., if the technical updates cause changes in the results. *Id.* ¶185. Then, as with the proposed rule, EPA will have to develop the notice of final rulemaking, the text of the regulatory requirements to be codified in the Code of Federal Regulations, updated technical support documents, and an updated regulatory impact analysis. As part of this effort, EPA must prepare responses to all significant public comments, which is a time consuming undertaking. *Id.* Considering these tasks and others described in more detail in the McCabe Declaration, EPA expects that it would take 14 months from the publication of the proposed rule to sign the final rule, i.e. by February 1, 2020. *Id.* ¶¶182-87.

Further, Plaintiff's suggestion that the Court should order EPA to transmit the final FIP to the Office of the Federal Register is unnecessary. The Court need not impose interim deadlines for ministerial acts. EPA understands that it must promulgate a FIP, a process that requires publication in the *Federal Register*. If the Court finds it necessary, it should merely order EPA to promptly transmit the final rule for publication.

VII. CONCLUSION

For the reasons explained above and in the McCabe Declaration, the Court should allow EPA until November 1, 2018 to sign a proposed rule and until February 1, 2020 to sign a final rule fully addressing the requirements of the "good neighbor" provision for Kentucky with respect to the 2008 ozone NAAQS.

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Respectfully submitted,

Date: December 15, 2016

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IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

SIERRA CLUB, Plaintiff, STATE OF NEW YORK, Intervenor-Plaintiff, v. GINA McCARTHY, in her official capacity as the Administrator of the United States Environmental Protection Agency, Defendant.	Case No. 3:15-cv-04328-JD (JSC)

DECLARATION OF JANET G. MCCABE

A. General Background

1. I, Janet G. McCabe, declare under penalty of perjury under the laws of the United States of America that the following statements are true and correct to the best of my knowledge and belief and that they are based upon my personal knowledge, or on information contained in the records of the United States Environmental Protection Agency (EPA), or on information supplied to me by EPA employees.

2. I am the Acting Assistant Administrator for the Office of Air and Radiation (OAR) at the EPA, a position I have held since July 19, 2013. I previously served as the Principal Deputy to the Assistant Administrator for this office from November 2009 to July 18, 2013. OAR is the headquarters-based EPA office that administers the Clean Air Act (CAA or the Act) and develops national programs, technical policies and regulations for controlling air

pollution and protecting public health and welfare. OAR is concerned with preventing and responding to air quality issues including industrial air pollution, pollution from vehicles and engines, toxic air pollutants, acid rain, stratospheric ozone depletion and climate change.

3. Prior to joining the EPA, I served as the Executive Director of Improving Kids' Environment, Inc., and as an adjunct faculty member at the Indiana University School of Medicine, Department of Public Health. From 1993 to 2005, I held several leadership positions in the Indiana Department of Environmental Management's Office of Air Quality and was the office's Assistant Commissioner from 1998 to 2005. Before coming to Indiana in 1993, I served as Assistant Attorney General for environmental protection for the Commonwealth of Massachusetts and Assistant Secretary for Environmental Impact Review. I received an undergraduate degree from Harvard College in 1980 and a J.D. from Harvard Law School in 1983.

4. This declaration is filed in support of the EPA's Cross-Motion for Summary Judgment and Opposition to Plaintiff's Motion for Summary Judgment in *Sierra Club v. McCarthy*, Case No. 3:15-cv-04328-JD. Claim two of this case pertains, in part, to the EPA's statutory obligation to promulgate a federal implementation plan (FIP) for the state of Kentucky addressing the interstate transport requirements of section 110(a)(2)(D)(i)(I) of the CAA, 42 U.S.C. 7410(a)(2)(D)(i)(I), for the 2008 ozone national ambient air quality standards (NAAQS) and for which plaintiffs seek a schedule by which the EPA will promulgate such a FIP pursuant to CAA section 110(c)(1), 42 U.S.C. 7410(c)(1).

5. As part of my duties as Acting Assistant Administrator of OAR, I oversee the development and implementation of regulations, policy and guidance under section 110 of the

CAA, 42 U.S.C. 7410, including the interstate transport requirements of section 110(a)(2)(D)(i)(I), 42 U.S.C. 7410(a)(2)(D)(i)(I), that are the subject of this litigation.

6. OAR is responsible for the development and implementation of regulations, policy and guidance associated with state implementation plan (SIP) requirements under the CAA. These SIP requirements include the "infrastructure" SIP revisions required by section 110(a)(1) and (2). In general, the infrastructure SIP submissions address a broad range of statutory requirements relevant to the attainment, maintenance and enforcement of the NAAQS in each state. The applicable elements of section 110(a)(2) address various regulatory concerns, including legal authority and substantive requirements, for a range of issues relevant to the CAA. In particular, section 110(a)(2)(D)(i)(I) (also referred to as the "good neighbor provision") requires each state to address the interstate transport of pollutants in its infrastructure SIP (this subset of the infrastructure SIP is also referred to as the "good neighbor SIP") in order to assist other states in attaining and maintaining the relevant NAAQS. The good neighbor provision specifically requires that state plans "contain adequate provisions . . . prohibiting . . . any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will . . . contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any . . . national ambient air quality standard [NAAQS]." 42 U.S.C. 7410(a)(2)(D)(i)(I).

7. Once a state submits a SIP, including a good neighbor SIP required by section 110(a)(2)(D)(i)(I), the EPA must determine whether the submission meets certain minimum completeness criteria, which are defined pursuant to CAA section 110(k)(1)(A), 42 U.S.C. 7410(k)(1)(A). The statute provides that the EPA shall make such a determination within 60 days of receipt of the plan, but no later than 6 months after the date, if any, by which the state

was required to make the submission per section 110(k)(1)(B), 42 U.S.C. 7410(k)(1)(B). That section further provides that if the Administrator has not determined whether the plan is complete within 6 months after receipt of the submission, the SIP is deemed to be complete by operation of law. Section 110(k)(2) then provides that the EPA has 12 months from the determination of completeness (whether by the EPA or by operation of law) to approve or disapprove, in whole or in part, the state's submission in accordance with section 110(k)(3). 42 U.S.C. 7410(k)(2) and (3).

8. In the event that a state does not submit a required SIP addressing the applicable elements of section 110(a)(2), including the requirements of the good neighbor provision, the EPA publishes in the *Federal Register* a "finding of failure to submit" constituting the EPA's official determination, per section 110(k)(1)(B), that a state has failed to make a required SIP submission.

9. If the EPA disapproves a state's SIP submission or if the EPA issues a finding of failure to submit, the action triggers obligations for the EPA under section 110(c)(1) of the CAA, which requires the EPA to promulgate a FIP within two years, unless the state corrects the deficiency and the EPA approves the plan or plan revision before the EPA promulgates a FIP. 42 U.S.C. 7410(c)(1).

10. As part of my duties as Acting Assistant Administrator of OAR, I am involved in the prioritization and allocation of resources to meet the legal requirements of the CAA as well as the air quality needs of the country. I am familiar with the processes and time periods allotted for the EPA to take regulatory actions under the CAA, including actions concerning the interstate pollution transport requirements pursuant to CAA section 110(a)(2)(D)(i)(I) and the timeframe for promulgating FIPs pursuant to CAA section 110(c)(1). Given the funding and other resource

constraints upon the agency, the EPA is unable to perform all activities that we may have or want to perform, and that we are authorized to perform, at any given time. Meeting all mandatory duties imposed by the CAA with limited resources requires the EPA to make choices in the prioritization and scheduling of projects. In determining the allocation of resources and the prioritization of particular projects, OAR looks at several factors, including: (1) whether or not a project must be completed by a time certain; (2) the environmental and public health impact of proceeding with a particular project compared to other projects; (3) the amount of resources that would be needed to complete a particular project; (4) the other mandatory duties under the CAA that are assigned to a particular office; and (5) the amount of information (including needs for additional information) required in order to appropriately support a project.

11. As described in section B.iii.c below, the EPA recently promulgated a rulemaking that partially addresses the EPA's obligation to promulgate a FIP for the state of Kentucky addressing the interstate transport requirements of the good neighbor provision for the 2008 ozone NAAQS. That partial FIP implements emissions reductions in Kentucky that will improve downwind air quality problems to which Kentucky contributes. However, in order to fully address the EPA's FIP obligation, the EPA needs to conduct a significant amount of technical analysis to quantify any remaining emissions reductions that may be necessary to address the good neighbor provision for Kentucky. Section C of this declaration describes the steps and timeframe necessary to conduct this technical analysis. Once the EPA has completed this technical analysis, we must make appropriate policy decisions, prepare a written rulemaking package, engage in appropriate intra- and inter-agency review of the rulemaking package in order to issue a proposed rulemaking for review and comment by the public. Moreover, the EPA must consider the public comments received on the proposed rulemaking and conduct certain

additional technical analysis before we can issue a final rule. This process is described in more detail in section D below. A Gantt chart laying out the steps required for this action, the timeframes required for each step, and the chronology of these steps is attached to the declaration as Attachment 1.

12. Considering the totality of the steps necessary to evaluate Kentucky's emission reduction obligation pursuant to the good neighbor provision and to complete the administrative process necessary to promulgate a FIP, the EPA anticipates that the most expeditious schedule by which the Administrator can sign a notice of proposed rulemaking to promulgate a FIP for the state of Kentucky fully addressing the interstate transport requirements of the good neighbor provision for the 2008 ozone NAAQS is November 1, 2018, and the Administrator can sign a notice of final action by February 1, 2020.

13. I have relied upon my staff to provide the factual information concerning the regulatory steps and schedule needed for the particular action at issue in the case for which I make this declaration. The declaration's purpose is to:

- Explain the amount of time the EPA would likely need in order to complete necessary technical analyses and to issue *Federal Register* notices to propose and finalize promulgation of a FIP fully addressing the good neighbor provision with respect to the 2008 ozone NAAQS for Kentucky;
- Explain the significant workload of other duties and obligations related to air pollution that the EPA anticipates having to complete in the coming year, including significant actions subject to statutory deadlines; and

- Explain the timeframe in which the EPA believes it would be reasonable to take actions at issue in an expeditious fashion that takes into account competing obligations and provides appropriate opportunities for public input.

B. Background Regarding Federal Rulemakings to Address Interstate Transport

14. Ground-level ozone causes a variety of negative effects on human health, vegetation, and ecosystems. In humans, acute and chronic exposure to ozone is associated with premature mortality and a number of morbidity effects, such as asthma exacerbation. Ozone exposure can also negatively impact ecosystems, for example, by limiting tree growth.

15. Ground-level ozone is not emitted directly into the air, but is a secondary air pollutant created by chemical reactions between oxides of nitrogen (NO_X), carbon monoxide (CO), methane (CH_4), and non-methane volatile organic compounds (VOCs) in the presence of sunlight. Emissions from electric utilities, industrial facilities, motor vehicles, gasoline vapors, and chemical solvents are some of the major anthropogenic sources of ozone precursors. The potential for ground-level ozone formation increases during periods with warmer temperatures and stagnant air masses; therefore ozone levels are generally higher during the summer months.[1] Ground-level ozone concentrations and temperature are highly correlated in the eastern U.S. with observed ozone increases of 2-3 ppb per degree Celsius reported.[2] Increased temperatures may also increase emissions of volatile man-made and biogenic organics and can indirectly increase

[1] Rasmussen, D.J. et. al. (2011), Ground-level ozone-temperature relationships in the eastern US: A monthly climatology for evaluating chemistry-climate models. Atmospheric Environment 47: 142-153.

[2] Bloomer, B. J., J. W. Stehr, C. A. Piety, R. J. Salawitch, and R. R. Dickerson (2009), Observed relationships of ozone air pollution with temperature and emissions, Geophysical Research Letters, 36, L09803.

anthropogenic NO_X emissions as well (e.g., increased electricity generation to power air conditioning).

16. Precursor emissions can be transported downwind directly or, after transformation in the atmosphere, as ozone. Studies have established that ozone formation, atmospheric residence, and transport occur on a regional scale (i.e., hundreds of miles) over much of the eastern United States, with elevated concentrations occurring in rural as well as metropolitan areas. As a result of ozone transport, in any given location, ozone pollution levels are impacted by a combination of local emissions and emissions from upwind sources. The transport of ozone pollution across state borders compounds the difficulty for downwind states in meeting health-based air quality standards (i.e., NAAQS). Numerous observational studies have demonstrated the transport of ozone and its precursors and the impact of upwind emissions on high concentrations of ozone pollution. One study, for example, examined the impacts of statewide emissions of NO_X, SO_2, and VOCs on concentrations of ozone and fine particulate matter in the eastern United States. They found on average 77 percent of each state's ground-level ozone is produced by precursor emissions from upwind states.[3] Another showed the impacts of interstate transport of anthropogenic NO_X and VOC emissions on peak ozone formation in 2007 in the Mid-Atlantic United States. Results suggest reductions in anthropogenic NO_X emissions from electric generating unit (EGU) and non-EGU sources from the Great Lakes region as well as

[3] Bergin, M.S. et. al. (2007), Regional air quality: local and interstate impacts of NOx and SO2 emissions on ozone and fine particulate matter in the eastern United States. Environmental Sci. & Tech. 41: 4677-4689.

northeastern and southeastern United States would be effective for decreasing area-mean peak ozone concentrations in the Mid-Atlantic.[4]

17. In order to address the regional transport of ozone pursuant to the good neighbor provision, the EPA has promulgated four regional rules focusing on the reduction of NO_X emissions from states in the eastern half of the United States.[5] Each of these rulemakings essentially followed the same four steps for quantifying and implementing emission reductions necessary to address the interstate transport requirements of the good neighbor provision: (1) identifying downwind air quality problems relative to the NAAQS; (2) determining which upwind states contribute to these identified downwind air quality problems; (3) for states linked to downwind air quality problems, identifying upwind emissions that significantly contribute to nonattainment or interfere with maintenance of a standard; and (4) for states that are found to have emissions that significantly contribute to nonattainment or interfere with maintenance of the NAAQS downwind, implementing the necessary emission reductions. The EPA's rulemakings to address the interstate transport of ozone have continued to be the subject of significant public interest and garner a substantial number of public comments challenging the EPA's legal, policy, and technical decisions. Each of these rulemakings was subject to litigation, and the resulting court decisions have guided and focused the EPA's approach to addressing the interstate transport of ozone pollution pursuant to CAA section 110(a)(2)(D)(i)(I). While the decisions resulting from the litigation have clarified and validated various aspects of the EPA's approach

[4] Liao, K. et. al. (2013), Impacts of interstate transport of pollutants on high ozone events over the Mid-Atlantic United States. Atmospheric Environment 84, 100-112.

[5] For purposes of these rulemakings, the western United States (or the West) consists of the 11 western contiguous states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. The eastern United States consists of the remaining contiguous states.

to addressing the interstate transport of ozone pollution pursuant to the good neighbor provision, the public has continued to raise challenges to the various and complicated steps of these rulemakings.

i. NO_X SIP Call

18. The first regional rulemaking that the EPA promulgated to address the interstate transport of ozone pollution is referred to as the NO_X SIP Call, which was promulgated in 1998 in order to address the good neighbor provision for the 1979 1-hour ozone NAAQS and the 1997 8-hour ozone NAAQS. 63 Fed. Reg. 57,356 (Oct. 27, 1998). The rule required 22 eastern states and the District of Columbia to amend their SIPs and limit NO_X emissions that contribute to ozone nonattainment. The EPA set a NO_X ozone season emission budget (i.e., limit on statewide allowable emissions) for each covered state, essentially a cap on ozone season NO_X emissions in the states. The covered states were given the option of meeting the budgets by amending their SIPs to require their EGU sources and certain non-EGU sources to participate in a regional allowance trading program known as the NO_X Budget Trading Program (NBP); states were also given the option to develop alternative approaches to meeting the NOx ozone season emissions budgets.

19. In order to calculate the necessary emissions reductions under the good neighbor provision pursuant to these NAAQS, the EPA first evaluated three air quality factors to determine whether each state had emissions whose contributions to downwind nonattainment problems are large and/or frequent enough to be of concern: (1) the overall nature of the ozone problem; (2) the extent of the downwind nonattainment problems to which the upwind state's emissions are linked; and (3) the ambient impact of the emissions from the upwind state's sources on the downwind nonattainment problems.

20. As to the first consideration, the EPA found that "ozone generally results from the collective contribution of emissions from numerous sources over a large geographic area." *Id.* at 57,377. "[F]or urban nonattainment areas under the [1979] 1-hour [ozone] NAAQS, the downwind sources, [sic] comprise numerous stationary sources as well as mobile onroad sources, mobile off-road sources, and consumer and commercial products. Further, additional contributions are made by numerous upwind States, both adjacent to and further away from the nonattainment area itself." *Id.* at 57,377. With respect to the NAAQS being addressed by the NOx SIP Call, the EPA cited multiple modeling studies which indicate that upwind States contribute significantly to those downwind nonattainment problems under both standards:

> In general, under the [1979] 1-hour standard, emissions from each upwind State affect at least several, primarily urban, nonattainment areas downwind. For example, each of the midwest/southern States of Ohio, Kentucky, Tennessee, West Virginia, Virginia, and North Carolina affects between five and eight downwind nonattainment areas. Under the [1997] 8-hour standard, emissions from each upwind State affect nonattainment problems that comprise an even larger geographic area. For example, Ohio, Kentucky, Tennessee, West Virginia, Virginia, and North Carolina each affect between eight to thirteen downwind States with nonattainment problems.

Id. at 57403.

21. The EPA concluded that the regional nature of the ozone transport problem supported the need for a regional analysis in order to evaluate which upwind emissions should be reduced to address downwind air quality. We noted, "[t]he fact that virtually every nonattainment problem is caused by numerous sources over a wide geographic area is a factor suggesting that the solution to the problem is the implementation over a wide area of controls on many sources, each of which may have a small or unmeasurable ambient impact by itself." *Id.* at 57,377.

22. With respect to the second consideration, the extent of the downwind nonattainment problems to which the upwind state's emissions are linked, the EPA first

identified those downwind areas expected to have air quality problems relative to the NAAQS. The EPA explained that we relied on both current monitored data and projections of air quality to a future year to identify these areas because the term "will" in section 110(a)(2)(D)(i)(I) "means that SIPs are required to eliminate the appropriate amounts of emissions that presently, or that are expected in the future to, contribute significantly to nonattainment downwind." *Id.* at 57,375. Thus,

> [i]n determining whether a downwind area has a nonattainment problem under the [1979] 1-hour standard to which an upwind area may be determined to be a significant contributor, EPA determined whether the downwind area currently has a nonattainment problem, and whether that area would continue to have a nonattainment problem as of the year 2007 assuming that in that area, all controls specifically required under the CAA were implemented, and all required or otherwise expected Federal measures were implemented. If, following implementation of such required CAA controls and Federal measures, the downwind area would remain in nonattainment, then EPA considered that area as having a nonattainment problem to which upwind areas may be determined to be significant contributors.

Id. at 57,377. The EPA concluded, "The fact that a nonattainment problem persists, notwithstanding fulfillment of CAA requirements by the downwind sources, is a factor suggesting that it is reasonable for the upwind sources to be part of the solution to the ongoing nonattainment problem." *Id.* The EPA therefore used air quality modeling to identify projected air quality problems in 2007, considering other control requirements that were expected to be implemented by that date and the growth in emissions due to economic growth and the anticipated greater use of vehicles. *Id.* at 57,375. The EPA determined that the contribution of each affected state to a downwind nonattainment problem, in conjunction with the contribution from other upwind States, "comprised a relatively large percentage of the nonattainment problem." *Id.* at 57,377.

23. With respect to the third consideration, the EPA conducted additional air quality modeling to evaluate the ambient impact of emissions from upwind sources. The EPA evaluated

the downwind contribution from emissions in upwind states considering three factors: (a) the magnitude of the contribution; (b) the frequency of the contribution; and (c) the relative amount of the contribution. *Id.* at 57,387. The EPA determined that "the impacts from each affected upwind State's NO_X emissions are sufficiently large and/or frequent so that the amounts of that State's emissions should be considered to be significant contributions, depending on the cost factor and other relevant considerations." *Id.* at 57,377.

24. For those states whose ozone contributions were determined to be large and/or frequent enough to be of concern, the EPA then determined what amount of emissions reductions should be required of sources in each of these states. The EPA quantified emissions reductions for each state based on

> whether any amounts of the NO_X emissions may be eliminated through controls that, on a cost-per-ton basis, may be considered to be highly cost effective. By examining the cost effectiveness of recently promulgated or proposed NO_X controls, EPA determined that an average of approximately $2,000 per ton removed is highly cost effective. The EPA then determined a set of controls on NO_X sources that would cost no more than an average of $2,000 per ton reduced.

Id. at 57,377-78. In order to quantify emissions reductions that would be required of upwind states contributing to multiple downwind air quality problems, the EPA followed a number of steps: (1) the EPA determined the amount of NO_X emissions in each State by the year 2007, based on assumptions concerning both growth and emissions controls that are required under the CAA or that will be implemented due to Federal actions, referred to as the "2007 base case"; (2) the EPA applied the control measures identified as highly cost effective to the 2007 base case amount for the appropriate source categories; (3) the EPA determined each State's 2007 budget as the amount of NO_X emissions remaining in the State after application of controls to the affected source categories. *Id.* at 57,378. The difference between the 2007 base case and the 2007 budget is the amount of NO_X emissions in that State by the year 2007 that the EPA

determined would contribute significantly to nonattainment and that, therefore, the SIPs must prohibit. *Id.* The EPA concluded that "the downwind impact from each individual upwind State's reductions may be relatively small, but the impact from all upwind reductions, collectively, is appreciable." *Id.* at 57,403.

25. The EPA then required states covered by the rule to amend their SIPs in order to limit NO_X emissions that significantly contribute to ozone nonattainment in other states consistent with the budgets finalized in the rule. With respect to the 1979 1-hour ozone NAAQS, the EPA initiated a "SIP call" pursuant to CAA section 110(k)(5) because the EPA had already approved states' infrastructure SIPs with respect to that NAAQS, but now found those previously approved SIPs to be deficient. *Id.* at 57,367. With respect to the 1997 8-hour ozone NAAQS, the EPA required the submission of SIPs pursuant to CAA section 110(a)(1) because the deadline for the submission of good neighbor SIPs for that NAAQS had not yet passed. *Id.* at 56,370. The emissions reductions identified by the EPA as necessary to address states' obligations under section 110(a)(2)(D)(i)(I) were the same with respect to both NAAQS. However, in order to resolve legal uncertainty for the NO_X SIP Call created by a subsequent court decision regarding the 1997 8-hour ozone NAAQS, the EPA later amended the NO_X SIP Call to indefinitely stay the portions of the rule making findings of significant contribution with respect to the 1997 ozone NAAQS. 65 Fed. Reg. 56,245 (Sept. 18, 2000).

26. The NO_X SIP Call was largely upheld by the D.C. Circuit in *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000), *cert. denied*, 532 U.S. 904 (2001). The court addressed a number of issues, among them several that have guided the EPA's further efforts to address the interstate transport of ozone. In particular, the petitioners challenged the EPA's interpretation of the term "significance" in section 110(a)(2)(D)(i)(I) in two pertinent ways. First, the petitioners

challenged the EPA's consideration of the cost of reducing ozone in quantifying those amounts of emissions from upwind states that would constitute "significant" contribution. *See id.* at 674. Second, petitioners challenged the EPA's application of a uniform control strategy to quantify upwind states' emission reduction obligations. *See id.* at 679. The court concluded as to both decisions that "there is nothing in the text, structure, or history of [section] 110(a)(2)(D) that bars EPA from considering cost in its application." *Id.* The court also considered arguments by petitioners that EPA's approach to quantifying emission reductions was not based on any "intelligible principles" and therefore was in violation of the non-delegation doctrine. *See id.* at 680. The court held that the doctrine was not violated because "[b]efore assessing 'significance,' EPA must find (1) emissions activity within a state; (2) show with modeling or other evidence that such emissions are migrating into other states; and (3) show that the emissions are contributing to nonattainment." *Id.*

ii. Clean Air Interstate Rule

27. The Clean Air Interstate Rule (CAIR), promulgated in 2005, addressed both the 1997 PM2.5 and the 1997 ozone standards under the good neighbor provision. 70 Fed. Reg. 25,162 (May 12, 2005). CAIR required SIP revisions in 28 states and the District of Columbia to ensure that certain emissions of sulfur dioxide (SO_2) and/or NO_X – important precursors of regionally transported PM2.5 (SO_2 and NO_X) and ozone (NO_X) – were prohibited.

28. As in the NO_X SIP Call, the EPA used air quality modeling techniques to assess the impact of each upwind State's inventory of NO_X and VOC emissions on downwind ozone nonattainment. The EPA determined that upwind NO_X emissions contribute significantly to 8-hour ozone nonattainment as of the year 2010. Therefore, the EPA projected NO_X emissions to

the year 2010, assuming certain required controls, and then modeled the impact of those projected emissions on downwind 8-hour ozone nonattainment in that year. *Id.* at 25,175.

29. The EPA then identified those states that would be subject to the rule based on the same criteria employed in the NO_X SIP Call. Regarding the contribution to downwind pollution from upwind states, the EPA explained that "[t]ypically, two or more States contribute transported pollution to a single downwind area, so that the 'collective contribution' is much larger than the contribution of any single State." *Id.* at 25,186. The EPA determined that "emissions from an upwind State contribute significantly to nonattainment if the maximum contribution is at least 2 parts per billion, the average contribution is greater than one percent, and certain other numerical criteria are met." *Id.* at 25,175.

30. Finally, the EPA adopted the same approach to quantifying the level of states' significant contribution to downwind nonattainment areas in CAIR as it used in the NO_X SIP Call, based on the determination in the NO_X SIP Call that downwind ozone nonattainment is due to the impact of emissions from numerous upwind sources and states. *See id.* at 25,172. Therefore, in order to apportion emission reduction responsibility among multiple upwind states contributing to an identified downwind nonattainment receptor, the EPA interpreted the statute as requiring emissions reductions in "amounts that would result from application of highly cost-effective controls" in each state significantly contributing to downwind nonattainment. *Id.* at 25,175. The EPA determined that control costs up to $2,000 per ton (1990$) were highly cost-effective for reducing ozone season NO_X emissions, in part because this same level of cost-effective control was also used in the NO_X SIP Call. *Id.* at 25,173. The EPA determined that this level of reductions represented each upwind states' significant contribution to downwind nonattainment under the good neighbor provision. In determining the appropriate level of

controls, the EPA considered feasibility issues including the applicability, performance, and reliability of different types of pollution control technologies for different types of sources, along with other implementation costs for particular groups of sources. *Id.* The EPA determined that, at that time, EGUs were the only source category for which highly cost-effective controls were available. *Id.* at 25,213-15.

31. As under the NO_X SIP Call, to satisfy their SIP obligations states were given the option of requiring their sources to participate in regional allowance trading programs. When the EPA promulgated the final CAIR in May 2005, the EPA also issued a national rule finding that states had failed to submit SIPs to address the requirements of CAA section 110(a)(2)(D)(i) with respect to the 1997 PM2.5 and the 1997 ozone NAAQS. 70 Fed. Reg. 21,147. Those states were required by the CAA to have submitted good neighbor SIPs for those standards by July 2000. *Id.* at 21,148. These findings of failure to submit triggered a 2-year clock for the EPA to issue FIPs to address interstate transport, and the EPA subsequently promulgated FIPs to ensure that the emissions reductions required by CAIR would be achieved on schedule. 71 Fed. Reg. 25,328 (April 28, 2006). The FIPs required EGUs in each covered state to participate in federal allowance trading programs unless and until the state submitted and the EPA approved a SIP revision to achieve the required emission reductions either through comparable state allowance trading programs or in some other way.

32. CAIR was remanded to the EPA by the D.C. Circuit in *North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir. 2008), *modified on reh'g*, 550 F.3d 1176. The court addressed a number of issues, among them several that have guided the EPA's further efforts to address the interstate transport of ozone. In particular, the court held that the implementation of the emissions budgets quantified in CAIR through a trading program that permitted the unrestricted use for compliance

of surplus allowances obtained from sources in other states did not achieve "something measurable toward the goal of prohibiting the sources 'within the State' from contributing to nonattainment or interfering with maintenance 'in any other State'." 531 F.3d at 908. The court also held that, because CAIR was designed as a complete remedy for the good neighbor requirements, it "must actually require elimination of emissions from sources that contribute significantly and interfere with maintenance in downwind areas." *Id.* The court further held that the EPA erred by regulating only those upwind states tied to downwind nonattainment problems, holding that the EPA must give "independent effect" to the interfere with maintenance clause of CAA section 110(a)(2)(D)(i)(I) by identifying downwind areas that might struggle to maintain the NAAQS independent of whether the area is or ever was in nonattainment. *Id.* at 910-11. Finally, the court evaluated the EPA's interpretation of the requirement in section 110(a)(2)(D)(i)(I) that states prohibit emissions in amounts that "will" significantly contribute to nonattainment or interfere with maintenance of the NAAQS. The court determined that the EPA's approach to defining nonattainment relative to both present-day violations and projected future nonattainment was a reasonable interpretation of the statute. *Id.* at 913-914. While the court instructed the EPA to replace CAIR "from the ground up," *Id.* at 929, the EPA was permitted to continue implementing CAIR during the development of its replacement.

iii. Cross-State Air Pollution Rule

33. In 2011, the EPA promulgated the Cross-State Air Pollution Rule (CSAPR) to address the issues raised by the remand of CAIR, to replace CAIR with respect to the 1997 ozone NAAQS and 1997 PM2.5 NAAQS, and additionally to address the good neighbor provision for the 2006 PM2.5 NAAQS. 76 Fed. Reg. 48,208, 48,217 (Aug. 8, 2011). CSAPR, which replaces CAIR entirely, requires 28 states to reduce SO_2 emissions, annual NO_X emissions, and/or ozone

season NO_X emissions that significantly contribute to other states' nonattainment or interfere with other states' abilities to maintain these air quality standards.

34. CSAPR used a four-step framework to address the good neighbor provision as to the 2008 ozone NAAQS, an approach that reflects the evolution of the EPA's approach to address regional interstate ozone transport since the NO_X SIP Call and CAIR. The four steps of the CSAPR framework are: (1) identifying downwind receptors that are expected to have problems attaining or maintaining clean air standards (i.e., NAAQS); (2) determining which upwind states contribute to these identified problems in amounts sufficient to "link" them to the downwind air quality problems; (3) for states linked to downwind air quality problems, identifying upwind emissions that significantly contribute to nonattainment or interfere with maintenance of a standard; and (4) for states that are found to have emissions that significantly contribute to nonattainment or interfere with maintenance of the NAAQS downwind, implementing reductions through regional emission allowance trading programs.

35. As in the NO_X SIP Call and CAIR, in step 1 of the CSAPR framework, the EPA identified downwind areas with air quality problems based on air quality modeling projections to a future compliance year, in this case 2012. *See id.* at 48,229. The modeling was used to identify not only those areas projected to be in nonattainment with one of the three NAAQS addressed by the rule, but also to identify those areas that may, despite projected attainment, struggle to maintain the NAAQS, in response to the court's holding in *North Carolina*, 531 F.3d at 910-11 (holding that the EPA must give "independent effect" to the interfere with maintenance clause of the good neighbor provision).

36. Citing to prior determinations made in the NO_X SIP Call and CAIR, the EPA continued to find that multiple upwind states contributed to downwind ozone nonattainment.

Specifically, the EPA found "that the total 'collective contribution' from upwind sources represents a large portion of PM2.5 and ozone at downwind locations and that the total amount of transport is composed of the individual contribution from numerous upwind states." *Id.* at 48,237. Accordingly, in step 2 of the CSAPR framework, the EPA identified upwind states as "linked" to downwind receptors as those states that were modeled to contribute at or above a threshold equivalent to one percent of the applicable NAAQS. *Id.* at 48,236. Upwind states linked to one of these downwind nonattainment or maintenance areas were then evaluated to determine what level of emissions reductions should be required of each state. *Id.*

37. In order to apportion emissions reduction responsibility among multiple upwind states contributing to an identified downwind nonattainment or maintenance problem in step 3 of the CSAPR framework, the EPA used cost- and air-quality-based criteria to quantify the amount of emissions that represent a linked state's significant contribution to nonattainment and inference with maintenance in another state. *Id.* at 48,246. The EPA refined its approach for quantifying state emissions reductions used in the NO_X SIP Call and CAIR, considering both cost and air quality improvements to identify the portion of a state's contribution to a downwind air quality problem that constitutes its significant contribution to nonattainment and interference with maintenance of the NAAQS. *Id.* at 48,248. These refinements were intended to be responsive to both the *Michigan* and *North Carolina* decisions regarding the Agency's use of cost to apportion upwind state emission reduction responsibility. *Id.*

38. The EPA explained that "using both air quality and cost factors allows EPA to consider the full range of circumstances and state-specific factors that affect the relationship between upwind emissions and downwind nonattainment and maintenance problems." *Id.* The EPA continued, "considering cost takes into account the extent to which existing [power] plants

are already controlled as well as the potential for, and relative difficulty of, additional emission reductions." *Id.* "The methodology defines each state's significant contribution to nonattainment and interference with maintenance as the emissions reductions available at a particular cost threshold in a specific upwind state which effectively address nonattainment and maintenance of the relevant NAAQS in the linked downwind state of concern." *Id.*

39. The methodology, which the EPA refers to as its multi-factor test for quantifying significant contribution to nonattainment and interference with maintenance, includes the following: identification of available NOx control strategies and the associated costs of such controls; identification of upwind "cost thresholds" representing uniform levels of NO_X control stringency; identification of each state's emission reduction potential available at these cost thresholds; quantification of state emissions budgets (i.e., remaining emissions) reflecting the upwind emissions reductions previously assessed at each cost threshold; assessment of the impact of upwind emissions reductions on downwind air quality at each cost threshold; selection of the level of emissions limits (i.e., emissions budgets) that deliver cost-effective emissions reductions and downwind air quality improvement without over-controlling.

40. The EPA determined that cost-effective emissions reductions were available from EGUs, and that there were few or no reductions available from non-EGUs at costs below the thresholds the EPA identified in the final rulemaking. *Id.* at 48,249. Specifically, with respect to ozone season NO_X, CSAPR finalized EGU ozone season NO_X budgets using uniform cost of $500 per ton (2007$). *Id.* at 48,256-57. Accordingly, the EPA quantified state emissions budgets for certain EGUs in each state and, to accomplish implementation aligned with the applicable attainment deadlines in step 4 of the CSAPR framework, the EPA promulgated FIPs for each of the 28 states covered by CSAPR which require affected EGUs to participate in

regional allowance trading programs to achieve the necessary emissions reductions. *Id.* at 48,210-11.

41. CSAPR was subject to nearly four years of litigation in the D.C. Circuit and the Supreme Court, which resulted in long periods of significant uncertainty regarding the EPA's authority and obligations pursuant to the good neighbor provision during the litigation. On December 30, 2011, the D.C. Circuit granted a number of motions from state and industry petitioners to stay the implementation of the CSAPR allowance trading programs pending further litigation, days before the first compliance period was scheduled to begin. *EME Homer City Generation, L.P. v. EPA*, No. 11-1302 (D.C. Cir. Dec. 30, 2011), ECF No. 1350421. Subsequently, on August 21, 2012, the D.C. Circuit issued a decision in *EME Homer City Generation, L.P. v. EPA*, 696 F.3d 7 (D.C. Cir. 2012) (*EME Homer City I*), vacating CSAPR based on two holdings. First, the court held that states had no obligation to submit good neighbor SIPs until the EPA had first quantified each state's good neighbor obligation. *Id.* The implication of this decision was that the EPA did not have authority to promulgate the CSAPR FIPs as a result of states' failure to submit or the EPA's disapproval of good neighbor SIPs. The D.C. Circuit also held that the EPA erred in apportioning upwind emission reduction obligations using uniform cost thresholds, and that such an approach may result in unnecessary over-control of upwind state emissions. The EPA sought review, first with the D.C. Circuit *en banc* and then with the Supreme Court. While the D.C. Circuit declined to consider the EPA's appeal *en banc*, *EME Homer City Generation, L.P. v. EPA*, No. 11-1302 (D.C. Cir. Jan. 24, 2013), ECF No. 1417012, on January 23, 2013, the Supreme Court granted the EPA's petition for certiorari, *EPA v. EME Homer City Generation, L.P.*, 133 S. Ct. 2857 (2013).

42. On April 29, 2014, the Supreme Court issued a decision reversing the D.C. Circuit's *EME Homer City I* opinion on CSAPR. *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584 (2014). The Court held that under the plain language of the CAA, states must submit SIPs addressing the good neighbor provision within three years of promulgation of a new or revised NAAQS, regardless of whether the EPA first provides guidance, technical data or rulemaking to quantify the state's obligation. *Id.* at 1600-01. The Court also reversed the D.C. Circuit's holding that the EPA's use of cost to apportion upwind states' emission reduction obligations was impermissible, finding that the EPA's approach was a "permissible construction of the statute." *Id.* at 1606-07. The Court explained that "EPA must decide how to differentiate among otherwise like contributions of multiple upwind states," and that the EPA's approach to apportion such responsibility based on those emissions that can be reduced at a uniform cost-threshold "is an efficient and equitable solution to the allocation problem the Good Neighbor Provision requires the Agency to address." *Id.* at 1607.

43. The Supreme Court agreed with the D.C. Circuit to the extent the court held that "EPA cannot require a State to reduce its output of pollution by more than is necessary to achieve attainment in every downwind State or at odds with the one-percent threshold the Agency has set." *Id.* at 1608. The Court acknowledged that

> instances of "over-control" in particular downwind locations . . . may be incidental to reductions necessary to ensure attainment elsewhere. Because individual upwind States often "contribute significantly" to nonattainment in multiple downwind locations, the emissions reductions required to bring one linked downwind State into attainment may well be large enough to push other linked downwind States over the attainment line. As the Good Neighbor Provision seeks attainment in *every* downwind State, however, exceeding attainment in one State cannot rank as "over-control" unless unnecessary to achieving attainment in *any* downwind State. Only reductions unnecessary to downwind attainment *anywhere* fall outside the Agency's statutory authority.

Id. at 1608-09 (footnotes excluded). The Court further explained that "while EPA has a statutory duty to avoid over-control, the Agency also has a statutory obligation to avoid 'under-control,' *i.e.*, to maximize achievement of attainment downwind." *Id.* at 1609. The Supreme Court remanded the litigation to the D.C. Circuit for further proceedings.

44. Following the Supreme Court's remand, on October 23, 2014, the D.C. Circuit granted the EPA's request to lift the stay of implementation and toll the CSAPR implementation deadlines by three years. *EME Homer City Generation, L.P. v. EPA*, No. 11-1302 (D.C. Cir. Oct. 23, 2014), ECF No 1518738. Accordingly, implementation of CSAPR formally began in January 2015. *See* 79 Fed. Reg. 71,663 (Dec. 3, 2014).

45. On July 28, 2015, the D.C. Circuit issued its opinion on CSAPR regarding the remaining legal issues raised by the petitioners on remand from the Supreme Court, *EME Homer City Generation, L.P. v. EPA*, 795 F.3d 118 (*EME Homer City II*). This decision largely upheld the EPA's approach to addressing interstate transport in CSAPR, leaving the rule in place and affirming the EPA's interpretation of various statutory provisions and the EPA's technical decisions. However, the decision also remanded the rule without vacatur for reconsideration of the CSAPR emission budgets for certain states, finding that those budgets over-control or may over-control upwind state emissions in violation of the Supreme Court's holding. In particular, the court declared invalid the CSAPR NO_X ozone season emission budgets of 11 states, holding that those budgets over-control with respect to the downwind air quality problems to which those states were linked for the 1997 ozone NAAQS. *Id.* at 130. The court also remanded without vacatur the CSAPR SO_2 annual emission budgets for four states (Alabama, Georgia, South Carolina, and Texas) for reconsideration, holding that those budgets may over-control with respect to the downwind air quality problems to which those states were linked for the PM2.5

NAAQS. *Id.* at 129, 138. The court instructed the EPA to act "promptly" in addressing these issues on remand. *Id.* at 132.[6]

iv. The 2008 Ozone NAAQS Good Neighbor Obligation and the CSAPR Update

a. The 2008 Ozone NAAQS

46. On March 12, 2008, the EPA promulgated a revision to the NAAQS, lowering both the primary and secondary standards for ozone to 75 ppb. *See* National Ambient Air Quality Standards for Ozone, Final Rule, 73 Fed. Reg. 16,436 (March 27, 2008). These revisions of the NAAQS, in turn, triggered a 3-year deadline of March 12, 2011, for states to submit SIP revisions addressing infrastructure requirements under CAA sections 110(a)(1) and 110(a)(2), including the good neighbor provision. During this 3-year SIP development period, on September 16, 2009, the EPA announced[7] that we would reconsider the 2008 ozone NAAQS. To reduce the workload for states during the interim period of reconsideration, the EPA also announced its intention to propose staying implementation of the 2008 standards. On January 6, 2010, the EPA proposed to revise the 2008 NAAQS for ozone from 75 ppb to a level within the range of 60 to 70 ppb. *See* National Ambient Air Quality Standards for Ozone, 75 Fed. Reg. 2,938 (Jan. 19, 2010). The EPA indicated its intent to issue final standards based upon the reconsideration by summer 2011.

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[6] In 2011, the EPA finalized a supplemental rule that added five states to the CSAPR NO_X ozone season allowance trading program. 76 Fed. Reg. 80,760 (Dec. 27, 2011). In 2012, the EPA also finalized two rules making certain revisions to CSAPR. 77 Fed. Reg. 10,324 (Feb. 21, 2012); 77 Fed. Reg. 34,830 (June 12, 2012). Various petitioners filed legal challenges to these rules in the D.C. Circuit. *See Public Service Company of Oklahoma v. EPA*, No. 12–1023 (D.C. Cir., filed Jan. 13, 2012); *Wisconsin Public Service Corp. v. EPA*, No. 12–1163 (D.C. Cir., filed Apr. 6, 2012); *Utility Air Regulatory Group v. EPA*, No. 12–1346 (D.C. Cir., filed Aug. 9, 2012). These cases were held in abeyance during the pendency of the litigation in *EME Homer City*, and remain pending in the D.C. Circuit as of the date of signature of this rule.

[7] Fact Sheet. The EPA to reconsider Ozone Pollution Standards, available at http://www.epa.gov/groundlevelozone/pdfs/O3_Reconsideration_FACT%20SHEET_091609.pdf

47. As described above at paragraph 33, on August 8, 2011, the EPA published the original CSAPR rulemaking, in response to the D.C. Circuit's remand of the EPA's prior federal transport rule, CAIR. *See* 76 Fed. Reg. 48,208. The original CSAPR addressed ozone transport under the 1997 ozone NAAQS, but did not address the 2008 ozone standard, because the 2008 ozone NAAQS was under reconsideration when CSAPR was finalized.

48. On September 2, 2011, consistent with the direction of the President, the Administrator of the Office of Information and Regulatory Affairs of the Office of Management and Budget returned the draft final 2008 ozone rule the EPA had developed upon reconsideration to the agency for further consideration.[8] In view of that action and the timing of the agency's ongoing periodic review of the ozone NAAQS required under CAA section 109 (as announced on September 29, 2008), the EPA decided to coordinate further proceedings on its voluntary reconsideration of the 2008 ozone standards with its ongoing periodic review of the ozone NAAQS. Implementation efforts for the original 2008 ozone standards were renewed.

49. As described in paragraphs 41-45, a number of legal developments pertaining to the EPA's promulgation of the original CSAPR rulemaking also created uncertainty surrounding the EPA's statutory interpretation and implementation of the good neighbor provision as it applied to the 2008 ozone NAAQS. On August 21, 2012, the D.C. Circuit issued a decision in *EME Homer City I* addressing several legal challenges to CSAPR and holding, among other things, that states had no obligation to submit good neighbor SIPs until the EPA had first quantified each state's good neighbor obligation. 696 F.3d at 31. According to that decision, the submission deadline for good neighbor SIPs under the CAA would not necessarily be tied to the

[8] *See* Letter from Cass R. Sunstein, Administrator, Office of Information and Regulatory Affairs, to Lisa Jackson, Administrator, U.S. Environmental Protection Agency (Sept. 2, 2011), available at http://www.reginfo.gov/public/return/EPA_Return_Letter_9-2-2011.pdf.

promulgation of a new or revised NAAQS. While the EPA disagreed with this interpretation of the statute and sought review of the decision in the D.C. Circuit and the Supreme Court, the EPA complied with the D.C. Circuit's ruling during the pendency of its appeal. In particular, the EPA indicated that, consistent with the D.C. Circuit's opinion, we would not at that time issue findings that states had failed to submit good neighbor SIPs for the 2008 ozone NAAQS.[9] On April 29, 2014, the Supreme Court reversed the D.C. Circuit's *EME Homer City I* opinion on CSAPR and held, among other things, that under the plain language of the CAA, states must submit SIPs addressing the good neighbor provision within 3 years of promulgation of a new or revised NAAQS, regardless of whether the EPA first provides guidance, technical data, or rulemaking to quantify the state's obligation. *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. at 1600-01. Thus, the Supreme Court affirmed that states have an obligation in the first instance to address the good neighbor provision after promulgation of a new or revised NAAQS, a holding that also applies to the states' obligation to address transport for the 2008 ozone NAAQS. This decision confirmed that states were therefore required to submit SIPs addressing the good neighbor provision with respect to the 2008 ozone NAAQS by March 12, 2011, but the uncertainty engendered by that litigation constrained the EPA's and states' ability to address the good neighbor provision as to that NAAQS before the Supreme Court's decision was issued.

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[9] *See, e.g.*, Memorandum from the Office of Air and Radiation former Assistant Administrator Gina McCarthy to the Air Division Directors, Regions 1-10, "Next Steps for Pending Redesignation Requests and State Implementation Plan Actions Affected by the Recent Court Decision Vacating the 2011 Cross-State Air Pollution Rule" (Nov. 19, 2012), available at https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/20121119_mccarthy_redesig_sips_csapr_vacature.pdf; 78 Fed. Reg. 65,559 (Nov. 1, 2013) (final action on Florida infrastructure SIP submission for 2008 8-hour ozone NAAQS); 78 Fed. Reg. 14,450 (Mar. 6, 2013) (final action on Tennessee infrastructure SIP submissions for 2008 8-hour ozone NAAQS); Final Rule, Findings of Failure To Submit a Complete State Implementation Plan for section 110(a) Pertaining to the 2008 Ozone National Ambient Air Quality Standard, 78 Fed. Reg. 2,884 (Jan. 15, 2013).

b. The EPA's FIP Obligation with Respect to the Good Neighbor Provision and the 2008 Ozone NAAQS

50. On September 8, 2009, the State of Kentucky submitted a SIP purporting to address infrastructure SIP requirements of CAA section 110(a)(2) for the 2008 ozone NAAQS. On July 17, 2012, Kentucky withdrew its September 8, 2009 SIP submission and concurrently provided a new submission addressing the infrastructure SIP requirements for the 2008 ozone NAAQS, including the good neighbor provision.

51. On March 7, 2013, the EPA finalized action on the State of Kentucky's SIP submission addressing, among other things, the good neighbor provision requirements for the 2008 ozone NAAQS. 78 Fed. Reg. 14,681 (March 7, 2013). The EPA disapproved the submission as to the good neighbor requirements. In the notice, the EPA explained that the disapproval of the good neighbor portion of the state's infrastructure SIP submission did not trigger a mandatory duty for the EPA to promulgate a FIP to address these requirements. *Id.* at 14,683. Citing the D.C. Circuit's decision *EME Homer City I*, the EPA explained that the court concluded states have no obligation to make a SIP submission to address the good neighbor provision for a new or revised NAAQS until the EPA first defines a state's obligations pursuant to that section. *Id.* Therefore, because a good neighbor SIP addressing the 2008 ozone standard was not at that time required, the EPA indicated that its disapproval action would not trigger an obligation for the EPA to promulgate a FIP to address the interstate transport requirements. *Id.*

52. On April 30, 2013, Sierra Club filed a petition for review of the EPA's final action in the United States Court of Appeals for the Sixth Circuit based on the agency's conclusion that the FIP obligation was not triggered by the disapproval of Kentucky's good neighbor SIP. *Sierra Club v. EPA*, Case No. 13-3546 (6th Cir., filed Apr. 30, 2013). Subsequently, on April 29, 2014, the Supreme Court issued a decision reversing and vacating the

D.C. Circuit's decision in *EME Homer City I*. Following the Supreme Court decision, the EPA requested, and the Sixth Circuit granted, vacatur and remand of the portion of the EPA's final action on Kentucky's good neighbor SIP that determined that the FIP obligation was not triggered by the disapproval. *See* Order, *Sierra Club v. EPA*, Case No. 13-3546 (Mar. 13, 2015), ECF No. 74-1.

53. On October 24, 2016, the EPA issued a final action correcting the portion of the Kentucky disapproval notice indicating that the FIP obligation would not be triggered by the SIP disapproval, but rather on the date of the judgment issued in *EPA v. EME Homer City Generation*, or on June 2, 2014. 81 Fed. Reg. 74,504, 74,513. The EPA explained that we do not believe that the FIP obligation was triggered as of the date of the SIP disapproval because the controlling law as of that date was the D.C. Circuit decision in *EME Homer City I*, which held that states had no obligation to submit a SIP and the EPA had no authority to issue a FIP until the EPA first quantified each state's emission reduction obligation under the good neighbor provision. Rather, the EPA concluded that the FIP obligation was triggered when the Supreme Court clarified the state and federal obligations with respect to the good neighbor provision. Thus, the EPA finalized its determination that the FIP obligation was triggered as of June 2, 2014, and that the EPA was obligated to promulgate a FIP that corrects the deficiency by June 2, 2016. *Id.*[10]

54. Subsequent to the disapproval of the Kentucky SIP, on July 13, 2015, the EPA published a rule finding that 24 additional states failed to make complete submissions that

[10] Plaintiff Sierra Club's contention that the EPA could have promulgated a FIP for Kentucky on March 12, 2011, Pl.'s Br. at 4, ignores the requirements of CAA section 110(c)(1) that the EPA must take a prerequisite action to determine that the state has failed to submit a SIP addressing the statutory requirements before we have the authority to promulgate a FIP.

address the requirements of section 110(a)(2)(D)(i)(I) related to the interstate transport of pollution as to the 2008 ozone NAAQS. *See* 80 Fed. Reg. 39,961 (July 13, 2015) (effective Aug. 12, 2015). The finding action triggered a 2-year deadline for the EPA to issue FIPs to address the good neighbor provision for these states by August 12, 2017. The states included in this finding of failure to submit are: Alabama, Arkansas, California, Florida, Georgia, Illinois, Iowa, Kansas, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Mexico, North Carolina, Oklahoma, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, and West Virginia.

55. The EPA issued separate notices finding that Maryland and New Jersey failed to make complete submissions that address the requirements of section 110(a)(2)(D)(i)(I) related to the interstate transport of pollution as to the 2008 ozone NAAQS. *See* 81 Fed. Reg. 47,040 (July 20, 2016) (Maryland, effective Aug. 19, 2016); 81 Fed. Reg. 38,963 (June 15, 2016) (New Jersey, effective July 15, 2016). The finding actions triggered a 2-year deadline for the EPA to issue FIPs to address the good neighbor provision for Maryland by August 19, 2018 and New Jersey by July 15, 2018.

56. The EPA has also finalized disapprovals or partial disapprovals of the good neighbor SIPs from Indiana, Louisiana, New York, Ohio, Texas, Utah, and Wisconsin, triggering the EPA's authority and obligation to promulgate FIPs that implement the requirements of the good neighbor provision for those states. The deadlines for the EPA to issue FIPs to address the good neighbor provision for these states are two years from the effective dates of the individual notices disapproving the states' SIPs: July 15, 2018 (Indiana, Ohio, and New Jersey); September 12, 2018 (Louisiana, Texas, and Wisconsin); September 26, 2018 (New York); and November

18, 2018 (Utah).[11] The EPA has also proposed to partially disapprove the good neighbor SIP for the State of Wyoming with respect to the 2008 ozone NAAQS. 81 Fed. Reg. 81,712 (Nov. 18, 2016).

c. The CSAPR Update

57. On October 26, 2016, the EPA published an update to CSAPR intended to respond to the D.C. Circuit's remand of the NO_X ozone season emission budgets and to address the good neighbor provision for the 2008 ozone NAAQS, referred to as the CSAPR Update. *See* Cross-State Air Pollution Rule Update for the 2008 ozone NAAQS, 81 Fed. Reg. 74,504.[12] The CSAPR Update requires EGUs in 22 states, including Kentucky, to reduce ozone season NO_X emissions that significantly contribute to other states' nonattainment or interfere with other states' abilities to maintain the 2008 ozone NAAQS.

58. The CSAPR Update used the same four-step framework as the original CSAPR rulemaking to address the good neighbor provision as to the 2008 ozone NAAQS: (1) identifying downwind receptors that are expected to have problems attaining or maintaining clean air standards (i.e., NAAQS); (2) determining which upwind states contribute to these identified problems in amounts sufficient to "link" them to the downwind air quality problems; (3) for states linked to downwind air quality problems, identifying upwind emissions that significantly contribute to nonattainment or interfere with maintenance of a standard; and (4) for states that

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[11] The EPA also approved SIPs addressing the good neighbor provision with respect to the 2008 ozone NAAQS for 14 states: Alaska, Arizona, Colorado, Idaho, Maine, Montana, Nebraska, New Hampshire, North Dakota, Oregon, Rhode Island, South Dakota, Vermont, and Washington.

[12] The CSAPR Update also addressed remaining FIP obligations as to the 1997 ozone NAAQS. 81 Fed. Reg. at 74,525-26. It is worth noting that while Plaintiff Sierra Club cites this as an example of "extreme delay," Pl.'s Br. at 24, the EPA had issued three prior rulemakings intended to address the good neighbor provision as to this standard, including the NO_X SIP Call, CAIR, and CSAPR.

are found to have emissions that significantly contribute to nonattainment or interfere with maintenance of the NAAQS downwind, implementing reductions through regional emission allowance trading programs. *Id.* at 74,517.

59. The four-steps of the CSAPR framework were developed considering the various aspects of the regional, interconnected nature of interstate ozone transport. Steps 1 and 2 identify the extent of the regional interstate ozone transport problem. Step 3 identifies the appropriate regional level or levels of uniform emission reduction stringency (represented by cost) that upwind states should collectively make in order to address interstate pollution transport. And step 4 ensures that these reductions are implemented across the region.

60. To evaluate the scope of the interstate ozone transport problem, CSAPR step 1 identifies downwind areas that are expected to have problems attaining and maintaining the ozone NAAQS using modeling that projected air quality to a future compliance year. *Id.* The EPA aligned the analysis and implementation of the CSAPR Update with the 2017 ozone season (May 1 – September 30) in order to assist downwind states with timely attainment of the 2008 ozone NAAQS. *Id.* at 74,516. The EPA's final 2008 Ozone NAAQS SIP Requirements Rule, 80 Fed. Reg. 12,264, 12,268 (Mar. 6, 2015), revised the attainment deadline for ozone nonattainment areas currently designated as Moderate to July 20, 2018. *See* 40 CFR 51.1103. In order to demonstrate attainment by this deadline, states will need to rely on design values calculated using ozone season data from 2015 through 2017, since the July 20, 2018 deadline does not afford enough time for measured data of the full 2018 ozone season. [13]

[13] The EPA released a memorandum in January 2015 with air quality modeling conducted for a 2018 analytic year intended to assist states with developing SIPs to address the good neighbor provision with respect to the 2008 ozone NAAQS. *See* Memorandum from Steve Page, Director of Office of Air Quality Planning and Standards, to Regional Air Division Directors, Regions 1-

61. CSAPR step 2 identifies upwind states that collectively contribute to these identified downwind areas. In the CSAPR Update, the EPA used a screening threshold of one percent of the NAAQS to identify states that are "linked" to downwind ozone problems sufficient for further evaluation for significant contribution to nonattainment or interference with maintenance of the NAAQS under the good neighbor provision. *Id.* at 74,518. This same threshold for analysis was used in the original CSAPR as to the 1997 ozone NAAQS. The EPA found this threshold to be reasonable because the agency determined that much of the ozone nonattainment problem in the eastern half of the United States results from collective impacts of relatively small contributions from a number of upwind states. *Id.* As discussed at paragraphs 20, 29, and 36, the EPA has consistently determined in past analyses conducted for the NO_X SIP Call, CAIR, and CSAPR that ozone nonattainment problems generally result from relatively small contributions from many upwind states, along with contributions from in-state sources and in some cases, substantially larger contributions from a subset of particular upwind states. *Id.* Thus, to address this collective air pollution problem, the EPA has consistently found it to be appropriate to use a low air quality threshold when analyzing states' collective contributions to downwind nonattainment and maintenance for ozone. *Id.*

62. CSAPR step 3 quantifies emission budgets to reduce interstate ozone pollution transport. The CSAPR Update emission budgets limit allowable emissions and represent the

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10, "Information on Interstate Transport 'Good Neighbor' Provision for the 2008 Ozone National Ambient Air Quality Standards (NAAQS) Under Clean Air Act (CAA) Section 110(a)(2)(D)(i)(I)" (Jan. 22, 2015), available at https://www.epa.gov/sites/production/files/2015-11/documents/goodneighborprovision2008naaqs.pdf. Subsequent to the release of this memo, the EPA issued the 2008 Ozone SIP Requirements Rule revising the original December 2018 attainment date to July 2018 in response to a court decision. This revision required the EPA to revise the selected future analytic year for purposes of evaluating interstate ozone transport with respect to the 2008 ozone NAAQS.

emission levels that remain after each state makes EGU NO_X emission reductions that are necessary to reduce interstate ozone transport for the 2008 NAAQS. The EPA's assessment of upwind state emission budgets reflects analysis of uniform NO_X emission control stringency. Each level of uniform NO_X control stringency represents an estimated incremental cost per ton of NO_X reduced and is characterized by a set of pollution control measures. *Id.* at 74,519.

63. As noted at paragraph 60, the EPA aligned implementation of the CSAPR Update with the 2017 ozone season in order to assist downwind states with the July 20, 2018 attainment date. Therefore, consistent with the court's instruction in *North Carolina*, 531 F.3d at 911-12, the EPA identified achievable upwind emissions reductions and aligned implementation of these reductions, to the extent possible, for the 2017 ozone season. These 2017 reductions can positively influence air quality that would be used to demonstrate attainment. To the extent that ozone improvements in 2017 yield clean data for that year, states can request a 1-year attainment date extension under CAA section 181(a)(5), as interpreted in 40 CFR 51.1107.

64. Given the unique circumstances surrounding the implementation of the 2008 ozone standard that delayed efforts by states and the EPA to address interstate transport with respect to that standard, described above, the EPA had limited time in which to finalize a rulemaking that would achieve emission reductions by the 2017 ozone season in time to assist downwind states with demonstrating attainment by the July 2018 attainment date. *Id.* at 74,516. Accordingly, the EPA decided to focus its efforts in the CSAPR Update rulemaking on the immediately available and cost-effective emission reductions that are achievable in that timeframe.

65. The EPA applied a multi-factor test, the same multi-factor test that was used in the original CSAPR, to evaluate increasing levels of uniform NO_X control stringency. The multi-

factor test considers cost, available emission reductions, and downwind air quality impacts to determine the appropriate level of uniform NO_X control stringency that addresses the impacts of interstate transport on downwind nonattainment or maintenance receptors. *Id.* at 74,519. The uniform NO_X emission control stringency, represented by incremental cost, also serves to apportion the reduction responsibility for downwind air quality problems among collectively-contributing upwind states. This approach to quantifying upwind state emission reduction obligations using uniform cost was reviewed by the Supreme Court in *EPA v. EME Homer City Generation*, which held that using such an approach to apportion emission reduction responsibilities among upwind states that are collectively responsible for downwind air quality impacts "is an efficient and equitable solution to the allocation problem the Good Neighbor Provision requires the Agency to address." 134 S. Ct. at 1607.

66. To accomplish implementation aligned with the applicable NAAQS attainment deadline, the EPA promulgated FIPs for each of the 22 states covered by the CSAPR Update which require affected sources to participate in a regional allowance trading program to achieve the necessary emission reductions by 2017. *Id.* at 74,516.

67. While these reductions are necessary to assist downwind states in attaining and maintaining the 2008 ozone NAAQS, and are necessary to address good neighbor obligations for these states, the EPA acknowledges that they may not be sufficient to fully address these states' good neighbor obligations. *Id.* at 74,521. With respect to the 2008 ozone standard, the EPA has not attempted to quantify the ozone season NO_X reductions that may be necessary to eliminate all significant contribution to nonattainment or interference with maintenance in other states. Given the time constraints for implementing NO_X reduction strategies, the EPA believed that implementation of a full remedy that included emission reductions from EGUs as well as other

sectors was not achievable for 2017. However, a partial remedy was achievable for 2017 and therefore the CSAPR Update focused on these more immediately available reductions.

68. As the EPA explained in the CSAPR Update, it was not feasible for the EPA to complete the analysis necessary to evaluate full elimination of each state's significant contribution to nonattainment or interference with maintenance in that rulemaking and also ensure that emissions reductions would be achieved by 2017. 81 Fed. Reg. at 74,522. In order to evaluate states' full good neighbor obligation, we must consider both non-EGU ozone season NO_X reductions and further EGU reductions that are achievable after 2017. *Id.* at 74,521. The EPA did not quantify non-EGU stationary source emissions reductions to address interstate ozone transport for the 2008 ozone NAAQS in the CSAPR Update for two reasons. First, the EPA explained that there was greater uncertainty in the EPA's assessment of non-EGU NOx mitigation potential, and that more time would be required for states and the EPA to improve non-EGU point source data and pollution control assumptions before we could develop emission reduction obligations based on that data. *Id.* at 74542. Second, the EPA explained that we did not believe that significant, certain, and meaningful non-EGU NOX reduction is in fact feasible for the 2017 ozone season. *Id.* Commenters generally agreed with the EPA that non-EGU emission reductions were not readily available for the 2017 ozone season but advocated that such reductions should be included as appropriate in future mitigation actions. *Id.*at 74,521-22.

69. Because the reductions required by the CSAPR Update are EGU-only and because the EPA focused the policy analysis for the CSAPR Update on reductions available by the beginning of the 2017 ozone season, the EPA determined that, for most states including Kentucky, the CSAPR Update reductions represent a first, partial step to addressing a given upwind state's significant contribution to downwind air quality impacts for the 2008 ozone

NAAQS. *Id.* at 74,521. Generally, a final determination of whether the EGU NO_X reductions quantified in the CSAPR Update represent a full or partial elimination of a state's good neighbor obligation for the 2008 NAAQS is subject to an evaluation of the contribution to interstate transport from non-EGUs and further EGU reductions that are achievable after 2017. However, the EPA explained that it was beneficial to implement, without further delay, EGU NO_X reductions that were achievable in the near term as quantified in the CSAPR Update. The NO_X emission reductions in the CSAPR Update are needed (although they may not be all that is needed) for these states to eliminate their significant contribution to nonattainment or interference with maintenance of the 2008 ozone NAAQS.

70. Thus, for 21 of the CSAPR Update states, including Kentucky, the EPA determined that the emission reductions achieved through implementation of the budgets finalized in the rule will partially satisfy the EPA's good neighbor FIP obligation to fully prohibit emissions that contribute to downwind air quality problems with respect to the 2008 ozone NAAQS pursuant to CAA section 110(a)(2)(D)(i)(I). *Id.* at 74,508.

71. The EPA also currently has an obligation to issue FIPs for an additional three western states not addressed by the CSAPR Update: California, New Mexico, and Utah.[14]

72. For one state, Tennessee, the EPA determined that the emission reductions achieved through implementation of its emission budget will fully satisfy the EPA's good neighbor FIP obligation for the 2008 ozone NAAQS. *Id.* at 74,508 n.19. The EPA was able to draw this conclusion because the downwind air quality problem to which Tennessee contributed was projected to be resolved after implementation of the emissions reductions required by the

[14] *See* 80 Fed. Reg. 39,961 (finding of failure of California and New Mexico to submit good neighbor SIPs addressing the good neighbor provision); 81 Fed. Reg. 71,991 (Oct. 19, 2016) (partial disapproval of Utah good neighbor SIP for 2008 ozone NAAQS).

CSAPR Update. Accordingly, no further emissions reductions would be required to address these air quality problems.

73. The EPA also determined that we have fully satisfied our FIP obligation as to 9 states (Florida, Georgia, Maine, Massachusetts, Minnesota, New Hampshire, North Carolina, South Carolina, and Vermont), which the EPA determined do not contribute significantly to nonattainment in, or interfere with maintenance by, any other state with respect to the 2008 ozone NAAQS.[15] *Id.* at 74,506.

74. Accordingly, the CSAPR Update fully addressed the EPA's FIP obligation with respect to the good neighbor provision for 10 states for the 2008 ozone NAAQS. While the EPA issued partial FIPs for 21 states, the EPA has a remaining obligation to promulgate FIPs for a total of 24 states, including Kentucky, to fully address the good neighbor provision with respect to the 2008 ozone NAAQS.

75. The CSAPR Update was published in the *Federal Register* on October 26, 2016, and petitions for review of that rulemaking must be filed within 60 days of publication. *Id.* at 74,586. Thus far, five states have filed a petition for review of the CSAPR Update in the D.C. Circuit. *See Wisconsin v. EPA*, No. 16-1406 (D.C. Cir., filed Nov. 23, 2016).

v. Timeframes for Conducting Regional Transport Rulemakings

76. The development of regional transport rulemakings to address the good neighbor provision for the ozone NAAQS typically requires an extensive amount of technical and policy analysis, as described in sections B.i through B.iii and explained in more detail below. Such

[15] The EPA subsequently received and approved good neighbor SIPs addressing the 2008 ozone NAAQS from four additional states: Maine, New Hampshire, Rhode Island, and Vermont. 81 FR 70631, October 13, 2016.

actions are also conducted as notice-and-comment rulemakings, including a public hearing. Such rulemakings typically involve relatively lengthy comment periods so that the public has ample time to review and develop documents on the detailed technical analysis. As prior regional interstate transport rulemakings have resulted in numerous detailed technical and legal comments that require careful consideration by the Agency, the EPA must conduct additional technical analysis between the proposal and the final action promulgating the rulemaking. As a result, rulemakings to promulgate a remedy to address the regional transport of ozone pollution require a significant amount of time in order to ensure that the final action is technically sound and legally defensible.

77. The NO_X SIP Call rulemaking was the result of a two-year engagement known as the Ozone Transport Assessment Group (OTAG), through which, from 1995-1997, the EPA worked in partnership with the 37 eastern-most states and the District of Columbia, industry representatives, and environmental groups to address the interstate transport of ozone pollution. OTAG identified and evaluated flexible and cost-effective strategies for reducing long-range transport of ozone and ozone precursors. Based on information and recommendations resulting from the OTAG process, the EPA issued the proposed NO_X SIP Call on November 7, 1997, 62 Fed. Reg. 60,320. The final NO_X SIP Call was issued approximately one year later on October 27, 1998. 63 Fed. Reg. 57356. Overall, the NOx SIP Call rulemaking process lasted over three years.

78. The development of CAIR included two distinct regulatory processes – a regulation to define significant contribution (i.e., the emission reduction obligation) under the good neighbor provision and a regulation to promulgate FIPs. These rulemakings were developed between 2003 and 2006. While a precise date on which EPA began work on the

proposal is uncertain, the EPA held workshops to inform the proposal in July and August of 2003. While it is likely that work on the proposal preceded these workshops, these dates provide milestones that can be used to consider the time it took to develop this rule. Using this milestone to represent the starting point, subsequent milestones in the development of CAIR include: the proposed obligation rule on January 30, 2004; the final obligation rule on May 12, 2005; the proposed FIP on August 24, 2005; and the final FIP on April 28, 2006. Considering these dates, it is clear that the complete development timeline ran from July 2003 (or earlier) to April 2006. It is reasonable to conclude that the development of CAIR FIPs took approximately three years.

79. The development of CSAPR began with the remand of CAIR by the D.C. Circuit in July 2008, and the final CSAPR rulemaking was published in August 2011, more than three years later. Charged with the obligation to replace CAIR "from the ground up," *North Carolina*, 531 F.3d at 929, the EPA was required to redo its entire analysis and develop a means of implementing the good neighbor provision consistent with the D.C. Circuit's instructions. This meant that EPA needed to reevaluate downwind air quality and upwind contributions anew consistent with the D.C. Circuit's decision, including new technical analysis and new policy development. The EPA published a proposed rule on August 2, 2010. 75 Fed. Reg. 45,210. Subsequent to the proposed rule, the EPA determined that it was necessary to take comment on several additional issues not addressed in the proposed rule through the issuance of three notices of data availability (NODAs). A NODA regarding revisions to emissions inventories was published on October 27, 2010 (75 Fed. Reg. 66,055); a NODA related to EPA's updated EGU modeling inputs was published on September 1, 2010 (75 Fed. Reg. 53,613); and a NODA to request comment on allocations and the CSAPR assurance provisions was published on January

7, 2011 (76 Fed. Reg. 1,109). The EPA published the final rule on August 8, 2011, 76 Fed. Reg. 48,208, three years after the D.C. Circuit's remand of CAIR.

80. As described previously, the original CSAPR underwent a lengthy period of legal uncertainty. While CSAPR was being litigated, the EPA conducted work intended to support a subsequent rulemaking addressing the interstate transport of ozone pollution, but due to the shifting legal landscape resulting from the D.C. Circuit and Supreme Court decisions, the EPA did not propose or finalize any further regulations. However, following the Supreme Court decision largely upholding the original CSAPR rulemaking, the EPA began the process of developing the CSAPR Update. The Supreme Court decision upholding CSAPR was issued in April 2014 and the final CSAPR Update was published in October 2016, two and a half years later.

81. Several factors facilitated a relatively expeditious development of the CSAPR Update following the Supreme Court decision. For example, the EPA was able to apply the previously used CSAPR framework and did not have to develop significant new policy approaches for addressing interstate ozone transport. Moreover, the CSAPR Update was relatively limited in scope because it focused on near-term pollution reductions in the east that could be made for the 2017 ozone season, which limited the scope of NO_X reductions strategies that could feasibly be implemented and caused the EPA to focus only on EGUs for potential emissions reductions. Despite these expediting factors, it still took 30 months from the Supreme Court decision (April 2014) for the EPA to finalize the CSAPR Update (October 2016).

C. Analysis Necessary to Promulgate a FIP to Address Kentucky's Remaining Emissions Reduction Obligation Pursuant to the Good Neighbor Provision with Respect to the 2008 Ozone NAAQS

i. Kentucky's Good Neighbor Obligation with Respect to the 2008 Ozone NAAQS

82. While the EPA has issued the CSAPR Update, which promulgates a FIP partially addressing Kentucky's good neighbor obligation with respect to the 2008 ozone NAAQS, the EPA acknowledges that we have not fully addressed the requirements of good neighbor provision. However, before the EPA can impose a FIP to fully address Kentucky's remaining good neighbor obligation, the EPA must quantify the remaining "amounts" of emissions from the state that "contribute significantly to nonattainment" and "interfere with maintenance" of the 2008 ozone NAAQS in other states pursuant to CAA section 110(a)(2)(D)(i)(I).

83. As described in section B, over the course of four regional rulemakings conducted by the EPA since 1998, the EPA has developed a four-step process, referred as the CSAPR framework, for quantifying necessary emissions reductions to address interstate ozone pollution and to implement those reductions: (1) identifying downwind receptors that are expected to have problems attaining or maintaining clean air standards (i.e., NAAQS); (2) determining which upwind states contribute to these identified problems in amounts sufficient to "link" them to the downwind air quality problems; (3) for states linked to downwind air quality problems, identifying upwind emissions that significantly contribute to nonattainment or interfere with maintenance of a standard; and (4) for states that are found to have emissions that significantly contribute to nonattainment or interfere with maintenance of the NAAQS downwind, implementing reductions in the identified upwind states.

84. As described in the paragraphs that follow, although the EPA promulgated the CSAPR Update, which partially addresses Kentucky's obligation pursuant to the good neighbor

provision, the EPA has not yet calculated the full amount of Kentucky's emissions that must be prohibited to address the good neighbor provision requirements with respect to the 2008 ozone NAAQS, nor does the EPA currently have the data and technical analysis necessary to conduct such a calculation. Rather the process required to calculate the appropriate amount of emissions reductions required of sources in Kentucky to address the good neighbor provision requires a series of steps.

85. First, the EPA is in the process of improving data relevant to calculating potential emissions reductions from non-EGU stationary sources, which the EPA anticipates may constitute a portion of the "amounts" of Kentucky's emission that must be prohibited pursuant to the good neighbor provision. As described in section C.ii below, the EPA anticipates this process will be complete in 9.5-11.5 months. Second, the EPA must conduct air quality modeling for a future analytic year that is aligned with the anticipated compliance timeframe for any additional emissions reductions in order to identify downwind air quality problems and the level of contribution from upwind states to those downwind air quality problems (CSAPR framework steps 1 and 2). As described in section C.iii below, the EPA anticipates this process will require between 9 and 12 months to complete and can, in part, overlap with the work being conducted to improve our data relevant to calculating potential emissions reductions from non-EGUs. Further, the EPA must evaluate available emissions reductions from both EGUs and non-EGUs and calculate appropriate emissions limitations for sources in Kentucky to ensure emissions reductions are achieved (CSAPR framework step 3). As described in section C.iv below, the EPA anticipates this process will require between five and six months to complete, some of which can occur concurrently with the air quality modeling. In total, the EPA will require until at least March 2018, to complete these steps necessary for the EPA's technical

analysis to quantify Kentucky's emissions reductions obligation pursuant to the good neighbor provision. The EPA also notes that, as discussed in section C.v below, the EPA will need to take steps to develop FIPs to implement the emissions reductions required by the good neighbor provision to address the 2008 ozone NAAQS (CSAPR framework step 4). Given the EPA's expectation that emissions reductions from non-EGUs may be required, this decision is not ready-made and may require technical analysis to develop appropriate FIPs. However, the EPA does not anticipate that this step would add additional time to the rulemaking schedule described in this declaration. The EPA explains why this technical analysis is necessary in the following paragraphs.

86. The EPA believes that we must conduct a regional analysis in order to fully evaluate Kentucky's remaining obligation pursuant to the good neighbor provision with respect to the 2008 ozone NAAQS. As the EPA has routinely found throughout nearly 20 years of interstate transport rulemakings, the ozone transport problem is regional in nature, wherein downwind states' problems attaining and maintaining the ozone NAAQS result from the contribution of pollution from multiple upwind states, with upwind states routinely contributing to multiple downwind air quality problems in varying amounts. For example, with respect to the 2008 ozone NAAQS, the EPA determined in the recent CSAPR Update rulemaking that, collectively, 22 upwind states contribute at or above the 1 percent threshold to downwind air quality problems at 19 different receptor locations in the eastern United States. Individual upwind states contribute to between 1 and 8 downwind nonattainment or maintenance receptors and, in a number of cases, also contain at least one receptor indicating a downwind air quality problem to which other states contribute. The following graphic depicts the upwind state-to-

downwind state linkages identified in the CSAPR Update between pollution from upwind states and downwind states that have problems meeting or maintaining the 2008 ozone NAAQS:

87. Given the multi-faceted nature of ozone transport, the Supreme Court has acknowledged that the EPA is faced with the burden to determine "how to differentiate among otherwise like contributions of multiple upwind states." 134 S. Ct. at 1607. As the Supreme Court acknowledged, the statute does not provide the EPA with the metric by which EPA is to decide the apportionment of the shared obligation to address a downwind air quality problem

among multiple upwind states, what the Court refers to as the "thorny causation problem." *Id.* at 1603-04.

88. Accordingly, because the ozone air quality problems are regional in nature, EPA has developed – and the Supreme Court has endorsed – a regional approach for quantifying individual states' emission reduction obligation.[16] In particular, the EPA has developed a two-step metric to quantify the amounts of a state's emissions that "contribute significantly to nonattainment" or "interfere with maintenance" of the ozone NAAQS in another state to which it is linked: those emissions that both (1) contribute 1 percent or more of the NAAQS to an identified downwind air quality problem (CSAPR framework step 2) and (2) can be eliminated through implementation of cost-effective control strategies, applied uniformly to all states linked to an air quality problem (CSAPR framework step 3). When evaluating whether a control strategy is cost-effective for this purpose, the EPA considers the incremental cost per ton of emissions reduced, the magnitude of emissions that can be reduced using a particular control strategy, and the downwind air quality benefits of implementing such emissions reductions. 81 Fed. Reg. at 74,519. The Supreme Court found this approach, as applied in the original CSAPR rulemaking, to be "an efficient and equitable solution to the allocation problem the Good

[16] Plaintiff Sierra Club misrepresents the EPA's statements in an action disapproving portions of Utah's good neighbor SIP with respect to the 2008 ozone NAAQS. *See* Pl.'s Br. at 23. In response to comments advocating that the EPA conduct a comprehensive rulemaking to address interstate transport for western states, the EPA explained that the statute did not require us to conduct such a rulemaking before states were required to submit good neighbor SIPs. *See* 81 Fed. Reg. 71,991, 71,993 (Oct. 19, 2016). The EPA did not speak to the type of analysis that would be required to promulgate a FIP quantifying western states' emissions reductions obligations pursuant to the good neighbor provision. On the contrary, the EPA relied in part on the type of regional air quality modeling described in this declaration to support its final action disapproving Utah's SIP submission. *Id.* at 71,991-92.

Neighbor Provision requires the Agency to address." *Id.* at 1607. The Court held that this approach is:

> [e]fficient because EPA can achieve the levels of attainment, i.e., of emission reductions, the proportional approach aims to achieve, but at a much lower overall cost. Equitable because, by imposing uniform cost thresholds on regulated States, EPA's rule subjects to stricter regulation those States that have done relatively less in the past to control their pollution. Upwind States that have not yet implemented pollution controls of the same stringency as their neighbors will be stopped from free riding on their neighbors' efforts to reduce pollution. They will have to bring down their emissions by installing devices of the kind in which neighboring States have already invested.

Id.

89. Pursuant to this approach, it is simply not possible to quantify the amount of emission reductions that comprise one state's good neighbor obligation in a vacuum. Instead, the EPA must also evaluate the contributions of all other states linked to the same air quality problem. Accordingly, in order to quantify Kentucky's emission reduction obligation under the good neighbor provision with respect to the 2008 ozone NAAQS in the efficient and equitable manner upheld by the Supreme Court, it is necessary for the EPA to evaluate Kentucky's contribution to downwind air quality problems relative to the contributions of other states contributing to the same air quality problems. The EPA likewise must evaluate each of the other states' remaining contributions to downwind air quality problems relative to the contribution of the other contributing states, including Kentucky.

90. The CSAPR Update represents a significant first step to quantify Kentucky's and other states' emission reduction obligations under the good neighbor provision relative to the 2008 ozone NAAQS. However, as noted at paragraphs 69, the EPA could not conclude that the reductions required by the CSAPR Update represent the full amounts of emission reductions necessary for many states, including Kentucky, to address the good neighbor provision as to the 2008 ozone NAAQS. As noted in paragraphs 74, the EPA has an obligation to promulgate FIPs

fully addressing the good neighbor provision with respect to the 2008 ozone NAAQS for 23 states other than Kentucky. Although the deadlines for the EPA to promulgate these additional FIPs will not pass until 2017 and 2018, the EPA expects these deadlines will pass during the period in which we will be conducting the analysis necessary to address its FIP obligation as to Kentucky. Accordingly, conducting the necessary regional analysis to address Kentucky will also permit the Agency to address the outstanding FIP obligations for these 23 other states. If the EPA were to instead focus its analysis on developing a FIP for Kentucky alone – if that were even possible given the regional, interconnected nature of ozone transport – the EPA would necessarily need to delay action to address its FIP obligation as to these 23 other states, thereby missing a number of additional statutory deadlines. A schedule sufficiently robust to permit the EPA to conduct this necessary regional analysis will also permit the agency to address these other outstanding FIP obligations.

91. Based on the EPA's and the courts' interpretation of the good neighbor provision, there are three ways in which the EPA can determine that an upwind state has fully addressed the good neighbor provision with respect to the 2008 ozone NAAQS: (1) the downwind air quality problem (both nonattainment and maintenance) to which the state is linked can be resolved from collective, cost-effective emission reductions occurring in both upwind and downwind states; (2) the upwind state's contribution to downwind air quality problems can be reduced, through the implementation of cost-effective emissions reductions, to the 1 percent screening threshold such that the EPA can conclude the state's remaining impact on the downwind air quality problem is insignificant, even if the downwind air quality problem persists; or (3) upwind states have implemented all cost-effective emissions reductions (considering cost, emission reductions, and downwind air quality impacts) that constitute each state's significant contribution to

nonattainment or interference with maintenance of the NAAQS downwind, even if the downwind air quality problem persists.[17] Thus, the EPA can either conclude that the emissions reductions from linked states resolve the downwind air quality problem, or, if not resolved, that the upwind states has reduced any emissions from the state that would be qualified as "significant." The EPA could not conclude that the emissions reductions required by the CSAPR Update were sufficient to address the requirements of the good neighbor provision for Kentucky with respect to the 2008 ozone NAAQS under any of these three scenarios.

92. The CSAPR Update analysis found that emissions from Kentucky were linked to four downwind maintenance receptors based on the 2017 air quality modeling conducted to support that rule. After implementation of the emission reductions required by the CSAPR Update, two of the downwind maintenance receptors to which Kentucky is linked in Hamilton County, Ohio, and Philadelphia, Pennsylvania, are not expected to have remaining air quality problems. *See* Attachment 2, Ozone Transport Policy Analysis Final Rule Technical Support Document (TSD) at p. 34, table D-7. As to those receptors, the EPA need not require further emissions reductions from sources in Kentucky or any other states in order to address the good neighbor provision with respect to the 2008 ozone NAAQS.

93. However, the other two downwind maintenance receptors to which Kentucky is linked in Harford County, Maryland, and Richmond County, New York, are expected to have remaining air quality problems following implementation of the CSAPR Update in 2017. *Id.*

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[17] *See, e.g.*, *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. at 1608-09 (holding that the EPA cannot require states to reduce emissions more than necessary to bring the downwind air quality into attainment or maintenance of the NAAQS or by more than the 1 percent threshold); 76 Fed. Reg. at 48,259 (quantifying necessary SO2 emissions reductions based on a $2,300 per ton cost threshold even though downwind air quality problems remained because additional reductions were not cost-effective).

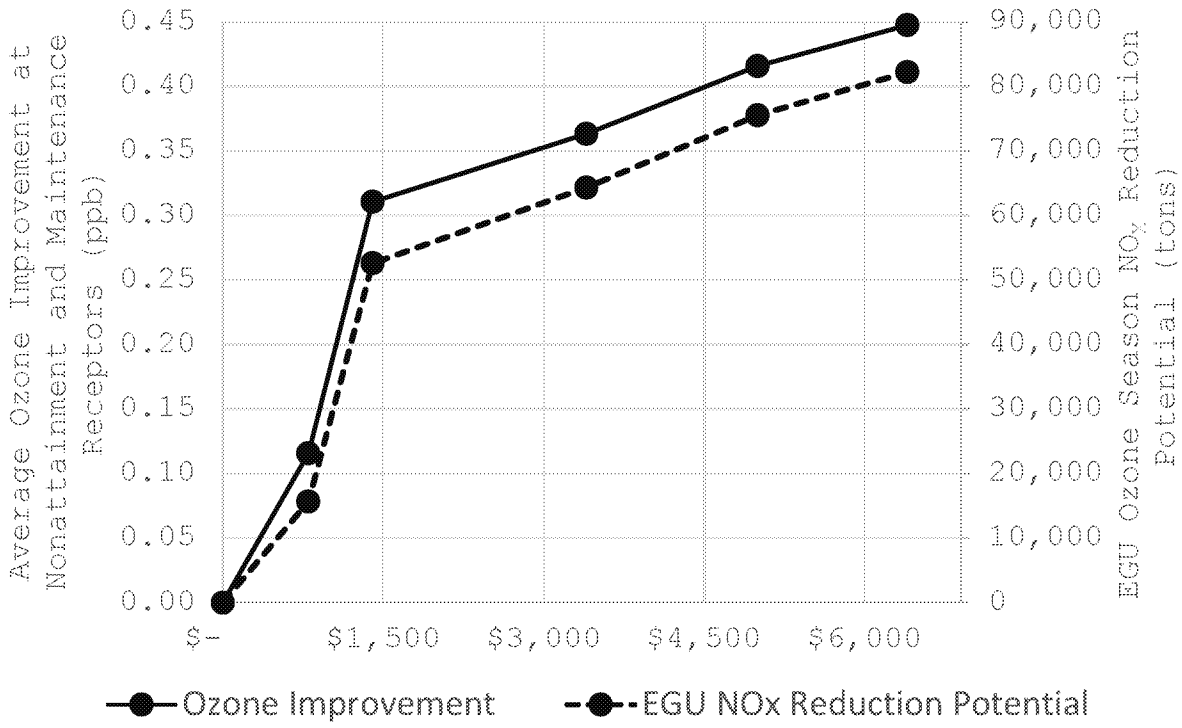
The EPA's modeling conducted for the CSAPR Update projected that, before implementing any emissions reductions pursuant to the good neighbor provision, Kentucky would be expected to contribute 2.18 parts per billion (ppb) of ozone pollution to the air quality levels at the Harford receptor in 2017 and 1.03 ppb to air quality levels at the Richmond receptor, both levels of contribution above the 0.75 ppb screening threshold used to identify those states that are "linked" to downwind receptors should be subject to further analysis to determine whether cost-effective emissions reductions were available in the state. *See* Air Quality Modeling Final Rule Technical Support Document, Appendix C at C-3.[18] The EPA's modeling further demonstrated that eight other states and the District of Columbia would also be expected to contribute above the 0.75 ppb screening threshold to the Harford receptor and that seven other states would be expected to contribute above the screening threshold to the Richmond receptor. *Id.* Thus, in step 2 of the CSAPR framework, these states were all considered "linked" the Harford and Richmond receptors.

94. Applying step 3 of the CSAPR framework, the EPA determined that cost-effective emissions reductions from EGUs could be achieved at a level of control stringency equivalent to $1,400 (2011$), and calculated EGU emissions budgets for each state based on the emissions reductions achievable at that level of control stringency. 81 Fed. Reg. at 74,550. The EPA's analysis of costs, EGU NO_X reductions, and corresponding improvements in downwind ozone concentrations resulted in a "knee in the curve" at a point where emission budgets reflected a control stringency with an estimated marginal cost of $1,400 per ton of emissions reduced. This level of stringency in emission budgets represented the level at which incremental

[18] Available at https://www3.epa.gov/airmarkets/CSAPRU/AQ%20Modeling%20TSD%20Final%20CSAPR%20Update.pdf.

EGU NO_X reduction potential and corresponding downwind ozone air quality improvements were maximized with respect to marginal cost. That is, the ratio of emission reductions to marginal cost and the ratio of ozone improvements to marginal cost were maximized relative to the other emission budget levels evaluated.

Figure 1: Multi-factor test for EGUs in the CSAPR Update



95. The EPA concluded that the emissions reductions achieved by implementation of the budgets constitute a portion of each state's significant contribution to nonattainment or interference with maintenance of the 2008 ozone NAAQS at these receptors. For Kentucky, the emissions budget quantified by the rule requires emissions reductions of 6,616 tons from 2015 emissions levels. Kentucky's and other states' budgets are implemented through FIPs that require affected EGUs in each state to participate in a regional allowance trading program beginning with the 2017 ozone season. 81 Fed. Reg. at 74,553.

96. The EPA determined that Harford and Richmond receptors would continue to have problems maintaining the 2008 ozone NAAQS in 2017 after implementation of the budgets finalized in the CSAPR Update. *See* Attachment 2, Ozone Transport Policy Analysis TSD at 34, Table D-7. Moreover, even after implementation of the CSAPR Update budget in Kentucky, emissions from Kentucky and from other states linked to these receptors are expected to continue to exceed the 1 percent screening threshold in 2017. *See* Final Ozone AQAT Results at "1400 eng EB links" tab.[19] Furthermore, as described earlier at paragraphs 69, the budgets quantified for Kentucky and for other states linked to these same receptors reflect only the emission reductions that are achievable from EGUs by the 2017 ozone season. Additional cost-effective emissions reductions may be achievable from EGUs on a timeframe longer than 2017 and/or from source sectors other than EGUs. Accordingly, the EPA could not conclude that the emissions reductions achieved through implementation of the budgets necessarily represent the full amount of emissions reductions necessary to address these states' interference with maintenance of the 2008 ozone NAAQS at these two receptors. Instead, the EPA must evaluate whether additional emissions reductions should be required from sources in Kentucky and in the other 10 states and the District of Columbia which are linked to these same air quality problems.

97. Without further analysis, the EPA will not be not able to establish the level of control that represents Kentucky's full emissions reduction obligation to address the good neighbor provision with respect to the 2008 ozone NAAQS. First, although the EPA identified downwind areas in the CSAPR Update that are expected to have problems attaining or maintaining the 2008 ozone NAAQS in the 2017 compliance year, the EPA must analyze downwind air quality in a future compliance year. Any subsequent rulemaking to fully quantify

[19] Available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0500-0492.

emissions reductions necessary to address the good neighbor provision with respect to the 2008 ozone NAAQS will necessarily require compliance in a year later than 2017. The nature of the air quality problems may be different in that future year, considering the implementation of additional state and federal requirements (such as upcoming requirements to reduce mobile source emissions) and other changes in emissions due to economic factors and changes in the energy sector in terms of growth in oil and gas production and electricity demand.

98. The EPA therefore believes it is necessary to conduct air quality modeling to project air quality levels in an appropriate future year that is later than 2017 in order to identify the extent of remaining downwind nonattainment and maintenance problems in that future year (CSAPR framework step 1). The results of this analysis could show, for example, that the nonattainment and maintenance problems projected to persist in 2017 are either diminished or resolved in a later year because of emissions reductions expected to occur between 2017 and that future year. Similarly, the EPA believes we must conduct air quality modeling to evaluate upwind state contributions to downwind nonattainment and maintenance problems in that future year, the results of which could show a change in the level of contribution from Kentucky relative to the one percent screening threshold (CSAPR framework step 2). Such modeling is necessary to ensure that the EPA does not require more or fewer emissions reductions than necessary in that future year to address the downwind air quality problems. The EPA's failure to conduct such an analysis could result in over- or under-control of sources in Kentucky and other upwind states in violation of the good neighbor provision, consistent with the Supreme Court's holding in *EPA v. EME Homer City Generation*, 134 S. Ct. at 1608-09. The steps necessary to conduct this analysis are described in section C.iii below.

99. Moreover, the EPA must conduct a technical analysis to evaluate the level of emissions reductions available from control strategies that can be implemented in a future year and the impacts on air quality from implementation of those emission reductions. In the CSAPR Update, the EPA considered emissions reductions available from the implementation of control strategies that could be implemented by the 2017 ozone season including: restarting inactive selective catalytic reduction (SCR) controls; fully operating SCRs that were operating at less than full capacity; restarting inactive selective non-catalytic reduction controls (SNCR); and replacing outdated combustion controls with newer advanced technology (e.g., state-of-the-art low NO_X burners). *See* Attachment 3, EGU NO_X Mitigation Strategies Final Rule TSD. The EPA explained that additional reductions could be achieved from EGUs with the installation of post-combustion controls, such as SCR or SNCR, but that, feasibly, such controls require several years to install. *See id.*; 81 Fed. Reg. at 74,541-42. Accordingly, the emissions reductions achievable from the installation of post-combustion controls could not be implemented by 2017 and were not considered for purposes of calculating budgets in the CSAPR Update. Therefore, in order to determine the level of NO_X control stringency necessary to quantify those emissions reductions that constitute fully eliminating significant contribution to downwind nonattainment or interference with maintenance for the region, and therefore also for Kentucky, the EPA must evaluate further emission reductions from EGU strategies that take longer to implement than those considered in the CSAPR Update rulemaking.

100. Moreover, the EPA believes we must evaluate emission reductions available from non-EGU stationary sources that may be able to implement cost-effective emission reductions on a timeline similar to that necessary for additional EGU controls. As described earlier, the EPA's CSAPR rulemakings have focused on the cost-effective emissions reductions achievable from

EGUs. Prior rulemakings have determined that cost-effective emissions reductions were achievable at incremental costs ranging from $560 to $3,300/ton (2011$) as shown below in the table.

Rule	$/ton NOx Reduced	$/ton NOx Reduced (2011$)[20]
NOx SIP Call	$2,000 (1990$)	$3,300
CAIR	$500 (1999$)	$750
CSAPR	$500 (2007$)	$560
CSAPR Update	$1,400 (2011$)	$1,400

In the CSAPR Update, the EPA calculated the incremental cost of additional emissions controls for EGUs, including the installation of new post-combustion controls. The EPA calculated that the installation of new post-combustion controls would incur an incremental cost of $5,000 (2011$) per ton of NOx reduced for SCR and $6,400 (2011$) per ton of NOx reduced for SNCR, significantly higher than the incremental costs used to calculate emissions budgets in prior ozone interstate transport rulemakings.

101. The EPA also included data in the docket for the CSAPR Update regarding the cost and NO_X reduction potential for controls on various categories of non-EGU stationary emissions point sources. Those data demonstrate that substantial emissions reductions are likely achievable from non-EGUs at costs of $3,400 (2011$) per ton of NOx reduced or less, which is significantly lower than the costs of remaining NOx control strategies available for EGUs]. *See* Attachment 4, Final Technical Support Document for the Cross-State Air Pollution Rule for the 2008 Ozone NAAQS, Assessment of Non-EGU NOx Emission Controls, Cost of Controls, and Time for Compliance (Final Non-EGU TSD) at 11-19. Accordingly, given that implementation

[20] The cost per ton numbers were escalated to 2011$ using the Chemical Engineering Plant Cost Index annual index values. More information on the CEPCI can be found at http://www.chemengonline.com/pci.

of additional EGU controls such as the installation of new SCR and SNCR is much costlier than the implementation of controls at certain non-EGUs, the EPA believes it would be inequitable and inefficient to require additional reductions from EGUs without also considering potential emissions reductions from non-EGUs that can be implemented in similar timeframes. Moreover, such an approach would be inconsistent with the EPA's precedent defining significant contribution to nonattainment and interference with maintenance pursuant to the good neighbor provision as those emissions reductions achievable through the implementation of cost-effective control strategies. Were the EPA to quantify emissions budgets based solely on those additional and more expensive reductions achievable from EGUs without also considering available emissions reductions from non-EGUs, the EPA would not necessarily be quantifying a state's emissions reductions obligation based on the most cost-effective control strategies.[21]

102. Thus, while the EPA may determine that additional emissions reductions from EGUs are justified to fully address the 2008 ozone NAAQS when we considers the incremental air quality benefits to downwind receptors, the EPA also believes that we must evaluate cost-effective emissions reductions available from non-EGUs in order to fully evaluate and quantify upwind state emission reductions that constitute states' significant contribution to nonattainment and interference with maintenance of the 2008 ozone NAAQS. However, as explained in the CSAPR Update rulemaking, the EPA currently lacks sufficient data on control measure installation times to evaluate timely emissions reductions available from non-EGUs. 81 Fed. Reg. at 74,542. Accordingly, the EPA believes that it is necessary to engage in certain efforts to improve the EPA's data and information regarding non-EGUs as part of the next rulemaking

[21] As discussed at paragraph 68, the EPA did not evaluate emissions reductions available from non-EGUs in the CSAPR Update because they could not be implemented by the 2017 compliance period.

process. The steps that the EPA intends to take to improve these data, a process which is currently ongoing, are described in section C.ii below.

103. Once the EPA has completed the process to improve our data regarding non-EGUs, the EPA will need to evaluate emissions reductions available through the implementation of various NOx control strategies at both EGUs and non-EGUs, considering both the incremental cost per ton of implementing the strategies and the downwind air quality impacts of associated emissions reductions. The EPA must quantify emissions reductions at various cost thresholds, convert those emissions reductions into emissions budgets for the states and sources, evaluate air quality impacts of those budgets, and then select an appropriate level of control considering all of this information. This process is described in more detail in section C.iv below.

104. The EPA does not agree with the assertion by David Howekamp that the EPA could simply impose emissions reductions on sources in Kentucky until the state's contribution to downwind receptors meets the 1 percent threshold. *See* Howekamp Decl. para. 12. The 1 percent threshold is a screening threshold used to identify those states that contribute to identified downwind air quality problems. While states contributing below that threshold do not contribute to downwind air quality and, by definition, do not *significantly* contribute to downwind nonattainment, the EPA does not define all emissions above the 1 percent threshold as significant contribution or interference with maintenance. Rather, the "amounts" of emissions that must be prohibited pursuant to the good neighbor provision are those emissions that *both* meet or exceed the 1 percent contribution threshold *and* which can be eliminated through the implementation of cost-effective controls, considering downwind air quality and relative to the

contributions of other states linked to the same downwind air quality problems.[22] The 1 percent threshold, per the Supreme Court's holding in *EPA EME Homer City Generation*, 134 S. Ct. at 1609, is a backstop that prevents the EPA from requiring a level of emissions reductions that would result in the state's contribution being reduced below the 1 percent contribution threshold even if those additional reductions would be cost-effective and would improve a downwind air quality problem. Thus, if the amount of emissions reductions achievable through the implementation of cost-effective controls would reduce the state's contribution below the 1 percent threshold, the EPA must increase the state's budget so that it is equal to the 1 percent threshold even if the downwind air quality problem persists. Similarly, if the EPA determines that a state has implemented all cost-effective controls, but the state's contribution is still above the 1 percent threshold and the downwind air quality problem persists, the EPA can nonetheless determine that the state has eliminated a sufficient "amount" of emissions to satisfy its good neighbor obligation. On the other hand, if the EPA required Kentucky to reduce its emissions to the level 1 percent threshold to a particular downwind air quality problem but did not consider whether those emissions reductions were cost-effective or the contributions of other linked upwind states, the EPA might be imposing an inefficient burden by requiring Kentucky to make emissions reductions that are not cost-effective (and therefore not "significant") or an inequitable

[22] The EPA also has not concluded that Kentucky power plants *continue* to significantly contribute to nonattainment and interfere with maintenance of the 2008 ozone NAAQS in downwind states after implementation of the CSAPR Update. *See* Pl.'s Br. at 6. Plaintiff mischaracterize the EPA's Answer and the CSAPR Update. First, Plaintiff wrongly presumes that all contribution above the 1 percent threshold *significantly* contribute to nonattainment or interfere with the NAAQS, which is inconsistent with the EPA's interpretation of the statute. Second, the EPA's analysis evaluates whether emissions from the entire *state* significantly contribute to nonattainment and interfere with maintenance of the NAAQS in other states; the EPA does not evaluate whether emissions from a particular source sector make such a contribution, even though emissions reductions may ultimately be imposed upon individual source sectors where they can be most cost-effectively implemented.

burden by requiring Kentucky to make more emissions reductions than would represent its "fair share" relative to other states. Requiring such draconian reductions from a single state or one subset of states that is contributing to interstate ozone problems (e.g., Kentucky) but not another subset of states is inherently inequitable and would create an uneven regulatory playing field across the region. This approach ignores the fact that other upwind states contribute to an interconnected, regional ozone problem and is inconsistent with the approach endorsed by the Supreme Court in *EPA v. EME Homer City Generation*, 134 S. Ct. at 1607. Thus, the EPA cannot simply reduce a state's emissions reductions to the level of the 1 percent threshold without considering the interrelated factors of cost-effectiveness, downwind air quality, and the contributions of other linked upwind states.

105. Moreover, the EPA does not agree with Plaintiff and Mr. Howekamp that there are "readily available emission reductions" that the EPA did not consider in the CSAPR Update. Pl.'s Br. at 19, Howekamp Decl. para. 10. In the CSAPR Update, the EPA calculated state budgets based on those emissions reductions available if EGUs operated their NO_X control equipment at "optimum efficiency"; in fact, this control strategy was the primary source of emissions reductions that the EPA calculated in that rulemaking. 81 Fed. Reg. at 74,543, 74,544. In particular, the EPA calculated state emission budgets based on those NO_X reductions available if EGUs operated their SCRs at a maximum rate of 0.10 lb/mmBtu, which is the same "optimum" rate assumed in the Sierra Club's analysis described in Katherine Clements's declaration. *Compare* 81 Fed. Reg. at 74,543-44 *with* Clements Decl. para. 5. Thus, emission reductions attributed to this lowered emissions rate in Sierra Club's analysis have already been accounted for in the EPA's analysis. The agency believes that it quantified all reasonable emission reductions from SCR in the CSAPR Update rule. All of the analysis and assumptions

that the agency finalized in that rule were informed by robust stakeholder input on the proposed rule. As described below, the agency does not find the information cited in Mr. Howekamp's declaration, provided by Ms. Clements and the Maryland Department of the Environment, Attachments 2 and 3 to the Howekamp Declaration, to provide compelling evidence that the CSAPR Update failed to quantify all reasonable near-term emission reductions from EGUs.

106. The EPA also considered the extent to which certain EGUs were able to operate at a rate better than 0.10 lb/mmBtu. However, the EPA did not assume and does not agree with Ms. Clements that it is appropriate to assume that EGUs can necessarily operate at the best rate ever achieved in the last 10 years. In the context of evaluating achievable NO_X emission rates for EGUs with existing SCR, the EPA found that it is not reasonable to assume that it is cost-effective for an EGU with SCR to achieve its best ever rate over the course of its operating life. Specifically, the EPA found that the lowest NO_X year for SCRs often reflects installation of a brand new system, including brand new catalyst. The NO_X removal efficiency under brand new conditions is not necessarily cost-effectively sustainable over time. This conclusion was informed by comments on the CSAPR Update. The CSAPR Update proposal relied on the second best ozone season NO_X rate for EGUs with SCR. In response to this proposal, stakeholders suggested that this rate is not representative of ongoing operation and maintenance, such as replacing the multiple layers of catalyst on a rotating basis. In response to these comments, the agency concluded that an achievable NO_X rate for EGUs with SCR would be based on the third best historical NO_X rate. The third best rate is representative of an ongoing and cost-effectively achievable NO_X rate. We also note that EPA's analysis specifically considered cost-effective reductions whereas the analysis provided by Ms. Clements does not

consider the cost involved in the hypothetical scenario of maintaining an SCR and all of its components, including catalyst, in mint condition.

107. Moreover, the EPA did not find it appropriate in the CSAPR Update to assume that 100 percent of EGU NO_X emissions will permanently disappear from the power sector when a unit retires as Ms. Clements's analysis imagines, *see* Clements Decl. para. 8. Specifically, zeroing out emissions from these EGUs does not consider that the electricity generation from retiring units will be replaced by generation from other EGUs in the fleet. The agency described its approach for anticipating replacement generation in light of EGU retirement in the CSAPR Update Ozone Transport Policy Analysis TSD at 13, Attachment 2. Finally, the EPA's analysis considered the extent to which units in states such as Kentucky were scheduled to retire prior to the 2017 ozone season. *Id.* The agency did not find it appropriate to account for the expected retirement of Paradise 1 and 2 in Kentucky in the CSAPR Update because this retirement is not expected to occur until the end of 2017, after the ozone season for which the CSAPR Update established emission budgets.[23]

108. Finally, the EPA does not agree that the current value at which CSAPR ozone season NO_X allowances are trading necessarily indicates that additional emissions reductions are readily achievable. *See* Howekamp decl. para 11. As explained in the CSAPR Update, the EPA uses uniform stringency levels of EGU NO_X control strategies (e.g., turning on idled existing SCR) to establish emissions budgets. The CSAPR Update emission budgets are in turn calculated using changes in NO_X emission rates reflecting these strategies. While the agency uses cost thresholds to inform this analysis, the EPA's intent is to establish emission budgets that reflect emission reduction potential from the available NO_X control strategies. The CSAPR

[23] *See* https://www.tva.gov/Energy/Our-Power-System/Coal/Paradise-Fossil-Plant.

Update does not intend to regulate the cost at which an allowance is sold in the CSAPR Update compliance market, as suggested by Mr. Howekamp's claim. Further, current allowance prices are not determinative of future allowance prices at a time when they will be needed for compliance. The CSAPR Update was published on October 26, 2016 with implementation beginning in May 2017 and compliance to be determined in March of 2018. Allowance prices in the fall of 2016 (more than a year from when they are needed for compliance) are a reflection of conjecture on future supply and demand for allowances and are not a guarantee of future prices. Finally, allowances prices below $1,400 are not necessarily indicative of significant further NO_X reduction potential. Allowance prices are set by aggregate demand from many EGUs. To the extent that any individual EGU finds a more cost-effective method to achieve the emission reductions implemented by the CSAPR Update (e.g., turns on its SCR at lower cost), then allowance prices may drop. However, this occurrence does not necessarily mean that the EGU could achieve further reductions beyond optimizing its SCR. A determination that further EGU NO_X reduction potential is achievable would require a new analysis of EGU behavior under the CSAPR Update. It is incorrect to draw such conclusions at this time. The sections that follow describe the steps and timeframes necessary to complete the technical work required to analyze Kentucky's and other states' remaining emissions reduction obligation pursuant to the good neighbor provision with respect to the 2008 ozone NAAQS. These sections address the efforts being made to improve the EPA's data regarding NO_X reduction potential from non-EGUs, which is ongoing (section C.ii); the steps necessary to conduct air quality modeling to evaluate downwind air quality and contributions from upwind states (section C.iii); the technical analysis necessary to evaluate necessary emissions reductions from sources in upwind states

(section C.iv); and the considerations affecting the implementation of such emissions reductions (section C.v).

ii. Steps Necessary to Improve Data to Evaluate NO_X Reduction Potential from Non-EGUs

109. Before the EPA can begin the analysis necessary to quantify the amounts of emissions reductions necessary to address the good neighbor provision with respect to the 2008 ozone NAAQS for Kentucky and other states, the EPA must first take certain steps to improve its information regarding the emissions reductions achievable from non-EGUs. In particular and as discussed in more detail below, the EPA lacks information regarding existing controls at non-EGUs and data on potential control devices that could be installed on uncontrolled or under-controlled sources. This information is necessary to quantify potential emissions reductions from non-EGU sources and their costs. In contrast to non-EGUs, emissions data and control device information for EGUs is more readily available and accessible because of continuous emissions monitoring and other specific source monitoring and reporting requirements for these sources. Moreover, the EPA has significantly better data regarding the control devices that could be installed on EGUs. If the EPA does not take the necessary steps to improve this information with respect to non-EGUs, the results of the EPA's analysis may be inaccurate and result in either over- or under-control of emissions relative to downwind air quality problems, in violation of the good neighbor provision and Supreme Court's decision in *EPA v. EME Homer City Generation*, 134 S. Ct. at 1608-09.

110. The steps necessary to improve the EPA's data are already ongoing, and are expected to require 9.5-11.5 months, or until September to November 2017, to complete. The following table summarizes those steps which are described in more detail in the following

paragraphs. The EPA's Gantt chart shows how these steps interrelate with one another and with the other tasks described in this declaration. *See* Attachment 1.

Task	Timeframe	Earliest Target Date
Complete Inventory of Non-EGUs		
• Stakeholder Review of Non-EGU Data	Complete	November 2016
• Implementing Comments on Non-EGU Data	1.5 months	January 2017
Engage Stakeholders on Emission Reductions and Cost		
• Prepare Non-EGU and EGU Cost and NOx Analysis	3 months	March 2017
• Stakeholder Review of Data	3 months	June 2017
• Incorporating Stakeholder Feedback	3-5 months	September 2017

111. The first component needed for purposes of the EPA's analysis of non-EGUs is data on the emissions from non-EGU sources. Data on emissions from non-EGU sources are used as the baseline from which to calculate potential emissions reductions from these sources. The National Emissions Inventory (NEI) provides a comprehensive and detailed estimate of air emissions of criteria pollutants and criteria pollutant precursors, including NOx, from air emissions sources. The NEI is released every three years by the EPA and is based primarily on data provided by State, Local, and Tribal air agencies for sources within their jurisdictions and supplemented by data developed by the EPA. The NEI contains information on point sources of emissions, including large industrial facilities, airports, and smaller industrial, non-industrial and commercial facilities. The EPA recently released a new version of the NEI in September 2016

that represents emissions that occurred during the year 2014. The previous NEI represented emissions that occurred during the year 2011.

112. The second input needed to inform an analysis of potential emission reductions from non-EGUs is information on whether emissions from each non-EGU stationary emissions point source are already controlled, by what control device, and at what level of control device efficiency. This information is to be reported by states under the Air Emissions Reporting Requirements (AERR) used to collect data for the NEI. This information is only required to be provided when control devices, measures, or technologies are present on the emissions sources. Because controls are not present on every non-EGU emissions source, it is very difficult to enforce the requirement to report control device information. As a result, this control-related information is not complete for non-EGU sources in the NEI. Without more complete information on what control devices are currently on non-EGU emissions sources and what level of emissions reductions those devices already achieve, the EPA is not able to prepare a comprehensive and accurate assessment of potential additional NOx emissions reductions from the various types of non-EGU emissions sources or units. Were the EPA to proceed to develop emissions budgets without accurate information about current control devices on non-EGUs, the resulting emissions budgets could either over- or under-control emissions relative to downwind air quality problems and the statutory requirements of the good neighbor provision.

113. In September 2016, the EPA initiated an effort to work with several multi-jurisdictional organizations and states to conduct a review of the control information on non-EGU stationary NOx emissions point sources or units in the 2014 NEI version 1 (2014NEIv1). The 2014NEIv1 includes over 110,000 records for non-EGU stationary NOx emissions units, with approximately 2,500 units with emissions over 100 tons per year (tpy) and an additional

6,000 units with emissions between 25 and 100 tpy. The EPA requested that the states prioritize their review to focus on the approximately 8,500 non-EGU stationary NOx emissions units that emit more than 25 tpy. After forwarding the 2014NEIv1 information to the states, the EPA provided a 30-day review period, and the review by states was largely complete at the end of November, with responses submitted back to the EPA.

114. The EPA is currently compiling the updated information and will transfer this information into the 2014NEIv2. The EPA will likely need an additional month to ensure the information is in the appropriate electronic format to submit as updates to the 2014 NEI. Accordingly, the process to collect the information from the states, compile the information, and include it in the 2014NEIv2 is expected to be completed between the end of December and the end of January 2017. [24]

115. In addition to the above information, a critical third component needed for analyzing the potential emissions reductions from non-EGU emissions sources is comprehensive data on potential control devices that could be installed on uncontrolled or under-controlled sources. As compared to EGUs, there are a substantially greater number and variety of non-EGU source categories that the EPA must evaluate, and that can be controlled by a larger variety of potential control devices. The EPA has taken steps to improve its data on control device or measure information, including information on installation times, control efficiency, and costs, for non-EGU emissions sources, but its work on this front is incomplete for purposes of NO_X control strategy analysis on non-EGUs. The EPA collects and reviews control measure information from many sources and uses this information for many purposes. Historically, most

[24] The draft version of the 2014NEIv2 will be available for internal EPA use starting in February 2016, but the public release of the final 2014NEIv2 will not be made available until late summer of 2016.

of the EPA's efforts to improve NOx control measure information were conducted to support control strategy analyses associated with rulemakings in which states decide on which sources to control and at what level (e.g., the NAAQS). In these cases, EPA's analyses were only intended to illustrate possible control options and associated costs; the states were free to substitute whatever controls they found most effective and least costly in their particular circumstances. However, in developing a FIP to address interstate ozone transport, the use of cost thresholds as a factor in defining states' emissions control obligations requires highly accurate information on control costs, applicability, and achievable emissions reductions.[25] Accordingly, to support a regulatory assessment of the NOx reduction potential from non-EGU sources, the EPA must take additional steps to ensure that the quality of control measure information for these sources is sufficiently accurate and reliable to support regulatory analyses.

116. The EPA does regularly update its information on available control devices or control measures for non-EGU stationary emissions sources or units. The Agency's most recent efforts to update this information can be found in the Final Non-EGU TSD, which was completed in August 2016 and focused on whether control measures could be installed by the 2017 compliance timeframe of the CSAPR Update. The Final Non-EGU TSD is a product of more than three years of data collection and review, as well as preliminary control strategy analyses of the potential for NOx emissions reductions from non-EGU point emissions sources.

[25] Individual states have greater flexibility in developing SIPs to address the good neighbor provision because they can select a level of control that is independent from other states (e.g., the statute permits states to impose greater emissions reductions than the statute may require). To the extent the EPA promulgates a FIP addressing the good neighbor provision for any NAAQS, states have the authority to replace the FIP with a SIP based on the state's preferred mix of controls so long as the SIP satisfies the statutory requirements. *See, e.g.*, 81 Fed. Reg at 74,569.

However, for the reasons explained below, the information necessary to evaluate NOx emission reduction potential is not yet complete.

117. Updating information regarding potential controls for the number and variety of non-EGU stationary emissions point sources or units requires extensive staff time and resources. One of the ongoing challenges the Agency faces in updating this type of NO_X control measure information can be illustrated by the information presented in Table 3 of the Final Non-EGU TSD. *See* Attachment 4, Final Non-EGU TSD at 11-17. Table 3 provides details on costs, installation times and other information regarding potential control technologies for up to 40 different non-EGU emissions source groups or categories (e.g., industrial boilers, stationary internal combustion engines, and cement kilns). In general, this is accomplished through a continuous series of smaller updates, each focusing on particular sources or control devices. Conducting a major update involving control measure information for as many as 40 different emissions source groups simultaneously will require a very substantial effort and a large quantity of data. Once the EPA collects new information, staff review the information for relevance, compare the new information to information the EPA already maintains, and determine what portion of the new information should be reflected in its control measure datasets and tools. The information must be then compiled and formatted specifically for use in the EPA's datasets and tools. To incorporate the formatted information into its datasets and tools, the EPA relies on specific software development and computer programming expertise outside of the Agency, through managed contracts. The EPA must also ensure that new control measure data are appropriately quality assured. Because of the number and variety of source categories involved, this is a time intensive, iterative process.

118. The Agency has been and is continuing to incorporate information from Appendix A and Appendix B of the Final Non-EGU TSD into the control measures database (CMDB) that serves as a primary input for the Control Strategy Tool (CoST).[26] CoST models emissions reductions and control costs associated with the application of control devices or measures by matching the devices or measures to non-EGU emissions sources in the NEI. The CMDB contains emissions reduction and cost data for control devices or measures that can be applied to non-EGU emissions sources within CoST. The CMDB and CoST will be used for any analyses of the potential NOx emissions reductions and costs from the various types of non-EGU emissions sources or units identified in the NEI. Appendix A of the Final Non-EGU TSD includes updated or new data on reduction efficiency and costs for NOx control measures for the several non-EGU source groups. Appendix B of the Final Non-EGU TSD includes an assessment of CoST run results and recommendations for changing the applicability of control measure assignments for non-EGU NOx emissions sources. These recommendations were based on review of source permits, state regulations, enforcement actions, and other available information as of 2014 for a 24-state area in the eastern U.S.

119. The information from Appendix A and Appendix B of the Final Non-EGU TSD will be fully incorporated in CoST and the CMDB in January 2017. However, contrary to Plaintiff and Plaintiff-Intervenor's contention, Howekamp Decl. para. 14-16, Sliwinski Decl. para. 23, the Final Non-EGU TSD does not contain all of the information necessary for the EPA to fully quantify emissions reductions necessary to address the good neighbor provision with respect to the 2008 ozone NAAQS. For example, EPA included preliminary estimates of

[26] *See* https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/cost-analysis-modelstools-air-pollution.

installation times for individual non-EGU NOx control measures in its Final Non-EGU TSD ranging from 6 to 18 months. However, these preliminary estimates of installation times do not account for time required for programmatic adoption of measures, such as permitting and installation of monitoring equipment. Permitting requirements include submission of a draft permit application, technical review of the permit by government bodies, interactions between government bodies and the applicant, scheduling and holding of public hearings, time for responses to public comments on the permit, and final review and approval of the permit. Moreover, compared to EGUs that are currently equipped with monitors to comply with monitoring requirements and to participate in the current CSAPR program, non-EGUs of any type (e.g., industrial/commercial/institutional boilers or combustion turbines) that are not currently required to continuously monitor and report emissions in accordance with EPA regulations, 40 C.F.R. pt. 75, will require additional time to install monitoring equipment.

120. In addition, the preliminary estimates of installation time shown in the Final Non-EGU TSD are for installation at a single source, but do not account for the time required for installing controls to achieve sector-wide compliance. For installing control measures on sources across non-EGU industry sectors, time for full sector-wide compliance is currently uncertain, but it is longer than the installation time shown for control measures for individual sources in the Final Non-EGU TSD. Though EPA is currently engaged in efforts to improve its data, we do not have sufficient information on pollution control vendor capacity and has limited experience with both the suppliers of control measures and major engineering firms that design control measure installation. This information is critical to estimate the time needed for sector-wide compliance.[27]

[27] The EPA did not encounter this specific compliance concern in the CSAPR Update because the majority of near-term EGU NO_X reduction potential was available from optimizing existing

121. Furthermore, the Agency is currently updating the Air Pollution Control Cost Manual (Cost Manual)[28] as required by the 2014 Consolidated Appropriations Act. The EPA's Cost Manual provides guidance for the development of accurate and consistent costs for air pollution control devices. The Cost Manual focuses on stationary point source and stationary area (non-point) source air pollution controls for volatile organic compounds (VOCs), particulate matter (PM), oxides of nitrogen (NOx), sulfur dioxide (SO_2), and some acid gases. Section 4, Chapters 1 and 2 of the Cost Manual cover specific NOx control technologies and have been updated as of May 2016, and the Agency is working to ensure that the updated information on control efficiencies and cost equations is incorporated into the CMDB and CoST for future analyses of the potential for NOx emissions reductions from non-EGU sources. Before incorporating information from the Cost Manual into the CMDB and CoST, EPA staff will evaluate information from the updates to Section 4, Chapters 1 and 2 and compare it to information and cost equations already in the CMDB and CoST. Once staff review is complete, and again because updating the CMDB and CoST requires specific control measure expertise, the EPA will identify and work with an entity that has the appropriate expertise to ensure that any updates are correctly incorporated. This process is expected to take three months and be completed by the end of February 2017.

122. Once the EPA has included the updated information on non-EGU emissions controls in the 2014NEIv1, the Agency intends to conduct analyses of potential NO_X emissions reductions from the various types of non-EGU emissions sources or units using the CoST model.

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post-combustion controls, which does not require significant new capital investment. For more information on EPA's compliance feasibility analysis, see the EGU NO_X Mitigation Strategies Final Rule TSD, Attachment 3.

[28] Available at https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/cost-reports-and-guidance-air-pollution.

The analyses of NO_X emissions reduction potential would likely reflect both estimated emissions reductions from a relatively smaller number of higher NO_X-emitting sources as well as estimated emissions reductions from a much larger number of lower NO_X-emitting sources. With the above improvements and updates to the CMDB, CoST, and the 2014NEIv1, the EPA believes it is important to provide the public and states with an opportunity to review and comment on this analysis in order to ensure we have the most comprehensive and accurate information about controls on emissions sources and the potential for NOx emissions reductions from non-EGU emissions sources. Therefore, the Agency would request comment on a number of data elements, potentially including: (a) appropriate application of and related emissions reductions for certain types of control measures on various emissions sources or units in the EPA's analyses; (b) availability of alternative (i.e., non-end-of-pipe) or emerging NOx control measures or technologies for the various emissions sources or units; (c) availability of upgrades or improvements to NOx control devices, measures or technologies currently on non-EGU emissions sources; (d) current costs for installation, operation, and maintenance of control measures; and (e) installation times for NOx control devices, measures or technologies.

123. While the EPA's EGU data are derived from relatively more accurate and robust data sources (e.g., continuous emissions monitors on many EGUs and data that are reported to both EPA and the Energy Information Agency), because the EPA believes it is necessary to perform this developmental work with respect to non-EGUs, the agency also intends to solicit feedback on the EPA's evaluation of longer-term EGU NO_X reduction potential and cost. Because the CSAPR Update focused on near-term EGU NO_X reductions from EGU emission reduction strategies that could be implemented very quickly (i.e., for the 2017 ozone season), the agency's analysis and notice and comment process for the CSAPR Update was especially

focused on these types of emissions reductions and costs as opposed to the reductions and cost of further EGU NO_X mitigation strategies that would be necessary to fully address the good neighbor provision, such as emission reductions from new SCR systems on uncontrolled or under-controlled EGUs. The agency intended to develop this information in the same time that is already allotted to developing the non-EGU work. The agency believes that providing this EGU data in advance of a proposal is necessary to develop the a technically defensible proposal so that the final rule can follow reasonably from the proposal and comments the EPA receives.

124. There are numerous approaches that the EPA could use to collect additional information on controls and costs for both EGU and non-EGU sources. Typically, given the number of data elements involved and the wide array of commenters likely to provide input, the Agency would consider publishing a notice of data availability (NODA). This would enable commenters to evaluate the data through a defined comment process and ensure the EPA could incorporate all updates to the data prior to issuing a proposed rulemaking to address the remaining interstate transport obligations for the 2008 ozone NAAQS. If, instead, the EPA issued a proposal based on incomplete and inaccurate information, the EPA expects that we would receive significant comments on these data, which would in turn require substantial changes from the proposed rule. If the changes to the proposed rule were sufficiently substantial, the EPA could find it necessary to issue a supplemental proposal based on new analysis before issuing a final rule. Failure to issue a supplemental proposal under such circumstances could result in procedural defects in the promulgation of the final rule and subject the rule to significant legal risk. Even if a supplemental proposal were not ultimately necessary, if the EPA receives significant comments on these data elements in a proposed rule, we would need additional time between proposal and final to incorporate necessary changes into the Agency's emissions

inventories, control strategies, and air quality modeling needed for a final rulemaking. Accordingly, the EPA believes that the time allotted in the EPA's proposed rulemaking schedule for the development and promulgation of a NODA would ultimately save valuable time between proposal and final by reducing the number of significant comments received on a proposed rule and reducing the number of changes that might need to be made between a proposed and final rule.

125. Beyond the efforts described above to collect, compile, and include information from the Agency's regular control measure information updates, as well as the states' reviews of control measure information in the 2014NEIv1, the process to prepare and publish a NODA is expected to take no less than three months from the conclusion of those activities. Over the three months, the EPA would run CoST several times to assess the potential for cost-effective NOx emissions reductions from non-EGU point emissions sources. The EPA would also prepare the appropriate *Federal Register* Notice and data files that support the EPA's analysis and on which commenters would be invited to comment. The EPA estimates that given the amount and complexity of the information about controls, emissions reductions, and costs for the many non-EGU source groups that would likely be part of a NODA, the public should be provided a 90-day period in which to review and prepare comments on the information. From the close of the public comment period, it would likely take three to five months to review, compile, and integrate the information received on the non-EGU emissions control measures received through public comments, depending on the volume of comments received.

126. The steps detailed above are estimated to take between 9.5 to 11.5 months to complete and are summarized as follows: (i) between 2 weeks and 1 month to make updates to the CMDB, CoST, and the 2014 NEIv1; (ii) 3 months to prepare and publish a NODA; (iii) 3

months for a public comment period on the NODA; and (iv) based on the volume and type of comments received, between 3 and 5 months to compile, review, and integrate information from the public comments. The EPA therefore expects that the steps necessary to improve the EPA's data for the evaluation of non-EGU NO_X reduction potential could be completed between September and November of 2017.

iii. Identifying downwind receptors and upwind state contributions

127. As described above at paragraph 83, the first step of the EPA's analysis to calculate a state's emissions reduction obligation pursuant to the good neighbor provision is to identify those downwind areas that are expected to have a problem attaining and maintaining the NAAQS in a future year. The EPA refers to these areas as nonattainment and maintenance "receptors." The second step of the analysis is to determine which upwind states contribute emissions to these downwind areas identified in step 1 and in what amounts. If an upwind state contributes at or above a screening threshold, which has been set in recent rulemakings equivalent to 1 percent of the NAAQS, to a downwind nonattainment or maintenance receptor then that upwind state is determined to be "linked" to that particular receptor. States that are linked to downwind receptors based on the screening threshold are then further evaluated in the third step of EPA's analysis to determine whether the state makes a significant contribution to the receptor(s) to which it is linked. This third step is discussed in more detail at section C.iv.

128. In order to complete both steps 1 and 2 of the EPA's analysis, the EPA must conduct air quality modeling. Air quality modeling is needed to project ozone concentrations in order to identify the extent of expected downwind nonattainment and maintenance problems for the appropriate future analytic year. In addition, air quality modeling is needed to quantify the

contributions from emissions in upwind states to the downwind nonattainment and maintenance problems in this analytic year.

129. The EPA anticipates that we will require 12 months to complete the air quality modeling step before a proposed rule can be issued. Much of this work can occur concurrently with the remaining work to improve the EPA's non-EGU data, and is expected to be completed between January and March 2018. The following table summarizes those steps which are described in more detail in the following paragraphs. The EPA's Gantt chart shows how these steps interrelate with one another and with the other tasks described in this declaration. *See* Attachment 1.

Task	Timeframe	Earliest Target Date
Develop Air Quality Modeling Inputs – Non-Emissions Data	3 months	April 2017
Develop Base and Future Analytic Year Emissions	6 months	October 2017
Run Air Quality Model	3 months	December 2017
Complete Post-Processing of Air Quality Modeling Data	1 month	January 2018

130. As discussed above at paragraph 60, the air quality modeling conducted for the CSAPR Update focused on 2017, but additional emissions reductions will necessarily occur in a later year. Therefore, the EPA must conduct air quality modeling for an appropriate future analytic year for a subsequent rulemaking in order to ensure any additional emissions reductions required from sources in Kentucky or other states do not over- or under-control relative to the downwind air quality problems to which the states are linked.

131. The air quality metric used for determining whether or not a particular monitoring site is violating the ozone NAAQS is referred to as the "design value." The design value is calculated as the three-year average of the 4th highest 8-hour daily maximum ozone concentration in each of the three years (e.g., the design value for 2011 is the average of the 4th highest concentrations in 2009, 2010, and 2011). Monitoring sites with a design value that exceeds the NAAQS are considered to be violating the NAAQS. Whether a monitoring site is a nonattainment and/or a maintenance receptor in the future analytic year depends on whether certain projected design values for that future year exceed the NAAQS.

132. In brief, the procedure for projecting future design values begins with design values based on measured data. The measured design values are projected to the future using model predictions from two air quality modeling scenarios. One scenario simulates ozone concentrations for a base year of emissions and the second scenario simulates ozone concentrations using emissions for the future analytic year. The ratios of future year to base year ozone model predictions applicable to monitoring sites are used to adjust measured concentrations up or down depending on the relative change in model predicted concentrations. EPA's air quality modeling guidance for ozone attainment demonstration modeling[29] recommends using a 5-year weighted average of the measured design values as the starting point for projecting whether or not a monitoring site will be nonattainment in the future. This 5-year weighted average is used in order to lessen the effects of inter-annual variability of meteorological conditions and thereby provide an estimate of future design values under average

[29] *See* Memorandum from Richard Wayland, Division Director, to Regional Air Division Directors, Regions 1-10, "Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze" (Dec. 3, 2014), available at https://www3.epa.gov/ttn/scram/guidance/guide/Draft_O3-PM-RH_Modeling_Guidance-2014.pdf.

conditions. The guidance recommends that the 5-year base period be defined such that the center year corresponds to the time of base year modeling scenario. For example, the average design value that corresponds to a 2011 base year is calculated as the average of the design values in 2011 (i.e., 2009 – 2011), 2012 (i.e., 2010 – 2012), and 2013 (i.e., 2011 – 2013). Thus, these three design values reflect ozone concentrations over the 5-year period 2009 through 2013 with the greatest weighting given to the 2011 base year in this example. In the CSAPR Update, the EPA identified monitoring sites that have projected average design values that exceed the NAAQS and are also violating the NAAQS based on the most recent air quality measurements as future year "nonattainment receptors."

133. In addition to projecting the 5-year weighted average design value, EPA also projects the design values for each of the three design values that comprise the 5-year weighted average (i.e., the 2011, 2012, and 2013 design values). The highest (i.e., maximum) of these three values, as projected to the future analytic year, is used to determine whether or not a receptor is at risk of violating the NAAQS if future meteorological conditions are more conducive to ozone formation than average. Monitoring sites with future *average* design values that are below the NAAQS, but with *maximum* design values above the NAAQS may have a problem maintaining the NAAQS due to meteorological conditions. Such sites are referred to as "maintenance receptors." In addition, monitoring sites that are currently measuring clean data but have future year average design values that exceed the NAAQS, are also considered to be maintenance receptors. The air quality modeling that is used to project future year average and maximum design values for the future analytic year is described below.

134. Once the EPA has identified downwind nonattainment and maintenance receptors, the second step of the analysis requires the EPA to determine which upwind states contribute at

or above the contribution screening threshold to nonattainment and/or maintenance receptors in other states. The evaluation of interstate contributions against the screening threshold is based upon the magnitude of EPA's contribution metric. This contribution metric is calculated using future year contributions based on air quality source apportionment modeling coupled with the future year average design value. The source apportionment modeling involves using an air quality modeling tool that tracks the formation, chemical transformation, and transport of ozone from emissions of nitrogen oxides (NOx) and volatile organic compounds (VOCs) in individual states to those downwind air quality problems.

135. The first step in the air quality modeling process is to develop the air quality modeling inputs. This process includes selecting the appropriate base year and future analytic year, and developing the requisite emissions, meteorology, and other non-emissions air quality modeling inputs for the ozone season, and the base-period design values calculated from measured ozone concentrations. The base year emissions inventory quantifies the amount of pollutants that are emitted from individual sources (e.g., electric generating units) or by county for other source categories (e.g., cars and trucks). The NEI is developed on a three-year cycle (e.g, 2005, 2008, 2011, and 2014 are each NEI years). The base year emissions are projected to the future analytic year by considering (1) the effects of forecast economic changes (i.e., positive and negative growth) based largely on the U.S. Energy Information Administration (EIA) Annual Energy Outlook (AEO) data and (2) the expected reductions in emissions from federal and state "on-the-books" air pollution control programs.[30] Another factor in the selection of the base year is the geographic extent of measured high ozone concentrations indicative of

[30] "On-the-books" rules are finally promulgated state and federal rulemakings that are expected to result in emissions reductions between the base and future analytic year.

meteorological conditions that are conducive to the formation of ozone concentrations close to or above the NAAQS. Since the air quality modeling is being used to identify locations that are expected to have ozone air quality problems in the future as well as to quantify interstate ozone transport it is necessary to model ozone season meteorological conditions from a year that actually had ozone-conducive meteorology. Modeling a year with meteorology that resulted in low ozone concentrations could lead to understating the magnitude and geographic extent of future year ozone problems and interstate contributions and a failure to protect public health and the environment from the harmful effects of ozone that occur when meteorological conditions are conducive for ozone formation.

136. For the CSAPR Update, EPA used a 2011-based emissions inventory for the base year, a projection of this base year inventory to 2017, ozone season meteorology for 2011, and 2009 – 2013 design values, which the Plaintiffs propose the EPA continue to use for subsequent rulemakings, *see* Howekamp Decl. at para. 21. Given that there are now more recent and technically updated base year emissions inventories as well as more recent ozone measurements, it is necessary to reevaluate whether the 2011-based modeling platform is still the most appropriate for analyzing ozone transport or whether EPA should update its modeling platform to utilize data from a more recent time period. This requires consideration of several factors. For example, ozone concentrations declined significantly in many areas of the East in 2013 and 2014, compared to 2010 through 2012. However, despite continued reductions in emissions, ozone concentrations began to rise again in 2015 and 2016. The process for selecting an appropriate modeling platform will involve a comparative evaluation analysis of measured ozone concentrations and the associated meteorological conditions in 2015 and 2016 in terms of the potential for forming and transporting ozone concentrations relative to the concentrations and

meteorology used in the 2011-based platform. A failure to fully consider the appropriateness of a particular modeling platform could lead to projections of future air quality and interstate contributions that are not representative of what may actually be expected to occur in the future year which could lead to over- or under-control of downwind air quality.

137. The analysis of measured ozone concentrations and meteorology and the development of meteorological and other non-emissions inputs for air quality modeling will require 3 months to complete. The process involves creating and evaluating tabular and graphical summaries of measured ozone concentrations in multiple subregions across the U.S. for years that are candidate choices for the modeling platform. In addition, it is necessary to tabulate and review specific meteorological data that influence the formation and transport of ozone (e.g., temperature and air trajectories) for the candidate update years and a comparison to more historical ozone episodes in order to select meteorological periods to model that collectively represent conditions conducive to ozone formation and the multiple interstate transport patterns that are likely to occur in the future. Once the periods for air quality modeling are identified it is necessary to run meteorological models and associated pre-and post-processors to obtain the 3-dimensional meteorological data for input to the air quality modeling.

138. In order to establish the appropriate future analytic year for purposes of the EPA's analysis, including the air quality modeling, the EPA considers several factors related to anticipated compliance timing of the rulemaking. It is essential to consider how best to align the future analytic year with compliance timing in order for the assessment of significant contribution to nonattainment and interference with maintenance to align with the identified air quality challenge. Compliance timing is informed by the D.C. Circuit's decision in *North Carolina*, where the court held that the EPA should align implementation of its interstate

transport rules with a date by which states are required to demonstrate attainment with the applicable NAAQS. 531 F.3d at 911-12. However, the determination as to how to align implementation with the attainment is not ready-made. Rather, the EPA considers several factors including the relevant attainment dates for the NAAQS, timelines necessary for installing appropriate control technologies, whether or not emission reductions preceding the relevant attainment dates (if possible) would further assist downwind areas in demonstrating attainment and maintenance of the NAAQS, or in the event that emission reductions are not feasible by the relevant attainment deadline, what date is as soon as practicable for EPA to require reductions following the relevant attainment deadline.

139. As part of this decision-making process, the EPA considers which emission reduction strategies are feasible to implement when evaluating an appropriate timeframe for compliance. Different EGU and non-EGU control strategies have very different timeframes for implementation. For example, the CSAPR Update found that operating existing post-combustion NO_X controls could be done quickly (i.e., within 7 months) while installation of new post-combustion NO_X controls would require several years for contract, construction, and commissioning. These differences in implementation timing necessitate that the agency evaluate which strategies are appropriate to consider given the timing for compliance and the relevant attainment date. In the CSAPR Update, the EPA limited its analysis of potential NO_X reductions in each upwind state to those that could be feasibly implemented for the 2017 ozone season in order to provide reductions in advance of the July 2018 attainment date. However, as discussed at paragraph 69, we will need to evaluate other control strategies that may require longer timeframes to implement in order to evaluate upwind states' full reduction obligation with respect to the 2008 ozone NAAQS.

140. The EPA does not agree with Plaintiff Sierra Club's contention that 2018 should be designated as the future analytic year simply because the EPA conducted a 2018 analysis using its integrated planning model, which provided one of the inputs for the EPA's air quality modeling for the CSAPR Update. *See* Pl.'s Br. at 19-20. First, Mr. Howekamp, concedes that the EPA will need to choose a future analytic year later than 2017 because additional control strategies cannot be implemented in that timeframe. *See* Howekamp Decl. para. 19. The Plaintiff and Plaintiff-Intervenor have proposed that the EPA can promulgate a final rulemaking by June 2018, but Mr. Howekamp further concedes that additional controls will require up to 18 months to install. *See id.* para. 20. If it were even possible for the EPA to finalize a FIP by that date, considering the timeframes outlined by Mr. Howekamp, additional controls could not be implemented until at least the 2020 ozone season. Accordingly, it might be inappropriate for the EPA to select 2018 as the appropriate future analytic year for the 2008 ozone NAAQS because the EPA might promulgate emissions reductions that would not be implemented until a later year, creating a discontinuity within our analysis. Such discontinuity may result in under- or over-control relative to the later, future compliance year that a Court might find impermissible.

141. These steps, determining which future analytic year and compliance year is appropriate and which emission reduction strategies are available based on that compliance timing, have significant implications for the ultimate scope of the interstate transport obligation. Due to the significance of the decisions and the significant breadth of options that the agency must evaluate, the EPA typically allots between 2 and 3 months to scope options and brief management on these decisions. This work can occur concurrently with the selection of the base year modeling platform and the creation of meteorological and other non-emissions air quality modeling inputs. The majority of this time is allocated to scoping the various combinations of

emission source categories (e.g., large coal-fired EGU, medium sized natural gas-fired EGU, small institutional boiler, large cement plant, emissions from combustion of fuels for energy, process emissions) and emission reduction strategies (e.g., various types of combustion control, selective catalytic reduction post-combustion control, selective non-catalytic reduction post-combustion control, shifting energy production to lower-emitting sources). The EPA must consider not only that there are thousands of emission sources to evaluate, but also that each emission source category has multiple potential

142. Following the process of selecting the appropriate modeling platform and creating meteorological and other non-emissions air quality modeling inputs and selecting an appropriate future analytic year, another 6 months are needed to construct the appropriate base year and future year emissions inventories (the latter of which reflects expected growth in emissions from the base year coupled with the effects of federal and state "on-the-books" control programs). Though work on this step can begin in the spring of 2017, this step cannot be completed until the agency has been able to apply to the modeling inventories the feedback on its non-EGU and EGU cost and NO_X analysis described in paragraphs 122-25, pursuant to which we expect commenters will also submit updates to the base case inventory assumptions. The development of base year emissions includes the review of existing data and the associated methodologies used to calculate these emissions to identify any methodological changes or corrections that might be needed to reduce the uncertainties and potential for errors in the data. Once the base year emissions data are constructed these data are projected to the future analytic year. This step is performed for each source category, individually. Examples of source categories are electric generating units (EGUs), non-EGU industrial point sources, on-road cars and trucks, off-road

equipment (e.g., construction vehicles), railroad locomotives, ships in ports and underway, airport operations, and oil and gas production.

143. Because of the different nature and diversity of the emissions and emissions processes across the range of source categories, there are category-specific, computer-based tools that must be applied to appropriately forecast emissions for each category. For example, the EPA uses the Integrated Planning Model (IPM) to establish a base case future projection of EGU emissions, accounting for the most up to date data and comments received on IPM modeling inputs. The EPA typically updates the IPM model platform annually to account for the most recent available power sector economics projections (e.g., electricity demand forecasts, fuel prices, etc.) available from the Energy Information Administration (EIA). Additionally, the EPA surveys the most recent power sector announcements impacting the electricity generating unit fleet, including gathering the latest available data on power plant construction, modification, or retirement information. This work is necessary to ensure that the base case represents, to the greatest extent possible, an accurate projection of emissions in the base case. Surveying these datasets and making system-wide or unit-level updates in the model generally requires three to four months, which is a component of the time it takes to develop the future year emission inventories for air quality modeling.[31]

144. As noted above, the future year projection process includes the consideration of growth in emissions and the effects of "on-the-books" federal and state control programs. Accordingly, EPA must gather a diverse set of economic and other information to construct

[31] Moreover, Plaintiff's contention that the EPA can save time by selecting 2018 future analytic year because the agency has already conducted an IPM model run for EGUs in 2018, as discussed at paragraph 140, does not account for the EPA's need to develop future year emissions inventories for all other source sectors.

growth factors (i.e., estimates that represent the percent change in emissions between the base year and future year due to expected changes in economic conditions) and information on the emissions reductions at individual sources that are expected to result from specific federal and state air pollution rules. The EPA does not agree with Mr. Howekamp that this complex task can be conducted in only two months' time, *see* Howekamp Decl. para 21, and Mr. Howekamp does not explain the basis for his estimate.

145. Once the EPA has constructed the base and future year emissions inventories, the EPA can begin to conduct the air quality modeling. Air quality modeling to identify nonattainment and maintenance receptors involves three separate model runs for the base year and the future analytic year. Each air quality modeling run can take up to 2 weeks. The first run predicts ozone concentrations for the base year, and the second run predicts ozone concentrations for the future year. Then, in order to project ozone design values for the future analytic year, the model-predicted ozone concentrations from the base-year and future-year air quality model runs are applied in a relative sense to modulate measured design values up or down following the methodologies in EPA's guidance for ozone attainment demonstration modeling, as described below. In addition, the predictions from the base year model run are compared to corresponding measured concentrations as part of a model evaluation process to gain confidence in the ability of the modeling platform to provide a credible representation of ozone formation and transport. A third model run is conducted for the future analytic year using an ozone source apportionment modeling tool. The outputs of this source apportionment model simulation are used to calculate the contributions from each upwind state, as described below.

146. The model runs are performed sequentially in order to include time for quality assurance review of modeling results and possible corrections to inputs which would then require

rerunning the particular simulation before proceeding on to the next run. The gridded hourly concentrations of pollutant concentrations from each model run undergo extensive post-processing, including (1) extracting ozone concentrations from model output files, (2) time-shifting model predictions from Greenwich Mean Time (GMT), which is the native time zone used in air quality model runs, to local standard time, (3) calculating 8-hour ozone concentrations and (4) selecting the maximum daily 8-hour ozone concentrations in each grid cell on each day. The base year predictions are further processed to pair the predictions with the corresponding observed concentrations for use in the model performance evaluation. Base year and future year ozone concentrations are also processed to format these data for input into the Modeled Attainment Test Software (MATS), which is used to combine model predictions with measured base period design values for the purpose of projecting these base period design values to the future analytic year. The future year source apportionment model results are post-processed to prepare the hourly contribution data for calculating the 8-hour contribution metric following the steps described below. The air quality modeling process requires 3 months to complete depending on the availability of shared computer resources and the need to repeat any model runs to account for corrections.

147. After the model runs are complete and the post-processed output files are created, the base year and future year outputs are run through MATS together with measured base period design values to calculate design values for the future analytic year at the location of each monitoring site. The source apportionment modeling outputs are processed in combination with the future year design values to calculate the contribution metric which represents the amount of ozone contribution from each state to the future year design value at each monitoring site. The resulting contributions from each state to each monitoring site are analyzed to cull out the design

values and contributions for the subset of monitoring sites that are identified to be nonattainment or maintenance receptors in the future analytic year. The contributions from each upwind state to each downwind receptor are then evaluated to identify "linkages" in which an upwind state contributes at or above the screening threshold to a downwind receptor. A period of 1 month is required to calculate the future year design values and contribution metric for each monitoring site and to evaluate the results.

148. The total amount of time required to conduct the air quality modeling necessary to inform the development of a proposed rule is 12 months.

149. Plaintiffs appear to concede that the EPA will be required to conduct additional air quality modeling in order to evaluate emissions reductions in a future analytic year, *see* Howekamp Decl. at para. 19, but at the same time assert the EPA can evaluate future emissions reductions in a future year using the air quality assessment tool (AQAT) developed for the CSAPR Update based on the outputs from the Comprehensive Air Quality Model with Extensions (CAMx). AQAT was developed so that the EPA could evaluate the impacts of different levels of emissions controls on downwind air quality in 2017, the analytic year for the CSAPR Update. However, this version of the tool is not calibrated for any time period other than 2017. The version of the AQAT used for the CSAPR Update is calibrated for a relatively narrow range of emission changes from only EGUs and only for 2017. A future year would have different emission levels and a different mix of sources, such that the EPA would need to develop a new version of AQAT for a future compliance period, which Mr. Howekamp appears to concede, *see* Howekamp Decl. at para. 19. Development of a new version of AQAT requires the outputs from new air quality modeling conducted for that future year reflecting the commensurate anticipated emission reductions from mobile sources, EGUs, and non-EGUs.

Even if the EPA could to implement some of the "simple" controls that Plaintiffs contend are available[32], *see* Pl.'s Br. at 19, those controls would be installed in a future year and therefore the EPA would need to evaluate air quality levels in that future year. Accordingly, even if the EPA could use the AQAT tool in some manner, the EPA must still complete the modeling described above in order to identify downwind air quality problems that need to be addressed relative to the 2008 ozone NAAQS in the future compliance year and to identify those upwind states that contribute to these downwind air quality problems at sufficient levels to justify further analysis for potential emission reductions.

iv. Quantifying upwind state obligations

150. Once the EPA has identified downwind air quality problems and upwind states contributing above the screening threshold to those air quality problems, the EPA can then take steps to quantify the amounts of emissions that constitute each upwind state's significant contribution to nonattainment and interference with maintenance of the 2008 ozone NAAQS in other states. This is step 3 of the CSAPR framework described at paragraphs 83, which like the other steps, consists of several stages of complex evaluations, including: identifying NO_X reduction strategies and their associated compliance timing and costs for sources in relevant sectors; assessing NO_X emission reduction potential using various NOx reduction strategies (i.e., tons of emissions reduced); analyzing downwind air quality impacts of such emissions reductions (i.e., improvements in ozone air quality); selecting a level of control by applying the CSAPR multi-factor test; ensuring that emissions reductions do not constitute over-control relative to the downwind air quality problems; and establishing emission limits (e.g., budgets)

[32] As explained at paragraphs 105-108, the EPA disputes that there are readily available emissions reductions "left on the table" by the CSAPR Update.

that represent emissions remaining following the elimination of significant contribution to nonattainment and interference with maintenance of the NAAQS downwind.

151. The EPA anticipates that it will take 5-6 months to complete the elements required by step 3 of the CSAPR framework. Because the EPA needs to evaluate potential emissions reductions from non-EGUs in this step of the analysis, we cannot proceed until the EPA completes the remaining work to improve the EPA's non-EGU data described in section C.ii. However, much of this work can occur concurrently with the air quality modeling described in section C.iii and is expected to be completed by March 2018. The following table summarizes this work which are described in more detail in the following paragraphs. The EPA's Gantt chart shows how these steps interrelate with one another and with the other tasks described in this declaration. *See* Attachment 1.

Task	Timeframe	Earliest Target Date
Evaluate EGU and non-EGU NOx Reductions and Cost	2-3 months	December 2017
Translate NOx Reduction Potential into Emission Limits	1 month	January 2018
Construct Air Quality Assessment Tool	1 month	February 2018
Evaluating the Multi-Factor Test to Establish Full Remedy	1 month	March 2018

152. A key component of step 3 of the CSAPR framework is the multi-factor test, which considers cost, available emission reductions, and downwind air quality impacts to determine the appropriate level of uniform NO_X control stringency that addresses the impacts of interstate transport. This test evaluates these factors to determine the appropriate stopping point for quantifying upwind state obligations to address interstate ozone transport, including whether

the identified downwind ozone problems (i.e., nonattainment or maintenance problems) are resolved. The following paragraphs describe the development of inputs to this test and the application of the test itself.

153. To quantify upwind state obligations, the first step is for EPA to consider the types of emission reduction strategies that can be applied to relevant source sectors and their associated compliance timing and cost. This stage is complex and time consuming given the many types of ozone season NO_X emissions sources (both EGU and non-EGU) that the agency must consider and the many NO_X reduction strategies that are possible for each source category and in each state. As noted at paragraphs 138-39, the compliance timing for emission reduction strategies is informative to the analysis year selected for CSAPR steps 1 and 2. In addition, in CSAPR Step 3, the EPA may also consider whether compliance timing lends itself to single phase implementation or multi-phase implementation of emissions reductions. For example, in the context of the CSAPR Update, EPA found that single phase implementation was appropriate. The CSAPR Update evaluated the 2017 ozone season in its assessment of CSAPR Steps 1 and 2 and the establishment of emission budgets in Step 3.[33] In contrast, the original CSAPR analysis of Steps 1 and 2 resulted in Phase 1 emissions budgets focused on 2012 while EPA also finalized Phase 2 emissions budgets for 2014.[34] In this case, the 2012 emission budgets represented emission levels that were achievable in the near-term and the 2014 emission budgets represented further emission reductions that could be achieved over the longer-term (i.e., installation of new scrubbers to reduce emissions of SO_2 to address fine particulate matter pollution). The EPA

[33] For one state, Arkansas, EPA finalized a separate and less stringent emission budget for the 2017 ozone season as compared to the budgets for the ozone seasons in 2018 and later years.
[34] As noted above, following litigation, CSAPR Phase 1 was implemented starting in 2015 and CSAPR Phase 2 will be implemented starting in 2017.

believes that the robust evaluation of NO_X reduction strategies and their associated compliance timing and cost is essential to promulgating an analytically consistent and legally defensible full remedy FIP for the 2008 ozone NAAQS. As described above, this step in EPA's analysis is anticipated to take two to three months.

154. We note that the CSAPR Update established emission budgets reflecting near-term EGU NO_X reduction potential from actions that could be reasonably implemented within one year (e.g., turning on and optimizing existing post-combustion controls). The agency believes that further EGU and non-EGU NO_X reduction strategies will take longer to implement. These further strategies could include installing new post-combustion SCRs and building new low- or zero-NO_X generation to complement the existing electricity generation fleet. Such activities are anticipated to take longer to implement due to their more complex nature, including procuring land parcels for new generation projects, obtaining permits, construction, connecting to the electricity grid, and integrating with the dynamic electricity market.

155. Once the EPA has identified potential NO_X reduction strategies (e.g., new SCRs on EGUs), the EPA uses this information to organize the strategies into uniform levels of NO_X control stringency represented by uniform cost (e.g., $5,000 per ton). The purpose of this step is to develop data that can be used to apportion responsibility for making necessary total emissions reductions among the multiple upwind states that collectively contribute to the air quality problems identified at downwind receptors. Each level of uniform NO_X control stringency is characterized by a set of pollution control measures and represents an estimated incremental cost per ton of NO_X emissions reduced. The EPA identifies incremental cost thresholds where control technologies are widely available and therefore where the most significant incremental emission reduction potential is expected across the relevant source sector. To evaluate cost, the EPA

develops engineering analyses considering the types of sources to be considered for potential emission control and the types of emission reduction strategies that are available for those sources. For example, in the CSAPR Update, the EPA focused its analysis on EGU controls limited to optimizing existing SCRs, turning on idled existing SCRs and turning on idled existing SNCRs. To establish costs for each of these strategies, the EPA applied engineering analyses (e.g., Sargent and Lundy[35] cost estimators for EGU NO_X controls) to available economic data (e.g., the cost of ammonia, a reagent used to react with NO_X in SCR operation). Following the assignment of cost to individual emission reduction strategies, the agency next develops uniform levels of NO_X control stringency by grouping strategies together based on similarities in cost of control.

156. After establishing uniform levels of NO_X control stringency, the EPA assesses NO_X emission reduction potential (i.e., tons reduced) in each state and across the analytic region for each level of uniform control stringency. Preparing this analysis to develop full remedy FIPs for the 2008 ozone NAAQS will require separate evaluations of NO_X reduction potential from EGUs and non-EGUs.

157. With respect to EGUs, EPA has used the Integrated Planning Model (IPM) to evaluate NO_X reduction potential and to inform interstate transport obligations under the original CSAPR and the CSAPR Update. IPM is a multi-regional, dynamic, deterministic linear programming model of the U.S. electric power sector. It provides forecasts of least-cost capacity expansion, electricity dispatch, and emission control strategies for meeting energy demand and

[35] Sargent and Lundy is an engineering firm EPA contracted with to develop cost and performance models for control options for pollutants, including NO_X.

environmental, transmission, dispatch, and reliability constraints. IPM can be used to evaluate the emissions impacts of levels of uniform NO_X control stringency.

158. To evaluate levels of uniform NO_X control stringency for EGUs, the EPA typically designs a series of IPM assessments that impose increasing cost thresholds representing uniform levels of NO_X controls and tabulates those projected emissions for each state at each cost level. For the CSAPR Update, the EPA imposed cost thresholds of $800, $1,400, $3,400, $5,000, and $6,400 per ton (all in 2011$) of ozone season NO_X. In the CSAPR Update, the EPA referred to such analysis as "Cost Threshold Runs" and the tabulations as "cost curves." The cost curves report the remaining emissions in each state at each cost threshold after the state has made emission reductions that are available up to the particular cost threshold analyzed. These cost-threshold analyses would take between 2 to 3 months to complete to support a proposed rule to address the remaining interstate transport obligations with respect to the 2008 ozone NAAQS, including approximately three to four weeks to run and test each set of cost threshold analyses for initial review and quality assurance, two to three weeks to review and make any necessary updates to the modeling, and another four to five weeks to run the full suite of cost threshold analyses.

159. Next, the EPA develops EGU control requirements that reflect the emission reductions evaluated in the IPM analysis. For the final CSAPR Update rule, the EPA established emission budgets reflecting EGU NO_X reduction potential by using historical state-level NO_X emission rates adjusted by IPM modeled NO_X reduction potential. The final CSAPR Update budget-setting approach for EGUs was developed in a specific context – setting emission budgets that would be implemented in the near-term. Given that the full remedy transport FIP for Kentucky would need to evaluate longer-term NO_X reduction strategies and would be

implemented further in the future after its promulgation, it may be appropriate for the EPA to adjust the budget setting methodology for this different context. As a result, the EPA believes that it is necessary to allocate one month to develop and quality-assure approaches to limit EGU emissions consistent with the requirements of the good neighbor provision. This month is addition to the time needed to develop the EGU cost threshold analysis because the NOx reduction potential identified in that analysis is needed as an input to this phase of developing EGU NO_X limits.

160. With respect to non-EGUs, the EPA has not previously finalized NO_X emissions limitations for these sources under the original CSAPR or the CSAPR Update rulemakings. To evaluate NO_X reduction potential, the EPA would use the CoST tool. As described at paragraph 118, CoST estimates emissions reductions and control costs associated with the application of control devices or measures by matching the devices or measures to non-EGU emissions sources in the NEI. To evaluate levels of uniform NO_X control stringency for non-EGUs, the EPA would run CoST at different cost per ton thresholds and assess resulting reduction potential, similar to the method used to evaluate EGU reduction potential with IPM. As with EGUs, the non-EGU assessment would also consider the form of the obligation that is appropriate (e.g., emissions budgets or rate-based emissions limits). The agency would need to develop a process for translating potential non-EGU NO_X reduction potential into limits on NO_X emissions that reflect remaining emissions after reductions are made. While there is some experience with respect to establishing limits on non-EGU NO_X emissions (e.g., emissions budgets under the NO_X SIP Call and rate-based limits for the reasonably available control technology (RACT) requirements for NO_X), the EPA has not developed such requirements with respect to non-EGU reductions for interstate transport under the good neighbor provision in either CAIR, the original CSAPR, or

the CSAPR Update rulemaking. This work would be concurrent with the IPM analysis of EGUs for the proposal and could begin following the development of baseline future projections that are used for this analysis and also for air quality modeling.

161. Once the EPA has developed a series of potential emissions limitations at ascending levels of NO_X control stringency, represented by the cost thresholds, the EPA must evaluate the impact on the downwind air quality problems identified in the CSAPR framework step 1. To assess downwind air quality impacts for each nonattainment or maintenance receptor identified, the EPA would evaluate the air quality change at that receptor expected from the progressively more stringent upwind EGU and non-EGU NO_X emission limits established for each uniform NO_X control stringency level. This assessment would provide the downwind ozone improvements for consideration and would provide air quality data to be used to evaluate whether such reductions are cost-effective and whether they would constitute under- or over-control relative to the downwind air quality problem.

162. For this assessment, the EPA anticipates using an ozone Air Quality Assessment Tool (AQAT) to estimate the air quality impacts of the EGU and non-EGU NO_X emission limitations on downwind ozone pollution levels for various NO_X emission levels. The ozone AQAT uses simplifying assumptions regarding the relationship between each state's change in NO_X emissions and the corresponding change in ozone concentrations at nonattainment and maintenance receptors to which that state is linked. In order to assess the air quality impacts of the various control stringencies, the EPA would evaluate changes resulting from the application of the EGU and non-EGU emission limitations to all states that are linked to each receptor, as well as the state containing the receptor. Generally, the EPA would evaluate the air quality improvements at each monitoring site for each progressively more stringent EGU and non-EGU

NO_X emissions limitation. For each level of control stringency and for each receptor, the EPA would evaluate the magnitude of the change in concentration using the ozone AQAT and determine whether the estimated concentration would resolve the receptor's nonattainment or maintenance concern by lowering the average or maximum design values below the level of the NAAQS. The EPA would also evaluate the change in each state's contribution to each receptor and evaluate that change against the 1 percent screening threshold.

163. As part of this analysis, the EPA would evaluate potential under- or over-control with respect to whether (1) the expected ozone improvements would be sufficient or greater than necessary to resolve the downwind ozone pollution problem (i.e., resolving nonattainment or maintenance problems) or (2) the expected ozone improvements would reduce upwind state ozone contributions to below the screening threshold (i.e., one percent of the NAAQS). This step is taken to ensure compliance with the Supreme Court's holding, in *EPA v. EME Homer City*, that the "EPA cannot require a State to reduce its output of pollution by more than is necessary to achieve attainment in every downwind State or at odds with the one-percent threshold the Agency has set." 134 S. Ct. at 1608. On remand from the Supreme Court, the D.C. Circuit held that this means that the EPA might overstep its authority "when those downwind locations would achieve attainment even if less stringent emissions limits were imposed on the upwind States linked to those locations." *EME Homer City II*, 795 F.3d at 127. The D.C. Circuit qualified this statement by noting that this "does not mean that every such upwind State would then be entitled to less stringent emission limits. Some of those upwind States may still be subject to the more stringent emissions limits so as not to cause *other* downwind locations to which those States are linked to fall into nonattainment." *Id.* at 14-15. As the Supreme Court explained, "while EPA has a statutory duty to avoid over-control, the Agency also has a statutory

obligation to avoid 'under-control,' *i.e.*, to maximize achievement of attainment downwind." 134 S. Ct. at 1609.

164. The EPA must construct the ozone AQAT tool using data from the CAMx modeling runs described in section C.iii of this declaration. The ozone AQAT assumes that a change in ozone season NO_X emissions leads to a proportional change in downwind ozone contributions. This proportional relationship is then modified using calibration factors created using the base case contribution air quality modeling and a representative control case. To construct a calibrated AQAT, we need two CAMx air quality modeling runs and the associated emission inventories (the base case with source apportionment contributions and a control case where there have been substantial emission reductions). As a result, construction of this tool cannot begin until the air quality modeling, including post-processing, is complete. With the air quality modeling results and emission inventories in hand, AQAT can be constructed in approximately one month.

165. After quantifying available emissions reductions and remaining emissions at each level of control for EGUs and non-EGUs, the EPA evaluates that suite of options to determine the level of control that is appropriate to address significant contribution to nonattainment or interference with maintenance of the NAAQS downwind. Pursuant to the CSAPR framework, the EPA applies a multi-factor test that considers cost, available emission reductions, and downwind air quality impacts to determine the appropriate level of uniform NO_X control stringency that addresses the impacts of interstate transport on downwind nonattainment or maintenance receptors. This test evaluates these factors to determine the appropriate stopping point for quantifying upwind state obligations to address interstate ozone transport, including

whether the identified downwind ozone problems (i.e., nonattainment or maintenance problems) are resolved. This process is expected to take 1 month after the AQAT analysis is complete.

166. The steps to establish EGU and non-EGU emission limits that quantify the full ozone transport remedy for the good neighbor provision with respect to the 2008 ozone NAAQS combine to take between 5 and 6 months. Two of these steps, representing three to four months can occur concurrently with the air quality modeling. However, two months are required, after the air quality modeling is complete to construct the air quality assessment tool and use it to inform the multi-factor test to quantify significant contribution to nonattainment and interference with maintenance of the 2008 ozone NAAQS downwind.

v. Implementation of Emission Reductions: Development of FIPs

167. Once the EPA has quantified the emissions reductions necessary to eliminate states' significant contribution to downwind nonattainment and interference with maintenance, and has converted those reductions into appropriate emissions limitations in step 3 of the CSAPR framework, the emissions limitations must be implemented in a manner that makes them enforceable and ensures that necessary emissions reductions will actually occur. This is referred to as step 4 of the CSAPR framework. As discussed above at paragraphs 6-9, states have the primary responsibility to develop SIPs to implement necessary emission reductions pursuant to CAA section 110(a)(2)(D)(i)(I), but where states fail to develop a plan to satisfy the statutory requirements, the CAA directs the EPA to promulgate FIPs to ensure the statutory requirements are being met. As described at paragraphs 74, the EPA has already determined that Kentucky and 23 other states have failed to satisfy the requirements of the good neighbor provision with respect to the 2008 ozone NAAQS, and the EPA therefore has an obligation to promulgate a FIP

that sets appropriate emissions limitations on sources in those states consistent with the requirements of the good neighbor provision.

168. The emissions limitations that the EPA developed to address states' transport obligations under the NO_X SIP Call, CAIR, and CSAPR have been implemented through allowance trading programs. Under a trading program, each affected source is not subject to a limit on its actual emissions, but instead is subject to requirements to monitor its emissions during each control period and at the end of the control period to surrender allowances equal to its monitored emissions. The emissions reductions are enforced by limiting the total quantities of allowances that are made available to sources. Sources may be required to participate in the trading programs either by the states (through SIP revisions) or through FIP provisions under which the EPA regulates the sources directly. Through the experience gained in implementing several successive trading programs, the EPA has developed a well-established set of trading program rules, and was able to implement the CSAPR Update with only minor changes to the trading program rules already put in place for CSAPR. Similarly, the EPA expects we could implement any further emissions limitations required for EGUs using this well-established approach to ensuring emissions reductions.

169. The EPA is not assuming that the well-established trading program approach for implementing regional emissions limitations for EGUs under the good neighbor provision will necessarily be the most appropriate approach for implementing regional emissions limitations for all types of non-EGUs as well. A primary complication for developing FIPs for non-EGUs as compared to EGUs is defining appropriate emissions monitoring requirements for these sources. Emissions monitoring and reporting are important for ensuring that sources comply with the emissions limitations quantified in step 3 of the CSAPR framework. Many non-EGU

emissions source categories do not have experience with the installation and operation of continuous emissions monitors (CEMs), which are used by EGUs to monitor and report emissions, and many non-EGU sources are not currently required to monitor and report in accordance with 40 CFR Part 75. Monitoring and reporting emissions using CEMs provides direct and accurate information on sources' emissions, which is essential for participation in existing trading programs under CSAPR and the CSAPR Update. Development of alternative approaches to implementing emissions limitations for certain non-EGU source categories will require time to scope potential approaches and prepare options for consideration, including the scoping of practical, legal, and technical feasibility of various approaches, and to brief Agency management to obtain decisions regarding the preferred approach to implementing the emissions limitations. The EPA believes that the development and consideration of these alternative approaches to implementing emissions limitations for the relevant non-EGU source categories can occur concurrent with the other analytical and rule development steps described in sections C.iii and C.iv of this declaration.

D. Administrative Procedures for Rule Development

170. In addition to the time required to conduct the technical analyses described in section C of this declaration, the EPA must complete certain procedural and administrative steps in order to issue a proposed rule addressing our remaining FIP obligation with respect to Kentucky, and to develop a final rule after review and analysis of the public comments received on the proposal. As described in the following paragraphs, the EPA will require an additional 7 months from the conclusion of the technical analysis to sign a notice of proposed rulemaking, and 14 months from the publication of the proposed rule to sign a notice of final action addressing the FIP obligation. The following table summarizes those steps, which are described

in more detail in the following paragraphs. The EPA's Gantt chart shows how these steps interrelate with one another and with the other tasks described in this declaration. *See* Attachment 1.

Task	Timeframe	Earliest Target Date
Proposed Rule Development		
• Brief Senior Management	1-2 months	April 2018
• Develop Preamble, Reg. Text, RIA, and Convene SBREFA Panel	4-5 months	June 2018
• Agency Review of Draft Rule	2 months	August 2018
• Interagency Review of Draft Rule	2 months	October 2018
Proposed Rule Signature		**November 1, 2018**
Publication of Proposed Rule		December 2018
Comment Period		January 2019
Final Rule Analysis		
• AQ Modeling to Identify Receptors and "Linked" States ○ Update Model Inputs (3 months) ○ Run Air Quality Model (3 months) ○ Complete Post-Processing (1 month)	5 months	June 2019
• Establish Full Remedy Emission Limits (four to five months)	4-5 months	July 2019
Final Rule Development		
• Brief Senior Management, Develop Preamble, Reg. Text, RIA, and Response to Comments	5 months	October 2019

Task	Timeframe	Earliest Target Date
• Agency Review of Draft Rule	2 months	November 2019
• Interagency Review of Draft Rule[36]	2 months	January 2020
Final Rule Signature		**February 1, 2020**

171. Throughout the process of developing the technical analyses to identify downwind air quality problems, quantify upwind state contributions, and identify cost-effective emissions reductions, the EPA's senior management must make policy decisions regarding a number of issues that define the scope of the proposed rulemaking. Some decisions can be made, or at least considered, while analyses are underway; however, certain decisions will not be properly informed until the completion of the various steps of the analyses. In particular, the decision-makers must make determinations regarding: the level of control stringency (represented by cost) to require of linked upwind states to address downwind air quality problems and the form of the remedy that will be used to implement the emissions limits resulting from the chosen control stringency. Various other issues may arise in the process of conducting the technical analysis that will also require consideration by senior management, but which will be dependent on the facts and circumstances of the particular rulemaking.

172. Such issues will be raised to senior management in an organized process. First, the staff level workgroup will evaluate the issues and develop various options for addressing each issue, including legal, policy and technical considerations supporting each option. The EPA workgroup includes staff with a wide range of expertise, including engineers, health researchers,

[36] Development a separate Response to Comments document typically continues during interagency review.

attorneys, compliance and enforcement staff, and regional office representatives. Workgroup staff will then prepare briefing papers that explain each issue and the options for addressing the issue, and participate in a series of briefings with various levels of agency management in order to obtain policy direction and decisions. Before final decisions are made, the most significant issues are typically raised to both the Assistant Administrator for the Office of Air and Radiation and to the EPA Administrator. This process will occur throughout the development of the technical analyses and can reasonably be expected to continue 1 to 2 months after the conclusion of the policy analysis previously described.

173. It is worth noting that the upcoming change in Administration on January 20, 2017, will likely require additional internal meetings and other steps to brief new agency decision-makers, for both informational and decision-making purposes, regarding the EPA's history of addressing interstate ozone transport, the nature of the current ozone air quality problems, legal precedent governing the good neighbor provision, and the various policy choices that might be considered. While the EPA has not estimated any particular amount of time that may be required to conduct these additional briefings, the EPA expects that it would not be possible to shorten the time alloted for briefing new senior management given these considerations.

174. Once the senior management has made necessary policy decisions governing the requirements of the proposed rulemaking, the EPA must develop a written record to explain and support the proposed action. This includes the development of a notice of proposed rulemaking including a preamble explaining the legal, policy and technical bases for the proposed action. *See* CAA section 307(d)(3) (requiring the notice of proposed rulemaking to include a statement of basis and purposes summarizing the factual data on which the rule is based, the methodology

used in obtaining the data and in analyzing the data, and the major legal interpretations and policy considerations underlying the proposed rule). The EPA also develops for public comment proposed regulatory text to implement the proposed action and detailed technical support documents that explain the various technical analyses supporting the proposed action. The EPA is also typically required pursuant to Executive Order 13563 to prepare a regulatory impact analysis (RIA) that evaluates the costs and benefits of the proposed action when we promulgate a regional interstate transport rulemaking. This includes preparing further EGU and non-EGU modeling analyses of the selected remedy as well as air quality modeling to estimate the improvements in air quality and evaluating the benefits and co-benefits of such air quality improvements using the Benefits Mapping and Analysis Program (BenMAP). This process can be expected to take 4-5 to five months in total, a portion of which is concurrent with previously discussed analytic and rulemaking activities. However, this step is expected to take 2 to 3 months from the time the final policy decisions are made, particularly to develop RIA analyses of the selected option and alternative options.

175. The EPA is also required to prepare an analysis of the impact of rules that include Federal requirements (e.g., a FIP) on small entities (i.e., businesses, governments, and nonprofit organizations) pursuant to the Small Business Regulatory Enforcement Fairness Act (SBREFA). If EPA cannot certify that there is not a significant economic impact on a substantial number of small entities (or SISNOSE) for the selected remedy, then SBREFA requires the formation of a panel, which is made up of representatives of the EPA, the Small Business Administration (SBA), and the Office of Management and Budget (OMB), to identify ways to potentially mitigate this significant economic impact. The process for panel formation and activities, which includes meetings with representatives of affected small entities, can typically last up to 6

months and must occur in the proposal stage of the rulemaking prior to interagency review. Much of the work to comply with SBREFA can be concurrent with previously discussed rulemaking activities.

176. Once the notice of proposed rulemaking is drafted, it must undergo review both by the workgroup staff and by several levels of EPA management including the Office of General Counsel, and Assistant Administrators for the Office of Air and Radiation and the Office of Policy. The review process is expected to take 2 months total.

177. The EPA's regional interstate transport rulemakings pursuant to the good neighbor provision typically require interagency review, including review by the Office of Management and Budget (OMB), because the rulemakings are considered significant regulatory actions pursuant to Executive Order 12866. OMB review can take up to 3 months.

178. Once OMB review is complete, the Administrator may sign the notice of proposed rulemaking. The EPA estimates that a notice of proposed rulemaking could be signed by November 1, 2018. Upon signature, the signed notice is transmitted to the Office of the Federal Register for publication pursuant to CAA section 307(d)(3). Publication of the notice of proposed rulemaking can take approximately 1 month from the signature of the rule and triggers the start of a public comment period, depending on the length and complexity of the rulemaking and the workload of the Office of Federal Register.

179. The EPA also does not agree that five and a half months is a sufficient amount of time to complete the rulemaking following signature of the proposed rule. As explained at paragraphs 76-81, the EPA has historically needed between 10 and 16 months in order to finalize a rulemaking addressing the regional transport of ozone after a proposal has been published. Although the EPA took only 10 months to finalize the CSAPR Update after the proposal was

published, for the reasons explained in section C.i, the EPA expects that the next regional interstate transport rulemaking will be more complicated, will garner a greater number of comments from a broader array of commenters (e.g., parties interested in controls at non-EGUs), and will therefore require more time to analyze between the proposed and final rules. Accordingly, the EPA estimates that it is more reasonable to permit the EPA an additional 14 months after publication of the proposed rule to sign a notice of final action.

180. The EPA is first required to permit the public an opportunity to provide written comments on a notice of proposed rulemaking pursuant to CAA section 307(d)(5). The EPA is also required pursuant to this section to provide the public with an opportunity to provide an oral presentation at a public hearing. The Federal Register Act requires the agency to provide sufficient notice of a public hearing, which requirement is presumptively satisfied if the EPA provides 15 days' notice. 44 U.S.C. § 1508. Section 307(d)(5) further provides that the EPA must keep the record for the proposed rulemaking open for public comment for 30 days after any public hearing. Accordingly, the EPA should reasonably allow for at least 45 days for public comment on the notice of proposed rulemaking. Given the complexity of the technical analysis and policy requirements of the EPA's rulemakings pursuant to the good neighbor provision, the EPA typically provides a longer comment period so that the public has sufficient time to review and analyze the materials provided with the proposed rulemaking. For the CSAPR Update, for example, the EPA received numerous requests to extend the original 45-day comment period given the technical nature of the rule, and responded by providing provided a total of 60 days to comment on the proposed action.[37]

[37] Commenters were also permitted a total of 80 days to comment on the air quality modeling in advance of the proposed rule via the issuance of a NODA. *See* 80 Fed. Reg. 46,271 (Aug. 4, 2015); 80 Fed. Reg. 52,271 (Aug. 28, 2015) (extending comment period).

181. Once the comment period is closed, the EPA must review the comments received and evaluate whether those comments warrant further analyses or affect the technical analysis or the policy decisions made for purposes of developing the final rule. While some comments that are submitted early during the comment period can be reviewed during the comment period, most commenters make their submissions in the final few days of the comment period. Accordingly, review of the public comments received on the notice of proposed rulemaking largely occurs after the close of the comment period. The EPA typically receives several thousand comments on its rulemakings addressing the good neighbor provision because they garner significant public interest from industry, states, and environmental and public health advocates. For example, the EPA received over 6,700 comments on the CAIR proposal, 42,470 comments on the CSAPR proposal, and 15,449 comments on the CSAPR Update proposal. The EPA must allot at least 3 months to conduct an initial review comments and evaluate potential impacts on the rulemaking.

182. The EPA typically receives a significant number of comments regarding the data inputs underlying the various steps of its technical analysis. The revisions to the data inputs required to respond to these comments will typically result in the need to redo the technical analysis, which in turn often leads to changes to the final parameters of the rule, including which upwind states are subject to the rulemaking and the level of the state budgets finalized in the rule. For example, as a result of comments received during the comment period for the CSAPR Update and other updates to the modeling platforms, the EPA updated the technical analysis, and the update identified 18 fewer receptors in the final rule, one state was removed from the allowance trading program altogether, and the final rule budgets for each state were revised. *Compare* 80 Fed. Reg. 75,706, 75,725-26 (Dec. 3, 2015), *with* 81 Fed. Reg. at 74,533. The EPA

anticipates that we will receive similar comments on its next rulemaking pursuant to the good neighbor provision that could result in changes to the rule geography and the level of the budgets between proposal and final. Accordingly, although the EPA would not need to repeat every step of the analyses described in section C, the EPA must plan for sufficient time to reanalyze each step of the CSAPR framework between proposal and promulgation of a final rule.

183. The EPA expects we must plan for an additional six months in order to take the following steps: (a) update modeling inputs based on comment and conduct updated air quality modeling and contribution modeling to identify downwind air quality problems and upwind contributions, as described in paragraphs 145-47; (b) conduct updated IPM modeling to quantify potential emissions reductions from EGUs; and (c) conduct updated CoST modeling in order to quantify potential emissions reductions from non-EGUs.

184. Once the updated analysis is complete, the EPA will again need to identify issues that require decisions from senior management, identify options for addressing those issues, prepare written briefing materials outlining the issues and options, and brief senior management to obtain the necessary decisions. The EPA will also need to develop final rulemaking materials including a notice of final rulemaking, final regulatory text, and detailed technical support documents detailing the policy analysis underlying the final rulemaking. In addition to these materials, the EPA will need to prepare a response-to-comment document detailing the EPA's response to all significant comments received on the notice of proposed rulemaking, including responses to various policy, legal, and technical issues raised in the comments. The EPA will also need to develop a revised RIA evaluating the policy being finalized. This process can reasonably be expected to take five to six months total, including three months from the conclusion of the technical analysis previously described.

185. Once the notice of final rulemaking is drafted, it must undergo review both by the workgroup staff and by several levels of EPA management including the Office of General Counsel, and the Assistant Administrators for the Office of Air and Radiation and the Office of Policy. The review process is expected to take 2 months total.

186. The EPA also anticipates that we may once again be required to submit the rulemaking to OMB in order to go through interagency review, a process that again can take up to 3 months. Once interagency and OMB review is complete, the Administrator can sign a notice finalizing the rulemaking and promulgating any necessary FIP for Kentucky to address the good neighbor provision as to the 2008 ozone NAAQS. The EPA believes this final step can be expeditiously accomplished by February 1, 2020.

E. 2015 Ozone NAAQS

187. On October 1, 2015, the EPA promulgated a rulemaking strengthening the ground-level ozone NAAQS to 70 ppb, based on extensive scientific evidence about ozone's effects on public health and welfare. 80 Fed. Reg. 65,291 (Oct. 26, 2015). All states are required to submit plans addressing the good neighbor provision with respect to the 2015 ozone NAAQS by October 1, 2018. 80 Fed. Reg. at 65,437. The EPA has an obligation to evaluate whether states have made timely and complete submissions within 6 months of the deadline for any submission of good neighbor SIPs, by April 1, 2019. CAA section 110(k)(1). For those states that made timely and complete SIP submissions, the EPA has an obligation to act on the submission within 12 months of a determination of completeness. CAA section 110(k)(2). For

SIPs timely submitted by October 1, 2018, that means the EPA would have an obligation to approve or disapprove the SIP submissions by no later than April 1, 2020.

188. The EPA will have an obligation to promulgate FIPs addressing the good neighbor provision for states that fall into one of two categories: (1) those states that the EPA finds failed to submit a complete SIP addressing the good neighbor provision with respect to the 2015 ozone NAAQS, and (2) those states for which the EPA disapproves a state's SIP addressing the good neighbor provision with respect to the 2015 ozone NAAQS. These actions will trigger an obligation for the EPA to promulgate a FIP addressing these requirements by no later than two years after the EPA's final action taken for each state. Thus, as early as October 2018, the EPA may take an action that triggers the requirement to promulgate good neighbor FIPs addressing the 2015 ozone NAAQS for certain states.

189. Much of the analytical work necessary to address interstate transport obligations with respect to the 2008 ozone NAAQS is the same work that the EPA will need to conduct to address interstate transport with respect to the 2015 ozone NAAQS. Although the stringency of the standards differs, the type of modeling, data, resources, stakeholder input, and analysis necessary to quantify emissions reduction obligations for sources in upwind states is the same for both NAAQS. The EPA also expects that the types of sources from which emissions reductions would be required to address the good neighbor provision may also be similar or the same. Accordingly, given this overlap in necessary analysis and the forthcoming deadlines to address interstate transport with respect to the 2015 ozone NAAQS, the EPA could address the remaining FIP obligation to address interstate transport with respect to the 2008 ozone NAAQS together with the 2015 ozone NAAQS.

190. The EPA cannot promulgate FIPs to address interstate transport with respect to the 2015 ozone NAAQS prior to the deadline for states' to submit SIPs addressing the good neighbor provision as to that standard, *i.e.* before October 1, 2018, because section 110(c) requires certain prerequisite actions that trigger the EPA's authority to promulgate a FIP, described in paragraphs 7-9. As described in this declaration, the EPA believes that we require until February 1, 2020 to conduct the necessary analysis and rulemaking to promulgate FIPs to address the good neighbor provision with respect to the 2008 ozone NAAQS for Kentucky and other similarly-situated states. This timeframe also accommodates the EPA's interest in efficiently promulgating a rulemaking that addresses interstate transport with respect to the 2015 ozone NAAQS.

191. However, if the EPA were to conduct separate rulemakings to address each standard, limited agency resources would require the EPA to conduct the rulemakings consecutively, rather than concurrently. The EPA would need to duplicate much of the analysis for each separate NAAQS, rather than combine the efforts into one analysis. For example, the EPA would be required to first develop a budget to quantify the remaining obligation for the 2008 ozone standard, that neither over- nor under-controls with respect to that NAAQS consistent with the Supreme Court's holding in *EPA v. EME Homer City Generation*; the EPA would then in a separate rulemaking need to develop a budget to quantify the emissions reduction obligation for the 2015 ozone NAAQS that similarly does not over- or under-control with respect to that standard. Separate rulemakings would likely result in separate compliance timeframes, which would necessitate separate air quality modeling exercises tailored to each compliance deadline. This means that the overall emissions reductions that must be achieved to address interstate transport as to both standards would be significantly delayed. If the EPA

instead conducted a single rulemaking that promulgates FIPs for both standards, we could combine the efforts into one analysis and quantify combined emissions limits to address both standards collectively. This would result in a more efficient use of resources for states developing plans to address both standards and the regulated community which must plan for compliance, and overall emissions reductions that must be achieved to address interstate transport for both standards could be achieved significantly sooner and with a significantly lower expenditure of scarce agency resources.

192. To assist states in their planning to address their interstate transport obligations for the 2015 ozone NAAQS, the EPA has recently conducted air quality modeling which evaluates downwind air quality problems and upwind state contributions based on projections to 2023, which would be the attainment deadline for nonattainment areas classified as Moderate with respect to the 2015 ozone NAAQS. The EPA expects to release this information for comment in the near future. While the EPA expects comments received on this modeling could inform subsequent modeling, the 2023 modeling results may not be appropriate to rely upon for a rulemaking addressing the remainder of the 2008 ozone transport obligations for Kentucky and other states. The EPA may determine that a different base year and future analytic year are more appropriate for evaluating the remaining emission reduction obligations with respect to the 2008 NAAQS, considering the factors discussed at paragraphs 135-141. Accordingly, while this work is a helpful first step to evaluating interstate transport obligations for the 2015 ozone NAAQS, the amount of time required for the EPA to evaluate Kentucky's remaining good neighbor obligation with respect to the 2008 ozone NAAQS, as described in this declaration, is not impacted.

F. Limited Resources and Competing Agency Priorities

193. Plaintiffs' proposed schedule for these actions is further unreasonable because they do not consider the many other important and mandatory tasks that EPA must complete.

194. The EPA's proposed schedule for issuing *Federal Register* notices promulgating a FIP for Kentucky assumes that the EPA could prioritize these actions over other important competing duties and obligations. In reality, the EPA's air program in both OAR and the Regions is currently extremely burdened by a large number of mandatory actions that affect the resources available to develop and promulgate a FIP for Kentucky addressing interstate transport for the 2008 ozone NAAQS. The EPA is already required to complete a large number of regulatory actions in the upcoming year under both statutory and court-ordered deadlines.

195. Meeting all mandatory duties imposed by the CAA with limited resources necessarily requires the EPA to make choices in the prioritization and scheduling of projections. In determining the allocation of resources and the prioritization of particular projects, OAR looks at several factors, including: (1) whether or not a project must be completed by a time certain and the CAA statutory requirements to complete a project or act on a SIP; (2) the environmental and public health impact of proceeding with a particular project compared to other projects; and (3) the amount of resources that would be needed to complete a particular projection. With respect to the prioritization of the actions at issue in this litigation, the EPA must necessarily weigh the importance of other actions underway at the present time.

196. The most recent edition of EPA's unified regulatory agenda—a public, comprehensive report describing regulations under development—listed nearly 80 rulemaking efforts that OAR alone was currently undertaking. Attachment 5 is a list of OAR rulemaking efforts taken from the most recent regulatory agenda. Several of these actions are mandated by

the Clean Air Act or judicial orders or settlement agreements with a range of stakeholders including industry groups, or are necessary for states to be able to complete their own regulatory actions required by the Act. These regulatory efforts are consistent with the EPA's mission to protect human health and the environment, and can require a substantial commitment of time and employee resources. For example, one of the OAR divisions with key responsibilities for developing the FIP sought in this case would be simultaneously developing framework rules for implementing the 2015 ozone NAAQS—an enormous undertaking that includes rules for classifying nonattainment areas and establishing SIP requirements. Even under the best circumstances, EPA cannot simultaneously undertake all the actions related to Agency priorities, and thus as a practical matter must devote greater precedence and resources to some actions while deferring others.

197. The EPA is also particularly busy with respect to SIP actions. In general, the Clean Air Act requires the EPA to take a substantial number of actions with respect to SIPs, year in and year out, on statutorily defined timeframes. Because of the realities of the CAA's cooperative federalism structure and the EPA's limited resources, the Agency has historically received more SIP submissions each year than we resolve, resulting in a so-called "SIP backlog" of state plans awaiting final EPA review. As of December 5, 2016, there were 713 SIP submissions awaiting action by EPA, with states regularly submitting more for review. The EPA has committed significant resources to reduce the SIP backlog, and has been able to reverse the trend so that the Agency now acts on more SIP submissions each year than we receive. In the four most recent fiscal years, for example, the EPA received an average of 366 submissions per year, and was able to annually act on an average of 472 per year—including 539 SIPs in fiscal year 2015 alone. Nevertheless, as of December 5, 2016 there were still 713 SIP submissions

awaiting action by EPA, some of which the Agency is obligated to act upon as a result of statutory deadlines or, as exemplified by the other claims in this very case, pursuant to consent decrees and settlement agreements. These SIP actions regularly require resources not only from the EPA Regional Offices, but also from offices at EPA Headquarters that provide legal, technical, and policy guidance, including those offices involved in the development of EPA's regional interstate ozone transport rulemakings.

G. Requested Schedule

198. The EPA has carefully considered the steps necessary to conduct a rulemaking that addresses our remaining FIP obligation for Kentucky to address the good neighbor provision with respect to the 2008 ozone NAAQS, including the significant technical analysis described in section C and the administrative processes described in section D. Those steps and processes are summarized in a table found at Attachment 1, which demonstrates which actions described in this declaration must precede other actions and which actions can occur concurrently.

199. The EPA believes that this schedule represents the most expeditious timeframe in which we can promulgate a final action that fully addresses the good neighbor provision as to the state of Kentucky that is compliant with the statute and with the numerous court decisions guiding the EPA's actions with respect to addressing transported ozone pollution pursuant to CAA section 110(a)(2)(D)(i)(I). Although not the subject of this claim, this schedule will also permit the agency to address outstanding FIP obligations for up to 23 additional states. Moreover, as described in section E, while not adding additional time to the EPA's projected schedule, the proposed schedule would also provide the agency with the opportunity to address the interstate transport obligations with respect to the 2015 ozone NAAQS in a timely and efficient manner. Any shorter timeframe would not only compromise the technical and legal

defensibility of the EPA's final action, but it would potentially preclude the ability of the agency to promulgate such a holistic rulemaking and significantly delay the potential public health benefits that could be achieved, and be an efficient use of resources for the agency, states, potentially regulated parties, and all other interested stakeholders.

200. In light of these considerations, and considering the EPA's limited resources and competing obligations described in section F of this declaration, the EPA believes that we can expeditiously sign a notice of proposed rulemaking by November 1, 2018, and a notice of final action fully addressing its FIP obligation as to Kentucky's good neighbor obligation with respect to the 2008 ozone NAAQS by February 1, 2020.

I declare under penalty of perjury that the foregoing is true and correct.

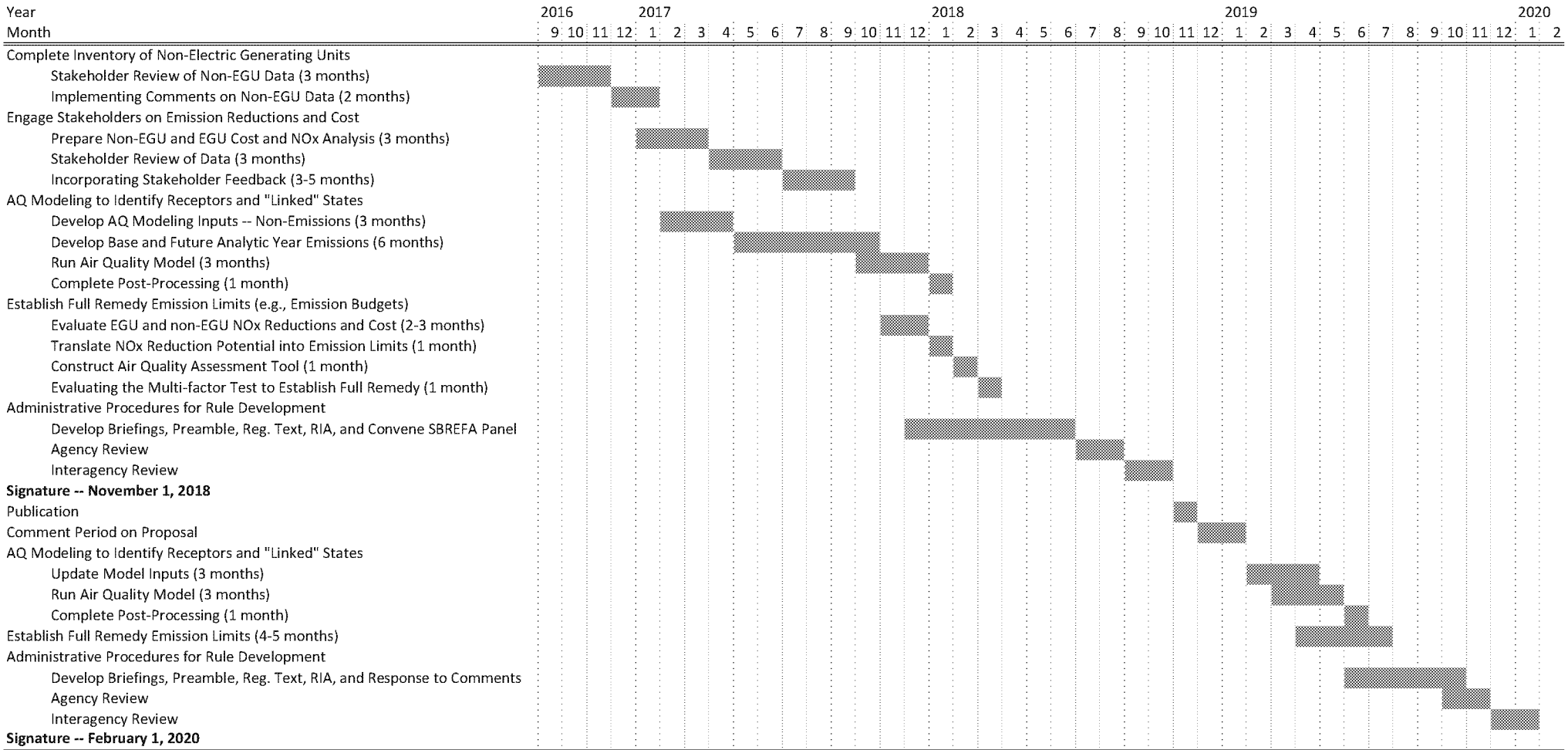
Executed this 15th day of December, 2016.

Janet G. McCabe
Acting Assistant Administrator
Office of Air and Radiation
United States Environmental Protection Agency

Sierra Club v. McCarthy
Case No. 3:15-cv-04328-JD (JSC)

Declaration of Janet G. McCabe
Attachment 1

Proposed Schedule to Address Good Neighbor FIP Obligation for 2008 Ozone NAAQS for Kentucky



The timeframes depicted in this gantt chart reflect the lower end of the ranges that EPA believes are necessary. In other words, this gantt chart reflects each step in the promulgation of the FIP being as expeditious as possible.

Steps associated with the proposed rule are shaded blue

Steps associated with the final rule are shaded green

Sierra Club v. McCarthy
Case No. 3:15-cv-04328-JD (JSC)

Declaration of Janet G. McCabe
Attachment 2

Technical Support Document (TSD)
for the Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS
Docket ID No. EPA-HQ-OAR-2015-0500

Ozone Transport Policy Analysis
Final Rule TSD

U.S. Environmental Protection Agency
Office of Air and Radiation
August 2016

The analysis presented in this document supports the EPA's Final Cross-State Air Pollution Rule Update for the 2008 Ozone National Ambient Air Quality Standards (CSAPR Update). This TSD includes analysis to quantify upwind state emissions that significantly contribute to nonattainment or interfere with maintenance of the 2008 ozone NAAQS in downwind states and quantification of emission budgets (i.e., limits on emissions). The analysis is described in Section VI of the preamble to the final rule. This TSD also broadly describes how the EPA used the Integrated Planning Model (IPM) to inform air quality modeling, budget setting, and policy analysis aspects of this rule. This TSD is organized as follows:

A. Background on EPA's Analysis to Quantify Emissions that Significantly Contribute to Nonattainment or Interfere with Maintenance of the 2008 Ozone NAAQS

B. Using the Integrated Planning Model (IPM) to Assess Air Quality Modeling, Ozone-Season NO_X Cost Thresholds, and Policy Impacts

C. Calculating Budgets From IPM Run and Historical Data

D. Analysis of Air Quality Responses to Emission Changes Using an Ozone Air Quality Assessment Tool (AQAT)

1. Introduction: Development of the assessment tool
2. Details on the construction of the assessment tool
3. Description of analytical results
4. Comparison between the air quality assessment tool estimates and CAMx air quality modeling estimates

A. Background on EPA's Analysis to Quantify Emissions that Significantly Contribute to Nonattainment or Interfere with Maintenance of the 2008 Ozone NAAQS

In the preamble, we describe the four-step CSAPR framework that the EPA is applying to identify upwind states' emissions that significantly contribute to nonattainment or interfere with maintenance with respect to the 2008 ozone NAAQS in other states and to implement appropriate emission reductions. This framework was also used in the original CSAPR rulemaking to address interstate transport with respect to the 1997 ozone NAAQS and the 1997 and 2006 PM2.5 NAAQS. See section IV of the preamble for an overview of the CSAPR framework.

The first step of the CSAPR framework uses air quality analysis to identify nonattainment and maintenance receptors with respect to interstate transport for the 2008 ozone NAAQS. The second step of the framework uses further air quality analysis to identify upwind states whose ozone pollution contributions to these monitoring sites meet or exceed a specified threshold amount of 1% of the NAAQS and therefore merit further analysis. See section V of the preamble for details on applying these steps with respect to interstate emissions transport for the 2008 ozone NAAQS.

The third step in the framework quantifies upwind state emissions that significantly contribute to nonattainment or interfere with maintenance of the 2008 ozone NAAQS at the downwind receptors, and identifies the EGU NO_X emission budgets for each state that represent the reduction of these emissions levels. See section VI of the preamble with respect to interstate emissions transport for the 2008 ozone NAAQS. Finally, the fourth step of the framework implements the emission budgets in each state via the CSAPR NO_X ozone season allowance trading program. See section VII of the preamble for details on implementation of this CSAPR trading program.

This TSD primarily addresses step three of the CSAPR framework, which itself consists of several steps. In order to establish final EGU NO_X emissions budgets for each linked upwind state, we first identify levels of uniform levels NOx control stringency based on available EGU NO_X control strategies and represented by cost thresholds.[1] These levels of uniform NO_X control stringency are modeled in IPM, as described in section B in this TSD for a discussion of this analysis. This data is then combined with historic data in order to quantify a series of potential EGU NO_X emission budgets for each linked upwind state at each levels of uniform NO_X control stringency. Next, we use the ozone Air Quality Assessment Tool (AQAT) to estimate the air quality impacts of the upwind state EGU NO_X emission budgets on downwind ozone pollution levels for each of the assessed EGU NO_X emission budget levels. Specifically, we look at the magnitude of air quality improvement at each receptor at each level of control, we examine whether receptors are "solved", and we look at the individual contributions of each state to each of its receptors. See section D in this TSD for discussion of the development and use of the ozone AQAT.

Finally, the EPA uses this air quality information in a multi-factor test, along with EGU NO_X reductions and cost, to select a particular level of uniform EGU NO_X control stringency that addresses each state's significant contribution to nonattainment and interference with maintenance (see Section VI of the preamble for additional information).

In this TSD, we assessed the EGU NO_X mitigation potential for all states in the contiguous U.S. We also assessed the air quality impacts for all monitors in the contiguous U.S. However, in applying the multi-factor test for purposes of identifying the appropriate level of control, the EPA only evaluated EGU NO_X reductions and air quality improvements from upwind states that were "linked" to downwind receptors in step two of the CSAPR framework. These states are listed in Table A-1 below.

[1] See the EGU NOx Mitigation Strategies Final Rule TSD

As described in preamble section VI, Delaware and the District of Columbia (D.C.) are "linked" to downwind ozone problems but are not included in the final rule. Consequently, EPA did not include Delaware or D.C. in applying the multi-factor test.

Table A-1. States Evaluated in the Multi-factor Test	
Ozone Season NO_X	
Alabama	Missouri
Arkansas	New Jersey
Illinois	New York
Indiana	Ohio
Iowa	Oklahoma
Kansas	Pennsylvania
Kentucky	Tennessee
Louisiana	Texas
Maryland	Virginia
Michigan	West Virginia
Mississippi	Wisconsin

B. Using the Integrated Planning Model (IPM) to Project Impact of Ozone-Season NO_X Cost Thresholds, Budgets, and Policy Impacts

EPA used the Integrated Planning Model (IPM) v5.15 platform to inform air quality modeling for the final rule. IPM was also used to analyze the ozone season NO_X emission reductions available from electric generating units (EGUs) at various uniform levels of NO_X control stringency, represented by cost, in each upwind state. Finally, IPM was used to evaluate illustrative compliance with the rule's regulatory control alternatives (i.e., compliance with the finalized emission budgets, with a more stringent alternative, and with a less stringent alternative).

IPM is a multiregional, dynamic, deterministic linear programming model of the U.S. electric power sector that EPA uses to analyze cost and emissions impacts of environmental policies.[2] All IPM cases for this rule included representation of the Title IV SO_2 cap and trade program; the NO_X SIP Call; the CSAPR regional cap and trade programs;[3] consent decrees and settlements; and state and federal rules as listed in the IPM documentation referenced above. The cases did not include the final Clean Power Plan (CPP), as explained in Preamble section IV.B.

Application of the CSAPR 4-step framework requires robust data collection, IPM modeling, and analysis and is in and of itself time consuming. Rather than freezing all IPM data sets at the outset of EPA's analysis for the final rule, the EPA allowed for ongoing improvement of the relied upon EGU data. As a result, each step of EPA's analysis for the final rule is informed by the best available data at the time the analysis was conducted. For example, after the EPA began its analysis for the final rule, Pennsylvania published its rule addressing requirements for Reasonable Available Control Technologies (RACT) that would result in NO_X emissions reductions during 2017. Rather than ignore a significant new rule the EPA incorporated the rule into its analysis.[4] One factor that enabled the EPA to ensure that each step of its analysis is informed by the best available data is the agency's use of AQAT (as described in section D of this TSD). Within a short period of time, AQAT allows the agency to estimate the changes in air quality design values and air quality contributions as a result of the changes in emissions. For example, EPA was able to estimate the changes in air quality as a result of PA RACT and found that the 19 receptors identified in the final air quality modeling using CAMx

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[2] See "Documentation for EPA Base Case v.5.13 Using the Integrated Planning Model", "EPA Base Case v.5.14 Using IPM Incremental Documentation. March 25, 2015", and "EPA Base Case v.5.15 Using IPM Incremental Documentation. August, 2015," and "EPA v5.15 Supplemental Documentation for the Final CSAPR Update Rule" for further description of the IPM model, available at https://www.epa.gov/airmarkets/power-sector-modeling

[3] The D.C. Circuit issued its final decision in the litigation of CSAPR, remanding 11 states phase 2 NOx ozone season budgets for reconsideration, finding that the budgets over-controlled. *See EME Homer City Generation, L.P. v. EPA*, 795 F.3d 118, 138 (2015) (*EME Homer City II*). In light of this remand, the projected base case for the final rule accounts for compliance with the original CSAPR by including as constraints all original CSAPR emission budgets with the exception of remanded phase 2 NO_X ozone season emission budgets for 11 states. The EPA has also excluded the phase 2 NO_X ozone season emission budgets that were finalized in the original CSAPR supplemental rule for four additional states because those state budgets would over-control in the same manner as the remanded budgets. Specifically, to reflect original CSAPR ozone season NO_X requirements, the modeling includes as constraints the original CSAPR NO_X ozone season emission budgets for 10 states: Alabama, Arkansas, Georgia, Illinois, Indiana, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee.

[4] See the Memo to the Docket "Pennsylvania RACT memo to the docket for the final CSAPR Update" for details about this rule.

remained with design values greater than 76 ppb.[5] EPA also found that each state included in the rule maintained at least one linkage to one of those 19 receptors. EPA recognizes that AQAT is not the equivalent of photochemical air quality modeling using tools such as CAMx. However, AQAT is directly informed by robust CAMx data. Further, AQAT has evolved through iterative development under the original CSAPR, the CSAPR Update proposal, and the final CSAPR Update. One such evolution is its calibration to an emission reduction scenario that is very similar to the final rule NO_X control stringency. As a result, the version of AQAT used for the final CSAPR Update is a reliable analytic tool that is specifically created and calibrated to the policy it is being used to evaluate. To confirm its reliability for these purposes, the EPA used both AQAT and CAMx to evaluate the illustrative policy analysis for the RIA, finding that AQAT provides results that are nearly identical to CAMx. This assessment can be found in section D-4, below.

In the body of power sector modeling done for this rule, the EPA needed to quantify emissions for three different analytic purposes. The first purpose was construct an Air Quality Modeling Base Case to identify nonattainment and maintenance receptors and perform contribution analysis. This base case was necessary given the long lead time required for air quality modeling. This base case incorporated the most important fleet changes and retrofits identified through comments on the August 4, 2015 Notice of Data Availability (NODA)[6] and EPA's continuous review of the power sector.

The second purpose was to construct an illustrative, and internally consistent, base case and control case to study the potential costs and benefits of this rulemaking, as described in the Regulatory Impact Analysis, or RIA, for this rule. This set of cases is referred to as the "Illustrative Cases." To allow time for air quality modeling and analysis of the policy, illustrative budgets were quantified from the Illustrative Cost Threshold Runs. These Illustrative Cases incorporated additional comments from the NODA and the proposal, as well as other modeling updates.

The third purpose was to quantify the final state emission budgets for the rule and to confirm that the results of the illustrative analysis are representative of the final CSAPR Update. This set of cases is referred to as the "Final Cases." For the Final Cases, the EPA conducted a new base case, cost threshold cases, and policy case. This final set of analysis allowed EPA to incorporate the most updated information possible for the calculation of emission budgets in the final regulation.

As a result, while EPA used the same budget quantification approach described in this document in both the Illustrative and Final sets of analysis cases, the quantified results for budgets in each track differ due to minor differences in the modeling projections within each track. Table B-1 below summarizes the various IPM runs conducted and Appendix A provides further details on each of these scenarios.

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[5] For example, EPA was able to estimate the changes in air quality as a result of PA RACT and found that the 19 receptors identified in the final air quality modeling using CAMx remained with design values greater than 76 ppb.

[6] Notice of Availability of the Environmental Protection Agency's Updated Ozone Transport Modeling Data for the 2008 Ozone National Ambient Air Quality Standard (NAAQS), 80 FR 46271 (Aug. 4, 2015). available at http://www.epa.gov/airtransport/pdfs/FR_Version_Transport_NODA.pdf.

Table B-1. Summary of Sets of Scenarios

	Air Quality Modeling Base Case	**Illustrative Cases**	**Final Cases**
Scenarios Run	Base Case	Base Case Cost Threshold Cases Policy Cases	Base Case Cost Threshold Cases Policy Cases
What Analysis Each Set of Runs Inform	Base Case air quality modeling (CAMx) to identify nonattainment and maintenance receptors	Budgets used for the Illustrative Policy Cases Air quality analysis (CAMx and AQAT) of the Illustrative Policy Case Illustrative Policy Analysis for the RIA	Final Budgets AQAT Analysis Appended analysis for the RIA
Updates Captured In Each Set of Runs	Unit retirements, additions and retrofits flagged In NODA comments See "NEEDS v.5.15 AQM CSAPR Update" in the docket for full set of unit level characteristics	Additional comments on the NODA and Proposed Rule Updated certain unit-specific NO_X rates based on historical trends Emission rate of units with SCRs is 0.081 lbs/mmBtu or lower See "NEEDS v.5.15 Illustrative CSAPR Update" in the docket for full set of unit level characteristics	Updated additional NO_X rates based on historical trends Emission rate of units with SCRs is 0.1 lbs/mmBtu or lower See "NEEDS v.5.15 Final CSAPR Update" in the docket for full set of unit level characteristics

For the Illustrative and Final Cases, the EPA modeled the emissions that would occur within each state in a Base Case. The EPA then designed a series of IPM runs that imposed increasing cost thresholds representing uniform levels of NO_X controls and tabulated those projected emissions for each state at each cost level. The EPA has referred to these runs as "Cost Threshold Runs" and these

tabulations as "cost curves".[7] The cost curves report the remaining emissions at each cost threshold after the state has made emission reductions that are available up to the particular cost threshold analyzed.

In each Cost Threshold run, the EPA applied ozone season cost thresholds to all fossil-fuel-fired EGUs with a capacity greater than 25 MW in all states. As described in the EGU NO_X Mitigation Strategies Final Rule TSD, because of the time required to build advanced pollution controls, the model was prevented from building any new post-combustion controls, such as SCR or SNCR, before 2020, in response to the cost thresholds.[8] The modeling allows turning on idled existing SCR and SNCR, optimization of existing SCR, shifting generation to lower-NO_X emitting EGUs, and adding or upgrading NO_X combustion controls in 2017,[9] such as state-of-the-art low NO_X burners (LNB).

In these scenarios, EPA imposed cost thresholds of $800, $1,400, $3,400, $5,000, and $6,400 per ton of ozone season NO_X. See Preamble Section VI for a discussion of how the cost thresholds were determined. Table B-2 below summarizes the reduction measures that are broadly available at various cost thresholds.

Table B-2. Reduction strategies available to EGUs at each cost threshold.

Cost Threshold ($ per ton Ozone-Season NO_X)	Reduction Options
$800	-Optimize extant operating SCRs -generation shifting
$1,400	all above options and - retrofitting state-of-the-art combustion controls -Turning on and optimizing extant idled SCRs -additional generation shifting
$3,400	all above options and -Turning on extant idled SNCRs -additional generation shifting
$5,000	all above options and additional generation shifting
$6,400	all above options and additional generation shifting

[7] These projected state level emissions for each "cost threshold" run are presented in several formats. The IPM analysis outputs available in the docket contain a "state emissions" file for each analysis. The file contains two worksheets. The first is titled "all units" and shows aggregate emissions for all units in the state. The second is titled "all fossil > 25MW" and shows emissions for a subset of these units that have a capacity greater than 25 MW. The emissions in the "all fossil > 25 MW" worksheet are used to derive the budgets for each upwind state at the cost thresholds, in an average year.

[8] IPM results do include certain newly built post-combustion NO_X control retrofits in base case modeling, cost curve runs, and remedy runs. These pre-2020 retrofits do not reflect any controls installed in response to the rule, but instead represent those that are already announced and/or under construction and expected to be online by 2018, or controls that were projected to be built in the base case in response to existing consent decree or state rule requirements.

[9] As described in Preamble Section IV.B, the EPA is aligning the analysis and implementation of this final rulemaking with the 2017 ozone season in order to assist downwind states with the timely attainment of the 2008 ozone NAAQS. As described in Preamble Section V.B.2., EPA adjusted the IPM v5.15 2018 run year results to account for differences between 2017 and 2018 in the power sector, because IPM v5.15 does not have an output year of 2017.

Within IPM, units with extant SCRs are defined as SCR equipped units with ozone season NO_X emission rates less than 0.2 lbs/mmbtu in the Base Case. These units had their emission rates lowered to the lower of their mode 4 NO_X rate in NEEDS[10] and the "widely achievable" optimized emissions rate of 0.081 lbs/mmbtu in the Illustrative Cost Threshold Cases and 0.10 lbs/mmBtu in the Final Cost Threshold Cases.

Units equipped with SCRs with an emissions rate exceeding 0.20 lbs/mmBtu were considered to have idled SCRs. These units had their emission rates lowered to the lower of their mode 4 NO_X rate in NEEDS and the "widely achievable" optimized emissions rate of 0.081 lbs/mmbtu in the Illustrative Cost Threshold Cases of $1,400 per ton and higher, and 0.10 lbs/mmBtu in the Final Cost Threshold Cases of $1,400 per ton and higher.

Units with idled SNCRs were identified as units equipped with SNCR and mode 4 NO_X rates in NEEDS greater than 0.30 lbs/mmbtu. These units were given NO_X rates 25% lower to reflect reflect SNCR operation in Cost Threshold cases of $3,400 per ton and higher.

Finally, unit combustion control configurations listed in NEEDS were compared against Table 3-11 in the Documentation for EPA Base Case v.5.13 Using the Integrated Planning Model IPM v.5.13, which lists state-of-the-art combustion control configurations based on unit firing type. This allowed EPA to identify units that would receive state-of-the-art combustion control upgrades in IPM. EPA then followed the procedure in Attachment 3-1 of the documentation to calculate the each of these unit's new NO_X emission rate.

As described in preamble section VI, the EPA limited its assessment of shifting generation to other EGUs within the same state as a proxy for the amount of generation shifting that could occur for the 2017 ozone season. EPA did this by limiting state generation in each Cost Threshold case to the level in its respective Base Case.

Section C.2 of this TSD describes how budgets were calculated based on each Cost Threshold case. Once these budgets were calculated, EPA used the budgets for covered states to conduct IPM runs to investigate the impact of compliance with the budgets calculated from the $800, $1,400, and $3,400 per ton Cost Threshold Cases. These Cases are referred to as Policy Cases. Specifically, the budgets calculated from the Illustrative $1400 per ton Cost Threshold case were used for the Illustrative Policy Case, and the budgets calculated from the Illustrative $800 and $3400 per ton Cost Threshold cases informed the Illustrative Less- and More-Stringent Policy Cases. Lastly, the budgets calculated from the Final $1400 per ton Cost Threshold case were used for the Final Policy Case. These Policy Cases were used to inform air quality impact analysis of the rule and inform the RIA.

To model the policy cases in IPM, EPA used the calculated budget and assurance levels to set state and regional ozone-season NO_X emissions. Additionally, EPA assumed a starting bank of allowances equal to 21% of the sum of the state budgets. States could individually emit up to their assurance levels in each run year, and collectively could not have emissions exceeding the sum of their budget and banked allowances in each run year. In all policy cases, units with extant operating SCRs were assumed to operate them at the lower of their mode 4 NO_X rate in NEEDS and the "widely achievable" emissions rate, as EPA determined this was a cost-effective mitigation strategy. For all of the Policy Cases except the Illustrative Less Stringent Policy Case, all units with SCRs were assumed

[10] The mode 4 NO_X rate, as described in Chapter 3 of the Documentation for EPA Base Case v.5.13 Using Integrated Planning Model, represents post-combustion controls operating and state-of-the-art combustion controls, where applicable. For units determined to be operating their SCR, the rate is typically equal to the unit's rate reported in the 2011 ETS data. For some units, as described in the EPA v.5.15 CSAPR Update Rule Base Cases Using IPM Incremental Documentation, this data was updated. For units not operating their SCRs, the mode 4 rate is calculated as described in Attachment 3-1 of the Documentation for EPA Base Case v.5.13 Using Integrated Planning Model.

to operate them at the "widely achievable" emissions rate and units that did not already have state-of-the-art combustion controls were assumed to retrofit them. In the Illustrative More Stringent Policy Case, units with idled SNCRs were assumed to operate them. Finally, no state-level generation constraints were imposed in the policy cases. While the EPA conservatively limited generation shifting in developing the budgets, through use of state-level generation constraints, the EPA believes that generation shifting may occur broadly among states and so removed that constraint for the IPM cases modeling the policy.

C. Calculating Budgets From IPM Run and Historical Data

1. Overview of the State Budget Formula

As described in preamble section VI, EPA developed state EGU NO_X emissions budgets for each of the cost thresholds. This section walks through the details of how each state emissions budget was calculated for each cost threshold. As described in Section B of this TSD, the same process was used to calculate two sets of budgets: an Illustrative for analysis of the rule and a Final set for quantifying the final CSAPR Update budgets

As described in Preamble Section VI, the EPA determined it was appropriate to calculate budgets by combining historical emissions and heat input data with projections from IPM. In the proposed rule, the EPA calculated state budgets with the following formula:

State 2017 OS NO_X Budget =
2015 State OS Heat Input * State 2017 IPM OS NO_X Emissions Rate

(note: "OS" stands for Ozone Season, and is equivalent to the "summer" label in some IPM outputs)

EPA intended this formula to root the state emissions budgets in historical data by tying them to state-level historic heat input as opposed to using emission projections that reflect interstate generation patterns that occur in IPM. However, commenters raised a related concern that notwithstanding this approach's use of state-level historic heat input, the model may still project a substantially cleaner generation profile within the state than might be possible to achieve in the relatively short timeframe of this rule. In other words, the proposal's application of an IPM-projected state-level emission rate to historical state-level heat input data could still yield potentially insufficient tons for a state budget if that state's EGUs were to maintain a similar total generation to 2015 but were unable to collectively achieve that projected emission rate by the 2017 ozone season. To address this concern, EPA updated the formula for the final rule to:

State 2017 OS NO_X Budget = 2015 State OS Heat Input *
[2015 $State\ OS\ NO_X\ Emissions\ Rate -$
(2017 $IPM\ Base\ Case\ OS\ NO_X\ Emissions\ Rate -$ 2017 IPM Cost Threshold $OS\ NO_X$ Emissions Rate)]

This formula subtracts the change in emissions rate between the IPM Base Case and a Cost Threshold Case from the actual 2015 emissions rate. This modified approach ensures that state budgets are informed by IPM projections of state-level emission rate *improvement* (change from base case to cost threshold case) while tying that improvement potential directly to observed emission rate performance in 2015.

This change in analytic approach means that unit retirements and retrofits known to occur after 2015 but before 2017, which were automatically captured in the proposal's use of IPM-projected emission rates, now need to be explicitly accounted for in the quantification of state budgets. In the proposal methodology, these fleet changes were captured in the State 2017 IPM Emissions Rate. In the formula above used to quantify budgets in this final rule, these fleet changes between 2015 and 2017 are reflected in both the IPM Base Case Rate and the Cost Threshold Case Rate, such that the effect of these fleet changes on the state-level emission rates cancels itself out. In other words, the degree of

state-level IPM-projected emission rate improvement represented in this formula only captures what EGUs in that state can do to reduce emissions *beyond* the already-known retrofit and retirement changes expected in that state between 2015 and 2017. Accordingly, EPA determined it was necessary to adjust the 2015 State Emissions Rates to account for these known changes, so that the full degree of emission reductions expected in the state by 2017 is captured in the budget. Therefore, the final budget equation is:

$$\textbf{State 2017 Budget} = 2015 \text{ State OS Heat Input} * [Adjusted\ 2015\ OS\ NO_X\ State\ Emissions\ Rate - (2017\ IPM\ Base\ Case\ OS\ NO_X\ Emissions\ Rate - 2017 \text{ IPM Cost Threshold } OS\ NO_X \text{ Emissions Rate})]$$

Finally, EPA notes that in rare instances, it is possible for a state's emission rate to increase in a cost threshold case relative to its base case rate, even if a state's emissions decrease overall. This situation could yield a result greater than the state's 2015 (unadjusted) emissions. This outcome can be due to model-projected regional fuel prices and generation shifting among units. Therefore, EPA assigned state budgets as the lower of the calculated state budget or the state's 2015 (unadjusted) emissions.

2. Detailed Explanation of State Budget Calculations

Below is a detailed walk-through of how the formula for calculating state emissions budgets was applied to each cost threshold run to generate a corresponding budget for each state. For comparison and the purpose of AQAT modeling, this formula was also applied to the Base Case to generate base case "budgets" (alternatively, this could be considered a $0 per ton ozone season NO_X cost threshold run). The budgets calculated from this process for the Final Cost Threshold cases appear in table C-1. The detailed calculations for all Cost Threshold cases appear in Appendix E (Excel spreadsheet).

First, the EPA tabulated each state's 2015 reported historical state-level ozone season heat input and NO_X emissions from affected sources. To capture the emissions impact of committed fleet changes occurring before 2017, the EPA calculated an adjusted 2015 historical ozone-season NO_X emissions level for each state. For units with planned new state-of-the-art SCR retrofits to be in place by the 2017 ozone season, heat input was assumed to match 2015 levels, but the units were given emission rates of 0.075 lbs/mmBtu[11] to reflect the control being in place for 2017 and in lieu of whatever emission rate the unit reported in 2015 (before its SCR was in place). For units with planned combustion control retrofits before 2017, the EPA recalculated emissions for the unit assuming heat input matched 2015 levels and the emission rate was improved to the Mode 4 NO_X Emissions Rate for the unit listed in NEEDS.[12] For units with coal-to-gas conversions planned to occur by the 2017 ozone season, heat input was assumed to match 2015 levels, but the units were given an emissions rate equal to half of its 2015 rate[13] to reflect the NO_X reductions associated with their conversion to gas for 2017.

[11] This is a conservative estimate, based on the floor rates for new SCRs in the IPM documentation, ranging from 0.05 to 0.07 lbs/mmBtu, depending on coal type. See "Documentation for EPA Base Case v.5.13 Using the Integrated Planning Model," table 5-5.

[12] The Mode 4 NO_X Emission Rate reflects the emission rate for a unit if state-of-the-art combustion controls were installed. See NEEDS v5.15 Final CSAPR Update

[13] This is consistent with NO_X rate change used in IPM. See "Documentation for EPA Base Case v.5.13 Using the Integrated Planning Model.", table 5-21.

Lastly, the heat input and emissions for units retiring before 2017 was changed to zero. However, the EPA assumed that the generation from the retiring unit would be replaced by other units. The displaced heat input, which EPA used as a proxy for generation, from these units was assumed to be replaced by generation within the state with an emission rate equal to the state's overall emission rate for the remaining units.[14] This heat input and associated emissions from replacement generation was then added to the state's total, yielding adjusted 2015 historical ozone season heat input and NO_X emissions. With this data, EPA was also able to calculate each state's adjusted 2015 ozone season emissions rate.

Second, the EPA calculated each covered state's 2017 modeled ozone season NO_X emission rate for the base case and each cost threshold. To do this, EPA started with the IPM projected 2018 ozone season heat input and NO_X emissions from affected sources for each state. Next, EPA added an adjustment to account for differences in unit and SCR availability and operation between the IPM run year of 2018 and the expected conditions applicable to calendar year 2017.[15] Appendix C explains the 2017 adjustments and shows the adjustments made by model plant. Lastly, the state-level 2017 emissions rate was calculated as the total 2017 emissions from affected sources within the state, divided by the total 2017 heat input from these sources.

Third, the EPA calculated the change in emissions rate between the IPM base case and each cost threshold case.[16] The EPA then subtracted this change in emissions rate from the adjusted 2015 emissions rate. This yielded state-level historically based emission rates reflecting modeled NO_X reduction potential.

Fourth, the EPA multiplied these rates by each state's adjusted 2015 heat input to yield emission budgets for each cost threshold. In instances where this calculated budget was greater than the state's 2015 (unadjusted) emissions, the state budget was set equal to the state's 2015 (unadjusted) emissions. However, for the budgets finalized in this rule, all states had calculated budgets lower or equal to their 2015 historical emissions. The state budgets for the Final Cost Threshold cases are displayed in table C-1. Note that budgets are calculated for all states for the purpose of AQAT analysis, as explained section D of this TSD, even if the state is not covered by the final CSAPR Update Rule.

Finally, the EPA calculated the variability limits and assurance levels for each state based on the calculated emission budgets. Each state's variability limit is 21% of its budget, and its assurance level is the sum of its budget and variability limit (or 121% of its budget), shown in Table C-2. Under the methodology established in the original CSAPR, the state-specific portion of the new unit set aside (NUSA) (including the Indian Country NUSA) is calculated as the percentage equal to the projected emissions from "planned units" divided by the state budget plus a base two percent. The calculated existing unit allocation and NUSA, including the Indian Country NUSA, for the Final budgets is

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[14] Therefore, the 2015 adjusted heat input for each state is equal to its 2015 reported historical heat input.

[15] Unlike the manner in which the EPA calculated state budgets that were finalized in this rule, the EPA did not include the 2017 emissions and heat input adjustments in the calculating the budgets that were included in the IPM modeling of the Illustrative for Final Policy Cases. This is because the 2017 adjustments are done to account for emissions that are not captured in the IPM 2018 run year, emissions that the model would not need allowances to cover. Including these 2017 adjustments in the budgets modeled in IPM would artificially inflate the state budgets and assurance levels in the model. Therefore, analogous budgets without the 2017 adjustments were calculated for the purpose of modeling in IPM. For the Final Policy Case, this only resulted in a total regional budget difference of 907 tons. The state budgets and assurance levels used in IPM are shown in Appendix E.

[16] The Base Case can be considered equivalent to a $0 per ton cost threshold run, with a corresponding "budget." To calculate the equivalent "budget" for the Base Case using this process, the change in emissions rate for any state is zero. Applied through the rest of the budget calculation process, this means that the base case "budgets" are equal to the adjusted 2015 historical emissions.

shown in table C-3.[17] The variability limits, assurance levels, New Unit Set-Asides and Indian Country New Unit Set-Asides as further described in section VII of the preamble for the final CSAPR Update.

A complicating factor of this analysis was the Pennsylvania RACT (PA RACT) Rule that was finalized in April 2016. The PA RACT Rule will lead to reductions in ozone season NO_X in Pennsylvania, but not have an impact until 2017, the first year the Final CSAPR Rule would be in effect. The EPA determined it was reasonable to not include it in its IPM modeling because it would lead to a budget for Pennsylvania that does not reflect achievable emission reductions by way of applying a regional uniform NO_X control stringency for the 22 CSAPR Update states. In other words, if EPA included PA RACT in the IPM modeling, then Pennsylvania's resulting budget would not be commensurate with other state budgets for the final CSAPR Update. That is because the budget setting methodology uses the change in emissions rate between a Base Case and a Cost Threshold case, and 2015 historical emissions data. Including the PA RACT in the Base Case for this rule would lead to a small change in emissions rates between cases and apply that to historical data that does not reflect the PA RACT Rule. Mixing 2015 historical data that does not reflect the impact of the PA RACT with IPM cases that does reflect the PA RACT would yield budgets that were too large. However, as explained in the Memo to the Docket "The Pennsylvania Additional RACT Requirements for Major Sources of NO_X and VOCs," the EPA found it reasonable to factor the PA RACT requirements into air quality modeling using AQAT, and reflect its costs and emissions reductions in the Illustrative and Final Base Cases and $800 per ton Cost Threshold Cases in the RIA.

As explained in the preamble, the EPA is promulgating EGU NO_X ozone season emission budgets reflecting the uniform cost threshold of $1,400 per ton to reduce significant contribution to nonattainment and interference with maintenance. These budgets were calculated from the Final $1,400 per ton Cost Threshold run.

For the RIA analysis, budgets calculated from the Illustrative $1,400 per ton Cost Threshold run were used for the Illustrative Policy case. Additionally, the RIA includes analysis of the Illustrative Less Stringent policy option, using the budgets from the Illustrative $800 per ton Cost Threshold case, and an Illustrative More Stringent policy alternative, using the budgets from the Illustrative $3,400 per ton Cost Threshold case. The EPA also included additional analysis of the Final Policy case in Appendix 4-A of the RIA.

The IPM runs performed for the cost threshold analyses are listed in Appendix A of this TSD. Table Appendix A-1 lists the name of each IPM run next to a description of the run. The output files of these model runs can be found in the rulemaking docket. Detailed budget calculations for all Cost Threshold cases and the assurance levels used for Policy Cases can be found in Appendix E.

[17] See 'O3 NAAQS CSAPR Update -- NUSA Calculations' (Excel spreadsheet) in the docket.

Table C-1. Calculated Budgets for States for Final Cost Threshold Runs.

State	State Covered by Final CSAPR Update Rule?	Final Base Case	Final $800/ton Cost Threshold	Final $1400/ton Cost Threshold	Final $3400/ton Cost Threshold	Final $5000/ton Cost Threshold	Final $6400/ton Cost Threshold
Alabama	Y	15,179	14,332	13,211	12,620	11,928	11,573
Arkansas[18]	Y	12,560	12,048	9,210	9,048	8,518	8,050
Arizona		10,710	10,680	9,810	9,788	9,710	9,486
California		1,905	1,905	1,905	1,905	1,810	1,810
Colorado		14,010	14,008	13,994	13,645	13,495	12,950
Connecticut		605	584	558	558	554	554
Delaware		497	497	497	494	494	494
Florida		22,779	21,611	17,123	16,631	16,481	16,375
Georgia		8,762	8,495	8,481	8,525	8,532	7,764
Iowa	Y	11,478	11,477	11,272	11,065	10,891	10,491
Idaho		152	152	152	152	152	152
Illinois	Y	14,850	14,682	14,601	14,515	14,248	14,054
Indiana	Y	31,382	28,960	23,303	21,634	19,990	18,720
Kansas	Y	8,031	8,030	8,027	7,975	7,962	7,767
Kentucky	Y	26,318	24,052	21,115	21,007	20,273	19,496
Louisiana	Y	19,101	19,096	18,639	18,452	18,442	18,426
Massachusetts		1,119	1,119	1,112	1,098	1,071	1,072
Maryland	Y	3,871	3,870	3,828	3,308	2,938	2,926
Maine		109	109	109	109	109	109
Michigan	Y	19,811	19,558	16,545	15,298	12,616	12,115
Minnesota		7,068	7,068	6,864	6,761	6,651	6,451
Missouri	Y	18,443	17,250	15,780	15,299	14,673	14,555
Mississippi	Y	6,438	6,438	6,315	6,243	6,203	6,205
Montana		6,540	6,540	6,540	6,535	6,535	6,535
North Carolina		17,419	14,424	14,326	13,189	12,460	12,207
North Dakota		18,738	18,398	18,016	17,655	17,497	17,435
Nebraska		9,737	9,678	8,970	7,197	6,467	6,448
New Hampshire		416	416	416	416	415	415
New Jersey	Y	2,114	2,100	2,062	2,008	1,867	1,879
New Mexico		9,443	9,443	9,055	8,921	8,746	8,650
Nevada		2,405	2,301	2,241	2,112	1,559	886
New York	Y	5,531	5,220	5,135	5,006	4,746	4,594
Ohio	Y	27,382	23,659	19,522	19,165	18,561	18,348
Oklahoma	Y	13,747	13,746	11,641	9,174	8,790	8,439
Oregon		---	---	---	---	---	---
Pennsylvania	Y	35,607	30,852	17,952	17,928	17,621	17,374
Rhode Island		283	283	283	283	283	283
South Carolina		5,486	5,288	5,288	5,293	5,300	5,318
South Dakota		853	853	853	853	853	853
Tennessee	Y	7,779	7,736	7,736	7,735	7,724	7,729
Texas	Y	54,839	54,521	52,301	50,011	48,795	47,994
Utah		16,949	16,949	14,149	13,592	11,356	11,324
Virginia	Y	9,367	9,365	9,223	8,754	8,619	8,416
Vermont		52	52	52	52	52	52
Washington		3,085	3,085	3,085	3,085	3,085	3,085
Wisconsin	Y	7,939	7,924	7,915	7,790	7,435	7,023
West Virginia	Y	26,874	25,984	17,815	17,380	17,388	17,373
Wyoming		16,005	15,828	14,691	13,728	12,371	12,121
CSAPR State Total		**378,641**	**360,900**	**313,148**	**301,415**	**290,228**	**283,547**

[18] The calculated budgets shown in this table for Arkansas correspond to its budget for 2018 and subsequent control periods. As discussed in Preamble Section VI.D, Arkansas's 2017 is 12,048 tons.

Table C.2. State Budgets, Variability Limits, and Assurance Levels for the CSAPR Update Rule.

State	Budget	Variability Limit	Assurance Level
Alabama	13,211	2,774	15,985
Arkansas[19]	12,048 (2017) 9,210 (2018+)	2,530 (2017) 1,934 (2018+)	11,144 (2017) 14, 478 (2018+)
Iowa	11,272	2,367	13,639
Illinois	14,601	3,066	17,667
Indiana	23,303	4,894	28,197
Kansas	8,027	1,686	9,713
Kentucky	21,115	4,434	25,549
Louisiana	18,639	3,914	22,553
Maryland	3,828	804	4,632
Michigan	16,545	3,474	20,019
Missouri	15,780	3,314	19,094
Mississippi	6,315	1,326	7,641
New Jersey	2,062	433	2,495
New York	5,135	1,078	6,213
Ohio	19,522	4,100	23,622
Oklahoma	11,641	2,445	14,086
Pennsylvania	17,952	3,770	21,722
Tennessee	7,736	1,625	9,361
Texas	52,301	10,983	63,284
Virginia	9,223	1,937	11,160
Wisconsin	7,915	1,662	9,577
West Virginia	17,815	3,741	21,556
CSAPR Update Region Total	**313,986 (2017)** **313,148 (2018+)**	**N/A**	**N/A**

[19] As discussed in Preamble Section VI.D, Arkansas's 2017 is 12,048 tons and 9,210 tons in 2018 and subsequent control periods.

Table C-3. Existing unit allocation and NUSA, including the Indian Country NUSA, for the Final CSAPR Update Budgets.

State	Final 2017* EGU NO_X Emission Budgets (tons)	New unit set-aside amount (percent)	New unit set-aside amount (tons)[1]	Indian country new unit set-aside amount (tons)
Alabama	13,211	2	255	13
Arkansas*	12,048/9,210	2/2	240/185	
Illinois	14,601	2	302	
Indiana	23,303	2	468	
Iowa	11,272	3	324	11
Kansas	8,027	2	148	8
Kentucky	21,115	2	426	
Louisiana	18,639	2	352	19
Maryland	3,828	4	152	
Michigan	16,545	4	643	17
Mississippi	6,315	2	120	6
Missouri	15,780	2	324	
New Jersey	2,062	9	192	
New York	5,135	5	252	5
Ohio	19,522	2	401	
Oklahoma	11,641	2	221	12
Pennsylvania	17,952	3	541	
Tennessee	7,736	2	156	
Texas	52,301	2	998	52
Virginia	9,223	6	562	
West Virginia	17,815	2	356	
Wisconsin	7,915	2	151	8

[1] New-unit set-aside amount (tons) does not include the Indian country new unit set-aside amount (tons).
*The EPA is finalizing CSAPR EGU NO_X ozone season emission budgets for Arkansas of 12,048 tons for 2017 and 9,210 tons for 2018 and subsequent control periods.

3. Assessing the Impact of Limiting Inter-State Generation Shifting

As described in preamble section VI, the EPA limited its assessment of shifting generation to other EGUs within the same state as a proxy for the amount of generation shifting that could occur for the 2017 ozone season. The amount of NO_X reductions between the IPM cases that were used to quantify the emission budgets under this assumption can be found in Appendix F. To determine the impact of this assumption, the EPA conducted a separate analysis similar to the $1,400 per ton cost threshold scenario, except without limiting IPM's ability to shift generation between states. EPA calculated budgets from this alternative case and compared them to the final budgets, also shown in Appendix F. This analysis showed that budgets would only be 1,101 tons lower in the CSAPR region compared to the final budgets if the EPA assumed generation shifting was unrestricted between the states, or 0.35% of the sum of the final CSAPR state budgets.

At the state level, 19 of the 22 states had budgets less than 1% different and two additional states had changes of less than 2%, when comparing this alternative case to the approach used in the final rule. One state, Maryland, had an alternative budget 20% lower than its final budget. These results show two things. First, overall, this constraint had minimal impacts on state budgets. Second, in one case, the constraint did significantly impact a state budget, lowering Maryland's budget 20% as generation was shifted out of state. This evaluation supports EPA's determination that it was reasonable to use a conservative estimate of the potential for emissions reductions from generation shifting in the relatively short timeframe of this particular rule by limiting IPM's ability to shift generation among states in the modeling projections to inform state budget quantification.

D. Analysis of Air Quality Responses to Emission Changes Using an Ozone Air Quality Assessment Tool (AQAT)

EPA has defined each linked upwind state's significant contribution to nonattainment and interference with maintenance of downwind air quality using a multi-factor test (described in the preamble at section VI in step three of the CSAPR framework) which is based on cost, emissions, and air quality factors. A key quantitative input for determining the amount of each state's emission reduction obligation is the predicted downwind ambient air quality impacts of upwind EGU emission reductions under the budgets at various levels of NO_X emission control (see in section C of this TSD). The emission reductions under the various levels of emission budgets can result in air quality improvements such that individual receptors drop below the level of the NAAQS based on the cumulative air quality improvement from the states, as well as decrease each upwind state's contributions such that they possibly drop below the 1% threshold that was used to identify the states for further analysis in step 2 of the CSAPR framework.

Direct simulation of air quality in CAMx would be the optimal way to examine these questions at each level of emission budgets. However, time and resource limitations (in particular the amount of time needed to set up, run the CAMx model, and analyze the results for a single model run) precluded the use of full air quality modeling for all but a few emissions scenarios. Therefore, in order to estimate the air quality impacts for the various levels of emission budgets and for the illustrative control alternative, EPA used a simplified air quality assessment tool (AQAT).[20] The simplified tool allows the Agency to analyze many more NO_X emission budget levels than would otherwise be possible. The inputs and outputs of the tool can be found in the "AQAT_final_calibrated.xlsx" excel workbook.

The remainder of section D of this document will:

- Present an introduction and overview of the ozone AQAT;
- Describe the construction of the ozone AQAT; and
- Provide the results of the NO_X emission budget level analyses.

1. Introduction: Development of the ozone AQAT

The ozone AQAT was developed for use in the rule's step three air quality analysis as part of the multi-factor test. Specifically, the AQAT was designed to evaluate air quality changes in response to emissions changes in order to quantify necessary emission reductions under the good neighbor provision and to evaluate potential budgets for over-control as to either the 1% threshold or the downwind receptor status. EPA described and used a similar tool in the original CSAPR to evaluate good neighbor obligations with respect to the fine particulate matter ($PM_{2.5}$) NAAQS and in the proposed CSAPR Update to evaluate good neighbor obligations with respect to ozone. For the CSAPR Update, EPA refined both the construction and application of the assessment tool for use in estimating changes in ozone concentrations in response to changes in NO_X emissions. One important change

[20] EPA used CAMx to model both the base case (i.e., to determine the receptors and the contributions of each state to those receptors) and the final budget policy scenario. The air quality estimates in AQAT were comparable to design values in CAMx for the final illustrative control scenario, suggesting that the air quality estimates for alternative control scenarios performed using AQAT are also reasonable.

between the original CSAPR and this effort is to use AQAT to examine changes in ozone rather than $PM_{2.5}$. We followed the methodology developed in the original CSAPR rulemaking where we calibrate the response of a pollutant using two CAMx simulations at different emission levels.[21,22]

A critical factor in the assessment tool is the establishment of a relationship between ozone season NO_X emission reductions and reductions in ozone. Within AQAT, we assume that the reduction of a ton of emissions of NO_X from the upwind state results in a particular level of improvement in air quality downwind.[23] For the purposes of developing and using an assessment tool to compare the air quality impacts of NO_X emission reductions under various emission budget levels, we determine the relationship between changes in emissions and changes in ozone contributions on a receptor-by-receptor basis. Specifically, EPA assumed that, within the range of total NO_X emissions being considered (as defined by the emission budget levels), a change in ozone season NO_X emissions leads to a proportional change in downwind ozone contributions.[24] This proportional relationship was then modified using calibration factors created using the 2017 base case contribution air quality modeling and the 2017 illustrative control case from the proposal to account for the majority of the nonlinearity between emissions and ozone concentrations.[25] For example, we assume that a 20% decrease in the upwind state's emissions leads to a 20% decrease in its downwind ozone contribution in the

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[21] In CSAPR, we estimated changes in sulfate using changes in SO_2 emissions.

[22] In this rule, we used CAMx to calibrate the assessment tool's predicted change in ozone concentrations to changes in NO_X emissions. This calibration is receptor-specific and is based on the changes in NO_X emissions and resulting ozone concentrations between the 2017 base case and the modeled "illustrative control case" in 2017 from the modeling conducted for the proposed rule. This "illustrative control case" was created during the development of the assessment tool for the proposed rule and is an EGU NO_X ozone-season emission budget sensitivity scenario at $1,300/ton for ozone-season NO_X, reflecting emission reductions from sources in the 23 eastern states that the EPA proposed to regulate under the rule. One intent of this control scenario was to create a calibration point within the range of all emission reductions for the geography examined by EPA using the AQAT. This calibration point was used to create site-specific calibration factors so that the response of ozone concentrations to upwind NO_X emission changes would more-closely align with ozone estimates from CAMx.

[23] This downwind air quality improvement is assumed to be indifferent to the source sector or the location of the particular emission source within the state where the ton was reduced. For example, reducing one ton of NO_X emissions from the power sector is assumed to have the same downwind ozone reduction as reducing one ton of NO_X emissions from the mobile source sector. Because the emission reductions from base case to the 2017 illustrative control case at proposal and the resulting air quality improvements per ton of reduction occur exclusively from the power sector, the calibration factor and thereby calibrated ozone AQAT is tuned to changes in emissions in the power sector.

[24] As noted by EPA at proposal and as stated by commenters, the relationship between NO_X emissions and ozone concentrations is known to be non-linear when examined over large ranges of NO_X emissions (e.g., J.H. Seinfeld and S.N. Pandis, Atmospheric Chemistry and Physics From Air Pollution to Climate Change, 2nd Edition, John Wiley and Sons, 2006, Hoboken, NJ, pp 236-237). However, for some ranges of NO_X, VOC, and meteorological conditions, the relationship may be reasonably linear. In this assessment tool, we are assuming a linear relationship between NO_X emissions and ozone concentrations calibrated between two CAMx simulations. To the extent that the changes in concentrations are the result of small changes in emissions, EPA disagrees with commenters assertions that these relationships are highly nonlinear. The nonlinearities are evident over tens of ppb of ozone changes with tens of percent changes in the overall emission inventories. For most states examined here, under the various control scenarios, most changes in the emission inventory are on the order of a few percent and most air quality changes are on the order of a fraction of a ppb. A significant portion of the nonlinearity is accounted for by using the calibration factor and having the air quality estimates occur at levels of emissions around the base case and the illustrative control case (which were both modeled in CAMx). In the EPA's air quality estimates using the calibrated AQAT, to the extent that uncertainties and non-linearities are present, they are more-likely to be the result of assuming uniform percent changes in statewide emissions, rather than changes in emissions at particular sources.

[25] *See* the Ozone Transport Policy Analysis TSD, EPA-HQ-OAR-2015-0500-0186 and the Ozone AQAT ,EPA-HQ-OAR-2015-0500-0069, both from the prosed rule, for the values and a description of the calibration factors from proposal.

"uncalibrated" ozone AQAT, while it may only decrease by 10% decrease in "calibrated" AQAT (where the calibration factor is 0.5).

The creation of the calibration factors is described in detail in section D.2.c (1).

In summary, because the tool is only being used over a fairly narrow emissions range (for which a calibration factor has been developed), and because other options such as using CAMx to model all scenarios is cost and time-prohibitive, EPA used ozone AQAT to estimate the downwind ozone reductions due to upwind NO_X emission reductions for the air quality input to the multi-factor test for this rule. Other options, such as directly scaling the results (i.e., an "uncalibrated ozone AQAT") will likely greatly overestimate the air quality impacts of emission reductions. The successful comparison of the AQAT estimates with the CAMx results for the $1,400/ton final illustrative control scenario demonstrates that, for the purposes here, the AQAT can sufficiently estimate the air quality impacts of relatively small emission changes.

Section D.2, below, is a technical explanation of the construction of the ozone AQAT. Readers who prefer to access the results of the analysis using the ozone AQAT are directed to section D.3.

2. Details on the construction of the ozone AQAT

(a) Overview of the ozone AQAT

This section describes the step-by-step development process for the ozone AQAT. All of the input and output data can be found in the Excel worksheets described in Appendix B. In the ozone AQAT, EPA links state-by-state NO_X emission reductions (derived from the IPM EGU modeling) with CAMx modeled ozone contributions in order to predict ozone concentrations at different levels of emission budgets at monitoring sites. The reduction in ozone contributions at each level of emissions budgets and the resulting air quality improvement at monitoring sites with projected nonattainment and/or maintenance problems in the 2017 base case were then considered in a multi-factor test for identifying the level of emissions reductions that define significant contribution to nonattainment and interference with maintenance.

In applying AQAT to analyze air quality improvements at a given receptor, emissions were reduced in only those upwind states that were "linked" to that receptor in step 2 of the CSAPR framework (i.e., those states that contributed an air quality impact at or above the 1 percent of the NAAQS). Emissions were also reduced in the state that contained that receptor (regardless of the level of that state's contribution) at a level of control stringency consistent with the budget level applied in upwind states.

Specifically, the key estimates from the ozone AQAT for each receptor are:

- The ozone contribution as a function of emissions at each budget level, for each upwind state that is contributing above the 1 percent air quality threshold and the state containing the receptor.
- The ozone contribution under base case NO_X emissions (i.e., the adjusted historic IPM 5.15 base case, or $0 per ton emission budget), for each upwind state that is not above the 1 percent air quality threshold for that receptor.

- The non-anthropogenic (i.e., background, boundary, biogenic, and wildfire) ozone concentrations. These are assumed to be constant and equal to the contributions from the 2017 final base case source apportionment modeling.

The results of the ozone AQAT analysis for each emission budget level can be found in section D.3 of this document.

(b) Data used to construct the ozone AQAT for this rule

Several air quality modeling and emissions inventory sources were used to construct the calibrated ozone AQAT for this rule. Several data sources from proposal provide the necessary information to construct the calibration factors.[26] Using the calibration factors, EPA modulated the final 2017 CAMx ozone season contributions for each upwind state to each downwind receptor. For each scenario, EPA multiplied each state's percent change in emissions at each emission budget level relative to the 2017 base case ozone season NO_X emission inventories from all source sectors used in the source apportionment CAMx air quality modeling (this includes all anthropogenic sources and excludes biogenic sources and wildfires) by the receptor-specific calibration factor and the state's base case contribution. Note that the change in emissions for each emission budget level is compared with the IPM emission estimates from the base case that was modeled in CAMx. The base case emission inventories for the 2017 base case and the CAMx 2017 base case source apportionment air quality modeling results are discussed in the Air Quality Modeling Technical Support Document for the Final Cross-State Air Pollution Rule Update. The ozone season NO_X EGU emissions for each emission budget level including the base case as modeled in AQAT, are listed in Table D-3 and described in section C of this TSD.

As described in the Air Quality Modeling Technical Support Document for the Final Cross-State Air Pollution Rule Update and the preamble at section V, the air quality contributions and emissions were modeled for all states in the contiguous United States and the District of Columbia. Thus, in the ozone AQAT, any emission differences between the air quality modeling base case and the base case emissions budget scenario or the emission budget cost levels (for linked states) would result in changes in air quality contributions and ozone concentrations at the downwind monitors.[27]

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[26]EPA used the proposal calibration factors, rather than calibration factors based on the final modeling because we found them to have more-representative emission reductions throughout the 22 state geography. The final budget control scenario has smaller emission reductions compared with the proposal budget control scenarios. In addition, for the final modeling, the geographic distribution of emissions changed between the air quality modeling base and $1,400/ton illustrative control cases, leading to calibration factors that seemed to be unusually large or small. The datasets required to construct the calibration factors were: the proposed 2017 base case ozone-season NO_X emission inventories from all source sectors used in the source apportionment CAMx air quality modeling (this includes all anthropogenic sources and excludes biogenic sources and wildfires); the proposed CAMx 2017 ozone-season contributions for each upwind state to each downwind receptor; and the proposed 2017 illustrative control case ozone-season NO_X emissions inventories from all source sectors. An additional dataset, the proposed 2017 ozone concentrations from CAMx for the illustrative control case, was used to compare the ozone AQAT-estimated ozone concentrations for this scenario to the corresponding air quality modeling results, and develop calibration factors to align the response of ozone to changes in NO_X emissions in the ozone AQAT with the response predicted by CAMx. See the Ozone AQAT ,EPA-HQ-OAR-2015-0500-0069 from the proposed rule for the data and results.

[27] Because the illustrative control case does not include emission changes in some upwind states (e.g., states in the western portion of the domain), calibration factors developed for monitors in these states, and any resulting changes in air quality projected by AQAT, may not be representative.

(c) Detailed outline of the process for constructing and utilizing the ozone AQAT

The ozone AQAT was created and used in a multi-step process. First, using the data sets and the AQAT from the proposed CSAPR Update, calibration factors were created. Next, a calibrated ozone AQAT was created using the contributions and emission inventory from the 2017 base case air quality modeling for the final rule. For each emissions budget scenario evaluated, for each state, EPA identified the percent change in anthropogenic NO_X emissions relative to the 2017 base case and multiplied this by the receptor-specific calibration factor as well as by the state- and receptor-specific contribution. This resulted in a state- and receptor-specific "change in contribution" relative to the 2017 base case. Each state's change in contribution value was then added to its 2017 base case contribution and the results summed for all states for each receptor. To this total of each state's contribution to each receptor, the receptor-specific base case contributions from the other source-categories was added, resulting in an estimated design value for each receptor.[28] The calibrated ozone AQAT was used to project the ozone concentrations for each NO_X emission budget level on a receptor-by-receptor basis for every monitor throughout the domain.

In order to facilitate understanding of the calibration process, EPA describes below a demonstrative example used at proposal: monitor number 240251001 in Harford County, Maryland, with a 2017 base case projected ozone average design value of 81.3 ppb and maximum design value of 84.0 ppb, at proposal.

(1) Create the calibration factors

The process for creating the calibration factors remains unchanged from the proposal. Furthermore, EPA used those data sets and retained the same calibration factors used at proposal (i.e., in the remainder of this subsection D.2.c.(1), we refer to data sets from the proposal). To create the calibration factors, EPA used emissions and contributions from proposal to estimate the change in predicted ozone due to NO_X emission reductions under the proposed illustrative control case relative to the proposed 2017 base case.

First, EPA calculated ozone season state-level 2017 base case total NO_X emissions from all source sectors from the proposal. These emissions estimates were used for the proposed rule's CAMx 2017 source apportionment modeling. This emissions data is divided into multiple source sectors for the purposes of air quality modeling: power sector point, non-power sector point, non-point, onroad, nonroad, C3 marine, alm, and fires (see the Emissions Inventory TSD from the proposed rule for additional details on the emissions inventories used in the CAMx air quality modeling).[29] The state-level total NO_X emissions are the sum of emissions from all these source sectors. Next, EPA calculated the ozone season 2017 total NO_X emissions across all source sectors for the illustrative control case. EPA calculated the ratio of the emissions for the illustrative control case to the total emissions for the base case for each state modeled in CAMx. More information on the emissions inventories can be found in the preamble to the proposed rule and in the August 4, 2015 Notice of Data

[28] Details on procedures for calculating average and maximum design values can be found in the Air Quality Modeling Technical Support Document for the Final Cross-State Air Pollution Rule Update.

[29] "Technical Support Document (TSD) Preparation of Emissions Inventories for the Version 6.2, 2011 Emissions Modeling Platform", available at www.epa.gov/ttn/chief/emch/2011v6/2011v6_2_2017_2025_EmisMod_TSD_aug2015.pdf

Availability, or NODA.[6] The total emissions data and resulting ratios from the proposal can be found in Table D-1.

For each monitor, the "uncalibrated" change in concentration from proposal was found by multiplying the 2017 base case ozone contribution by the difference in the ratio of emissions. The difference in the ratio of emissions was calculated as the difference in total ozone season NO_X emissions between the illustrative control case and the 2017 base case scenario divided by the 2017 base case emission. Thus, when the illustrative control case had smaller emissions than the base case, the net result was a negative number. The change in concentrations summed across all states was the total "uncalibrated" change in concentration.

Table D-1. From the Proposed Rule, the 2017 Base Case and 2017 Illustrative Control Case Ozone Contributions (ppb) for Monitor Number 240251001 in Harford County, Maryland, as well as Total NO_X Emissions from all Source-Sectors (tons) for Each State.

State/Source	2017 Base Case Ozone Contributions	2017 Base Case NO_X Emissions	2017 Illustrative Control Case NO_X Emissions	Ratio of Illustrative Control Case Emissions to Base Case Emissions	Difference between the Illustrative Control Case Emissions and Base Case Emissions as a Fraction of Base Case Emissions	Estimated 2017 Contribution of Ozone (Uncalibrated Ozone AQAT)
AL	0.4053	88,805	85,721	0.97	-0.03	-0.01
AZ	0.0958	71,906	71,906	1.00	0.00	0.00
AR	0.2264	69,737	69,039	0.99	-0.01	0.00
CA	0.1106	236,322	236,322	1.00	0.00	0.00
CO	0.1942	90,756	90,756	1.00	0.00	0.00
CT	0.011	17,672	17,672	1.00	0.00	0.00
DE	0.1559	7,786	7,786	1.00	0.00	0.00
DC	0.7334	2,252	2,252	1.00	0.00	0.00
FL	0.1141	177,514	177,513	1.00	0.00	0.00
GA	0.3035	103,536	103,526	1.00	0.00	0.00
ID	0.0349	27,893	27,893	1.00	0.00	0.00
IL	0.672	148,178	147,770	1.00	0.00	0.00
IN	1.8904	139,133	127,487	0.92	-0.08	-0.16
IA	0.1933	70,467	70,045	0.99	-0.01	0.00
KS	0.285	79,939	79,513	0.99	-0.01	0.00
KY	1.973	106,830	97,311	0.91	-0.09	-0.18
LA	0.2597	173,330	172,886	1.00	0.00	0.00
ME	0.0005	17,576	17,576	1.00	0.00	0.00
MD	24.619	46,029	45,312	0.98	-0.02	-0.38
MA	0.0037	35,369	35,369	1.00	0.00	0.00
MI	0.8339	131,486	124,374	0.95	-0.05	-0.05
MN	0.1142	89,328	89,332	1.00	0.00	0.00
MS	0.1596	54,832	54,706	1.00	0.00	0.00
MO	0.5299	101,035	99,736	0.99	-0.01	-0.01
MT	0.0688	38,504	38,504	1.00	0.00	0.00
NE	0.1569	70,005	70,005	1.00	0.00	0.00
NV	0.0279	28,192	28,192	1.00	0.00	0.00
NH	0.0009	8,932	8,932	1.00	0.00	0.00
NJ	0.4374	52,743	52,031	0.99	-0.01	-0.01
NM	0.1688	65,263	65,263	1.00	0.00	0.00
NY	0.4009	109,910	107,416	0.98	-0.02	-0.01
NC	0.4684	98,064	91,850	0.94	-0.06	-0.03
ND	0.0848	74,118	74,118	1.00	0.00	0.00
OH	4.0022	160,110	150,516	0.94	-0.06	-0.24
OK	0.4683	131,763	129,215	0.98	-0.02	-0.01
OR	0.0232	40,507	40,507	1.00	0.00	0.00
PA	6.0769	174,664	147,166	0.84	-0.16	-0.96
RI	0.0006	5,845	5,844	1.00	0.00	0.00
SC	0.1097	55,897	55,846	1.00	0.00	0.00
SD	0.0587	22,192	22,192	1.00	0.00	0.00
TN	0.7044	85,759	85,693	1.00	0.00	0.00
TX	1.0563	467,245	465,179	1.00	0.00	0.00
UT	0.0942	66,486	66,486	1.00	0.00	0.00
VT	0.0015	5,473	5,473	1.00	0.00	0.00
VA	5.3016	87,754	87,514	1.00	0.00	-0.01
WA	0.0327	75,833	75,833	1.00	0.00	0.00
WV	2.9988	64,839	53,954	0.83	-0.17	-0.50
WI	0.2178	75,047	75,035	1.00	0.00	0.00
WY	0.2063	68,864	68,864	1.00	0.00	0.00
TRIBAL	0.0436	26,717	26,717	1.00	0.00	0.00
CNMX	0.7368			1.00	0.00	0.00
OFFSHORE	0.4494			1.00	0.00	0.00
FIRE	0.3074			1.00	0.00	0.00
ICBC	16.652			1.00	0.00	0.00
BIOG	6.0915			1.00	0.00	0.00

Next, the estimate of the monitor specific ozone responses under the illustrative control case was used to calibrate the ozone AQAT to CAMx and to derive the calibration factor. First, the changes in ozone predicted by the ozone AQAT and CAMx for the average design values were calculated for each monitor for the illustrative control case relative to the 2017 base case concentrations. The change in ozone predicted by CAMx was then divided by the change in ozone predicted by the uncalibrated AQAT, resulting in a monitor-specific calibration factor (see Table D-2 for an example calculation). The calculation of these monitor-specific calibration factors provided EPA with the ability to align the ozone response predicted by the ozone AQAT to the ozone response predicted by CAMx at a level of NO_X reductions that EPA expected to be close to the range of all emission reductions examined by EPA for the final rule.

The ozone AQAT and CAMx concentration differences from proposal can be found in the "ozone_AQAT.xlsx" excel workbook on worksheet "2017 contributions uncalibrated" in columns BN and BO, respectively.[25] The resulting calibration factor from the proposal can be found in column BP of the aforementioned excel worksheet.

Following the completion of the AQAT analysis and modeling of the $1,400/ton level of the budget control scenario in CAMx, EPA was able to calculate updated calibration factors using the differences in concentrations and emissions between the base case and budget control cases. EPA examined all of the AQAT estimates for receptors using the final calibration factors and did not observe differences that would have resulted in substantive changes in the application of the multi-factor test (i.e., the status of receptors remained unchanged, either attainment, nonattainment, or maintenance at each emission budget level).

A comparison of the calibrations is shown in Figure 1, for the receptors in the rule (left panel) and overall, for all receptors in the eastern US (right panel). During the course of this analysis, EPA noticed, for some monitors (generally ones that were not nonattainment and/or maintenance receptors in the base case and often were located in the western US) that the final calibration factors led to nonintuitive results. In part, this may be a result of changes in the EGU emission estimates between the initial base case CAMx modeling and the final budget scenarios (particularly for states that are not in the geography of the final rule). Consequently, EPA elected to continue its use of the calibration factors from the proposal.[26] Using the calibration factors from the proposal in the creation of the final calibrated AQAT also enabled EPA to evaluate the AQAT estimates for the final rule by comparing them to the final air quality modeling of the illustrative budget control scenario since this air quality modeling was not used in the creation of AQAT (*see* section D.4 of this document for details of this comparison).

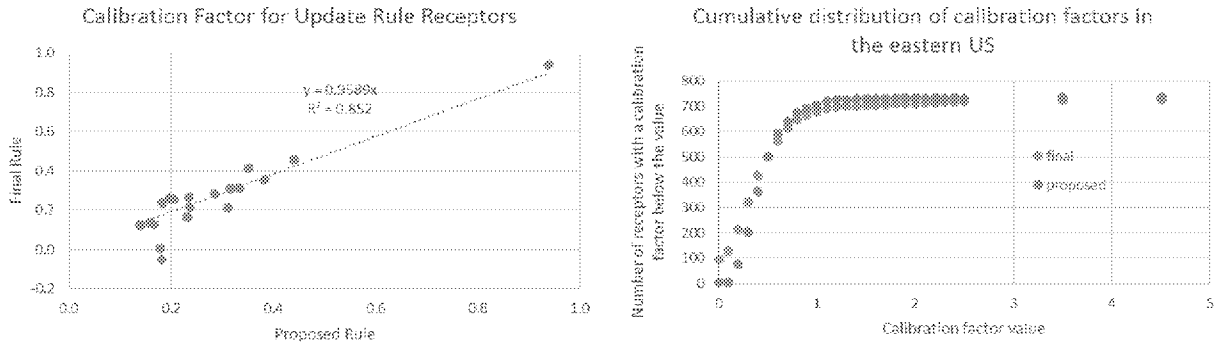

Figure 1. (left panel) A comparison of the calibration factors from the proposed and final rule. (left panel) A cumulative distribution, showing the number of monitors that have calibration factors below a particular value.

Table D-2. From the Proposal, Ozone Contributions in the 2017 Base Case and 2017 Illustrative Control Case Calibration Scenario from CAMx and Uncalibrated Ozone AQAT for Monitor Number 240251001 in Harford County, Maryland (See Table D-1). These Values are then Used to Create a Calibration Factor.

	2017 Base Case Ozone Concentration (ppb)	Estimated 2017 Illustrative Control Case Calibration Scenario Ozone Concentration (ppb)	Estimated Change in Concentration
CAMx	81.369	80.469	-0.900
Ozone AQAT	81.369	78.803	-2.566
Calibration Factor – Change in Concentration from CAMx Divided by Change in Concentration from the Ozone AQAT			0.3508

(2) Create a calibrated version of the ozone AQAT for emission budget analysis for the final rule

Next, EPA used 2017 base case emissions and 2017 base case air quality ozone contributions from the final rule air quality modeling along with the calibration factors from the proposal to create a "calibrated" AQAT for the final rule. EPA examined the changes in the final rule contributions from changes in emissions relative to the final rule base case emissions (while using the calibration factor). This calibrated AQAT was then used to estimate the change in predicted ozone due to NO_X emission reductions under each emission budget level evaluated.

First, as described above in section C of this TSD, EPA identified various levels of emissions budgets based on projected changes in emissions rates and adjusted historic data. For each state, the EGU emissions examined in AQAT are presented in Table D-3 (some additional columns as well as some minor differences in emissions can be found compared with the budgets in Tables C.1 and C.2). In all emission budget simulations, the contributions for all states were adjusted to the adjusted historic level or to an emission budget level using IPM.[30] For this assessment, because the emissions from all other sectors are constant, the EPA focused only on the differences in EGU emissions between each cost threshold[31] and the 2017 base case used in the modeling (see Table D-4 for the emission differences).[32] Finally, for each emission budget level, EPA calculated the ratio of the emission differences to the total NO_X emissions for the 2017 base case used in the air quality modeling for each state modeled in CAMx (see Table D-5).[33]

[30] For Pennsylvania, this included an adjustment to reflect the estimated impact of the PA RACT Rule, as described in the Memo to the Docket "The Pennsylvania Additional RACT Requirements for Major Sources of NO_X and VOCs."

[31] For Pennsylvania, the EPA used cost thresholds adjusted to reflect the PA RACT.

[32] We note that the total ozone-season NO_X emissions from the IPM outputs used in the assessment tool air quality analysis and the EGU emissions used in the CAMx air quality modeling were slightly different (i.e., some EGU emissions are apportioned to different sectors in the emission inventory used in CAMx). However, within ozone AQAT, because the difference in emissions were consistently calculated using IPM's "all fossil >25 MW", the resulting air quality estimates are not affected.

[33] The total emissions from all anthropogenic sources (excluding Biogenics and Fires), coinciding with the emissions that were "tagged" in the source-apportionment modeling.

For each emission budget level analyzed, on a receptor-by-receptor basis, the emissions change for each upwind state is associated with one of two emission budget levels (either the adjusted historic base case emission level or the particular threshold cost level) depending on whether the upwind state is "linked" to that receptor or if the receptor is located within the state. States that are contributing above the air quality threshold (i.e., greater than or equal to 1 percent of the NAAQS) to the monitor, as well as the state containing the monitor, make NO_X emission reductions available at the particular emission budget level. The emissions for all other states are adjusted to the adjusted historic base case level.

For the $1,400/ton final illustrative control alternative for the RIA, all states were adjusted to the emission levels in the illustrative control case, regardless of whether the state was "linked." These scenarios examine the emission results when budgets have been applied to the geography. This scenario was modeled in CAMx allowing a comparison with the AQAT estimates.

For each monitor, the predicted 2017 change in contribution of ozone from each state is calculated by multiplying the state-specific 2017 base case ozone contributions from the final air quality modeling by the calibration factor as well as by the ratio of the change in emissions (Table D-5, for either the emission budget level or the adjusted historic base case emission budget level adjusted for PA RACT depending on whether the state is linked, to the total 2017 base case emissions for all sectors used in the air quality modeling (*see* Table D-4 for the emission differences)).[34] This calibrated change in ozone is then added to the ozone contribution from the 2017 base case final air quality modeling. The result is the state and receptor specific "calibrated" total ozone contribution after implementation of the emission budgets at a particular level of control.

For each monitor, these state-level "calibrated" contributions are then summed to estimate total ozone contribution from the states to a particular receptor in the CAMx modeling domain. Finally, "other" modeled ozone contributions ("TRIBAL", "CNMX", "OFFSHORE", "FIRE", "ICBC", and "BIOG") are added from the 2017 base case final air quality modeling to the state contributions to account for other sources of ozone affecting the modeling domain. The total ozone from all the states and "other" contributions equals the average design values estimated in the assessment tool. The maximum design values were estimated by multiplying the estimated average design values by the ratio of the modeled 2017 base case maximum to average design values.

Generally, as the emission budget stringency increased, the estimated average and maximum design values at each receptor decreased. In the assessment tool, the estimated value of the average design value was used to estimate whether the location will be out of attainment, while the estimated maximum design value was used to estimate whether the location will have problems maintaining the NAAQS. The area was noted as having a nonattainment or maintenance issue if either estimated air quality level was greater than or equal to 76 ppb.

[34] The change in concentration can be positive or negative, depending on whether the state's emissions are larger or smaller than the 2017 air quality modeling base case emission level.

Table D-3. 2017 Ozone Season EGU NOx Emissions (Tons) for Each State at Various Emission Budget Levels (Tons) as Modeled in AQAT.

	Air Quality Modeling Base Case	Final Base Case $0/ton Emission Budgets	Final Base Case $0/ton Emission Budgets with PA RACT	Final $800/ton Emission Budgets	Final $1400/ton Emission Budgets	Final $3400/ton Emission Budgets	Final $5000/ton Emission Budgets	Final $6400/ton Emission Budgets	Final $1,400/ton Illustrative Scenario AQ Model
Alabama	10,902	15,179	15,179	14,332	13,211	12,620	11,928	11,573	8,521
Arkansas	9,890	12,560	12,560	12,048	9,210	9,048	8,518	8,050	6,862
Arizona	8,328	10,710	10,710	10,680	9,810	9,788	9,710	9,486	7,766
California	1,624	1,905	1,928	1,905	1,905	1,905	1,810	1,810	1,626
Colorado	13,426	14,010	14,010	14,008	13,994	13,645	13,495	12,950	13,434
Connecticut	387	605	605	584	558	558	554	554	386
Delaware	155	497	497	497	497	494	494	494	155
Florida	24,617	22,779	22,779	21,611	17,123	16,631	16,481	16,375	24,374
Georgia	11,120	8,762	8,762	8,495	8,481	8,525	8,532	7,764	8,840
Iowa	11,127	11,478	11,478	11,477	11,272	11,065	10,891	10,491	10,729
Idaho	15	152	152	152	152	152	152	152	16
Illinois	13,252	14,850	14,850	14,682	14,601	14,515	14,248	14,054	14,130
Indiana	40,223	31,382	31,382	28,960	23,303	21,634	19,990	18,720	26,047
Kansas	11,257	8,031	8,031	8,030	8,027	7,975	7,962	7,767	9,416
Kentucky	27,500	26,318	26,318	24,052	21,115	21,007	20,273	19,496	18,535
Louisiana	9,824	19,101	19,101	19,096	18,639	18,452	18,442	18,426	9,877
Massachusetts	939	1,119	1,119	1,119	1,112	1,098	1,071	1,072	961
Maryland	3,218	3,871	3,871	3,870	3,828	3,308	2,938	2,926	3,509
Maine	188	109	109	109	109	109	109	109	188
Michigan	21,415	19,811	19,811	19,558	17,023	15,782	13,110	12,612	17,524
Minnesota	9,710	7,068	7,068	7,068	6,864	6,761	6,651	6,451	8,596
Missouri	15,836	18,443	18,443	17,250	15,780	15,299	14,673	14,555	18,125
Mississippi	7,793	6,438	6,438	6,438	6,315	6,243	6,203	6,205	7,498
Montana	7,151	6,540	6,540	6,540	6,540	6,535	6,535	6,535	7,212
North Carolina	19,713	17,419	17,419	14,424	14,326	13,189	12,460	12,207	19,469
North Dakota	14,392	18,738	18,738	18,398	18,016	17,655	17,497	17,435	11,557
Nebraska	12,196	9,737	9,737	9,678	8,970	7,197	6,467	6,448	12,195
New Hampshire	140	416	416	416	416	416	415	415	140
New Jersey	1,776	2,114	2,114	2,100	2,062	2,008	1,867	1,879	1,731
New Mexico	5,626	9,443	9,443	9,443	8,834	8,633	8,367	8,219	5,735
Nevada	3,597	2,405	2,405	2,301	2,241	2,112	1,559	886	3,339
New York	4,275	5,531	5,531	5,220	5,135	5,006	4,746	4,594	3,783
Ohio	27,038	27,382	27,384	23,659	19,522	19,165	18,561	18,348	18,434
Oklahoma	16,718	13,747	13,747	13,746	11,641	9,174	8,790	8,439	14,642
Oregon	-	---	0	---	---	---	---	---	-
Pennsylvania	39,987	35,607	20,200	17,514	15,452	15,428	15,121	14,874	14,461
Rhode Island	180	283	283	283	283	283	283	283	180
South Carolina	5,839	5,486	5,486	5,288	5,288	5,293	5,300	5,318	5,824
South Dakota	537	853	853	853	853	853	853	853	537
Tennessee	6,944	7,779	7,779	7,736	7,736	7,735	7,724	7,729	7,129
Texas	56,331	54,839	54,839	54,521	52,301	50,011	48,795	47,994	54,345
Utah	21,618	16,949	16,949	16,949	14,149	13,592	11,356	11,324	21,616
Virginia	2,586	9,367	9,367	9,365	9,223	8,754	8,619	8,416	2,858
Vermont	0	52	52	52	52	52	52	52	0
Washington	136	3,085	3,085	3,085	3,085	3,085	3,085	3,085	136
Wisconsin	6,488	7,939	7,939	7,924	7,915	7,790	7,435	7,023	6,548
West Virginia	26,110	26,874	26,874	25,984	17,815	17,380	17,388	17,373	16,298
Wyoming	11,216	16,005	16,005	15,828	14,691	13,728	12,371	12,121	11,290

* EPA analyzed all segments of the PA RACT Rule. For the EGU sector, this was primarily a cap on emission rates at coal EGUs with SCRs (12,848 tons), but also included a number of less impactful provisions on EGU emission rates (59 tons). This results in 12,907 tons of reduction from EGU PA RACT. These EGU PA Ract reductions are only included in the PA estimates for the final base case $0/ton emission budgets with PA RACT and the final $800/ton emissions budgets cases. A separate 2,500 tons of reductions from non-EGU PA RACT is included in the PA estimates for all cases except the air quality modeling base case, the final base case, and the final $1,400/ton illustrative scenario AQ model.

Table D-4. 2017 Ozone Season EGU NO_X Emission Differences (Thousand Tons) for Each State Relative to the Air Quality Modeling Base Case Emission Level as Modeled in AQAT.

	Total Antro-pogenic NO_X	Final Base Case	Final Base Case $0/ton Emission Budgets	Final Base Case $0/ton Emission Budgets with PA RACT	Final $800/ton Emission Budgets	Final $1400/ton Emission Budgets	Final $3400/ton Emission Budgets	Final $5000/ton Emission Budgets	Final $6400/ton Emission Budgets	Final $1,400/ton Illustrative Scenario AQ Model
Alabama	88.3	-0.5	4.3	4.3	3.4	2.3	1.7	1.0	0.7	-2.4
Arizona	67.3	-2.4	2.4	2.4	2.4	1.5	1.5	1.4	1.2	-0.6
Arkansas	68.1	0.0	2.7	2.7	2.2	-0.7	-0.8	-1.4	-1.8	-3.0
California	210.4	0.0	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.0
Colorado	89.3	0.0	0.6	0.6	0.6	0.6	0.2	0.1	-0.5	0.0
Connecticut	17.5	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0
Delaware	7.7	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.0
District of Columbia	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Florida	173.9	-0.2	-1.8	-1.8	-3.0	-7.5	-8.0	-8.1	-8.2	-0.2
Georgia	105.2	-2.3	-2.4	-2.4	-2.6	-2.6	-2.6	-2.6	-3.4	-2.3
Idaho	28.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Illinois	146.0	1.3	1.6	1.6	1.4	1.3	1.3	1.0	0.8	0.9
Indiana	136.8	2.0	-8.8	-8.8	-11.3	-16.9	-18.6	-20.2	-21.5	-14.2
Iowa	73.4	-0.2	0.4	0.4	0.3	0.1	-0.1	-0.2	-0.6	-0.4
Kansas	109.0	-0.4	-3.2	-3.2	-3.2	-3.2	-3.3	-3.3	-3.5	-1.8
Kentucky	95.9	-4.2	-1.2	-1.2	-3.4	-6.4	-6.5	-7.2	-8.0	-9.0
Louisiana	168.9	0.2	9.3	9.3	9.3	8.8	8.6	8.6	8.6	0.1
Maine	17.8	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0
Maryland	44.7	0.4	0.7	0.7	0.7	0.6	0.1	-0.3	-0.3	0.3
Massachusetts	35.4	0.0	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0
Michigan	121.9	-0.9	-1.6	-1.6	-1.9	-4.4	-5.6	-8.3	-8.8	-3.9
Minnesota	89.5	-1.1	-2.6	-2.6	-2.6	-2.8	-2.9	-3.1	-3.3	-1.1
Mississippi	54.4	-0.2	-1.4	-1.4	-1.4	-1.5	-1.6	-1.6	-1.6	-0.3
Missouri	100.9	4.8	2.6	2.6	1.4	-0.1	-0.5	-1.2	-1.3	2.3
Montana	37.4	0.0	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	0.1
Nebraska	68.2	0.0	-2.5	-2.5	-2.5	-3.2	-5.0	-5.7	-5.7	0.0
Nevada	27.9	-0.2	-1.2	-1.2	-1.3	-1.4	-1.5	-2.0	-2.7	-0.3
New Hampshire	8.9	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.0
New Jersey	49.8	0.0	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0
New Mexico	66.2	0.0	3.8	3.8	3.8	3.2	3.0	2.7	2.6	0.1
New York	106.3	-0.1	1.3	1.3	0.9	0.9	0.7	0.5	0.3	-0.5
North Carolina	97.0	0.7	-2.3	-2.3	-5.3	-5.4	-6.5	-7.3	-7.5	-0.2
North Dakota	65.8	-2.8	4.3	4.3	4.0	3.6	3.3	3.1	3.0	-2.8
Ohio	148.7	3.1	0.3	0.3	-3.4	-7.5	-7.9	-8.5	-8.7	-8.6
Oklahoma	124.7	-0.2	-3.0	-3.0	-3.0	-5.1	-7.5	-7.9	-8.3	-2.1
Oregon	40.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pennsylvania	165.2	-5.0	-4.4	-19.8	-22.5	-24.5	-24.6	-24.9	-25.1	-25.5
Rhode Island	5.9	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
South Carolina	56.4	-0.1	-0.4	-0.4	-0.6	-0.6	-0.5	-0.5	-0.5	0.0
South Dakota	22.3	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.0
Tennessee	87.5	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.2
Texas	435.5	-0.4	-1.5	-1.5	-1.8	-4.0	-6.3	-7.5	-8.3	-2.0
Utah	62.8	0.0	-4.7	-4.7	-4.7	-7.5	-8.0	-10.3	-10.3	0.0
Vermont	5.4	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Virginia	81.6	0.2	6.8	6.8	6.8	6.6	6.2	6.0	5.8	0.3
Washington	76.1	0.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	0.0
West Virginia	65.9	0.3	0.8	0.8	-0.1	-8.3	-8.7	-8.7	-8.7	-9.8
Wisconsin	74.2	0.1	1.5	1.5	1.4	1.4	1.3	0.9	0.5	0.1
Wyoming	65.8	0.1	4.8	4.8	4.6	3.5	2.5	1.2	0.9	0.1

* EPA analyzed all segments of the PA RACT Rule. For the EGU sector, this was primarily a cap on emission rates at coal EGUs with SCRs (12,848 tons), but also included a number of less impactful provisions on EGU emission rates (59 tons). This results in 12,907 tons of reduction from EGU PA RACT. These EGU PA Ract reductions are only included in the PA estimates for the final base case $0/ton emission budgets with PA RACT and the final $800/ton emissions budgets cases. A separate 2,500 tons of reductions from non-EGU PA RACT is included in the PA estimates for all cases except the air quality modeling base case, the final base case, and the final $1,400/ton illustrative scenario AQ model.

Table D-5. 2017 Ozone Season EGU NOx Emission Fractions for Each State Relative to the Air Quality Modeling Base Case Emission Level as Modeled in AQAT.

	Final Base Case	Final Base Case $0/ton Emission Budgets	Final Base Case $0/ton Emission Budgets with PA RACT	Final $800/ton Emission Budgets	Final $1400/ton Emission Budgets	Final $3400/ton Emission Budgets	Final $5000/ton Emission Budgets	Final $6400/ton Emission Budgets	Final $1,400/ton Illustrative Scenario AQ Model
Alabama	-0.0056	0.0485	0.0485	0.0389	0.0262	0.0195	0.0116	0.0076	-0.0270
Arizona	-0.0351	0.0354	0.0354	0.0349	0.0220	0.0217	0.0205	0.0172	-0.0084
Arkansas	0.0000	0.0392	0.0392	0.0317	-0.0100	-0.0124	-0.0201	-0.0270	-0.0445
California	0.0000	0.0013	0.0014	0.0013	0.0013	0.0013	0.0009	0.0009	0.0000
Colorado	0.0001	0.0065	0.0065	0.0065	0.0064	0.0024	0.0008	-0.0053	0.0001
Connecticut	0.0000	0.0125	0.0125	0.0113	0.0098	0.0098	0.0096	0.0096	0.0000
Delaware	0.0000	0.0445	0.0445	0.0445	0.0445	0.0441	0.0441	0.0441	0.0000
District of Columbia	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Florida	-0.0013	-0.0106	-0.0106	-0.0173	-0.0431	-0.0459	-0.0468	-0.0474	-0.0014
Georgia	-0.0214	-0.0224	-0.0224	-0.0250	-0.0251	-0.0247	-0.0246	-0.0319	-0.0217
Idaho	0.0000	0.0049	0.0049	0.0049	0.0049	0.0049	0.0049	0.0049	0.0000
Illinois	0.0089	0.0109	0.0109	0.0098	0.0092	0.0087	0.0068	0.0055	0.0060
Indiana	0.0143	-0.0646	-0.0646	-0.0824	-0.1237	-0.1359	-0.1479	-0.1572	-0.1036
Iowa	-0.0025	0.0048	0.0048	0.0048	0.0020	-0.0008	-0.0032	-0.0087	-0.0054
Kansas	-0.0032	-0.0296	-0.0296	-0.0296	-0.0296	-0.0301	-0.0302	-0.0320	-0.0169
Kentucky	-0.0440	-0.0123	-0.0123	-0.0360	-0.0666	-0.0677	-0.0754	-0.0835	-0.0935
Louisiana	0.0011	0.0549	0.0549	0.0549	0.0522	0.0511	0.0510	0.0509	0.0003
Maine	0.0000	-0.0044	-0.0044	-0.0044	-0.0044	-0.0044	-0.0044	-0.0044	0.0000
Maryland	0.0081	0.0146	0.0146	0.0146	0.0136	0.0020	-0.0063	-0.0065	0.0065
Massachusetts	0.0005	0.0051	0.0051	0.0051	0.0049	0.0045	0.0037	0.0038	0.0006
Michigan	-0.0075	-0.0132	-0.0132	-0.0152	-0.0360	-0.0462	-0.0681	-0.0722	-0.0319
Minnesota	-0.0124	-0.0295	-0.0295	-0.0295	-0.0318	-0.0329	-0.0342	-0.0364	-0.0124
Mississippi	-0.0031	-0.0249	-0.0249	-0.0249	-0.0272	-0.0285	-0.0292	-0.0292	-0.0054
Missouri	0.0472	0.0258	0.0258	0.0140	-0.0006	-0.0053	-0.0115	-0.0127	0.0227
Montana	0.0006	-0.0164	-0.0164	-0.0164	-0.0164	-0.0165	-0.0165	-0.0165	0.0016
Nebraska	0.0000	-0.0361	-0.0361	-0.0369	-0.0473	-0.0733	-0.0840	-0.0843	0.0000
Nevada	-0.0072	-0.0428	-0.0428	-0.0465	-0.0487	-0.0533	-0.0732	-0.0973	-0.0092
New Hampshire	0.0000	0.0309	0.0309	0.0309	0.0309	0.0309	0.0308	0.0308	0.0000
New Jersey	-0.0001	0.0068	0.0068	0.0065	0.0057	0.0047	0.0018	0.0021	-0.0009
New Mexico	0.0004	0.0576	0.0576	0.0576	0.0484	0.0454	0.0414	0.0392	0.0016
New York	-0.0011	0.0118	0.0118	0.0089	0.0081	0.0069	0.0044	0.0030	-0.0046
North Carolina	0.0072	-0.0236	-0.0236	-0.0545	-0.0555	-0.0672	-0.0748	-0.0774	-0.0025
North Dakota	-0.0422	0.0660	0.0660	0.0609	0.0551	0.0496	0.0472	0.0462	-0.0431
Ohio	0.0210	0.0023	0.0023	-0.0227	-0.0505	-0.0529	-0.0570	-0.0584	-0.0579
Oklahoma	-0.0017	-0.0238	-0.0238	-0.0238	-0.0407	-0.0605	-0.0636	-0.0664	-0.0167
Oregon	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pennsylvania	-0.0306	-0.0265	-0.1198	-0.1360	-0.1485	-0.1486	-0.1505	-0.1520	-0.1545
Rhode Island	0.0000	0.0174	0.0174	0.0174	0.0174	0.0174	0.0174	0.0174	0.0000
South Carolina	-0.0016	-0.0063	-0.0063	-0.0098	-0.0098	-0.0097	-0.0096	-0.0092	-0.0003
South Dakota	0.0000	0.0142	0.0142	0.0142	0.0142	0.0142	0.0142	0.0142	0.0000
Tennessee	0.0050	0.0095	0.0095	0.0091	0.0091	0.0090	0.0089	0.0090	0.0021
Texas	-0.0009	-0.0034	-0.0034	-0.0042	-0.0093	-0.0145	-0.0173	-0.0191	-0.0046
Utah	0.0000	-0.0744	-0.0744	-0.0744	-0.1190	-0.1279	-0.1635	-0.1640	0.0000
Vermont	0.0000	0.0096	0.0095	0.0096	0.0096	0.0096	0.0096	0.0096	0.0000
Virginia	0.0026	0.0831	0.0831	0.0831	0.0813	0.0756	0.0739	0.0715	0.0033
Washington	0.0000	0.0388	0.0388	0.0388	0.0388	0.0388	0.0388	0.0388	0.0000
West Virginia	0.0048	0.0116	0.0116	-0.0019	-0.1259	-0.1325	-0.1324	-0.1327	-0.1490
Wisconsin	0.0009	0.0195	0.0195	0.0193	0.0192	0.0175	0.0128	0.0072	0.0008
Wyoming	0.0009	0.0728	0.0728	0.0701	0.0528	0.0382	0.0176	0.0138	0.0011

* EPA analyzed all segments of the PA RACT Rule. For the EGU sector, this was primarily a cap on emission rates at coal EGUs with SCRs (12,848 tons), but also included a number of less impactful provisions on EGU emission rates (59 tons). This results in 12,907 tons of reduction from EGU PA RACT. These EGU PA Ract reductions are only included in the PA estimates for the final base case $0/ton emission budgets with PA RACT and the final $800/ton emissions budgets cases. A separate 2,500 tons of reductions from non-EGU PA RACT is included in the PA estimates for all cases except the air quality modeling base case, the final base case, and the final $1,400/ton illustrative scenario AQ model.

3. Description of the results of the analysis using the assessment tool for the approach.

EPA used the ozone AQAT to estimate improvements in downwind air quality at base case levels, then $800 per ton and, then, at higher emission budget levels . At each emission budget level, using AQAT, EPA examined whether the average and maximum design values for each of the receptors decreased to values below 76 ppb at which point their nonattainment and maintenance issues would be considered resolved. EPA also examined each states' air quality contributions at each emission budget level, assessing whether a state maintained at least one linkage to a receptor that was estimated to remain in nonattainment and/or maintenance. EPA examined emission budget levels of $0/ton, $0/ton including adjustments due to PA RACT, $800/ton, $1,400/ton, $3,400/ton, $5,000/ton, and $6,400/ton. PA RACT was included in all of the scenarios that were more stringent than the $0/ton including adjustments due to PA RACT scenario. The preamble explains at section VI.D how EPA considered the results of the air quality analyses described in this TSD to determine the appropriate set of emission budgets for reducing significant contribution to nonattainment and interference with maintenance.

The average and maximum design values (ppb) estimated using the assessment tool for each identified receptor for each emission budget level have been truncated to a tenth of a ppb and can be found in Tables D-6 and D-7, respectively. The monitors are in alphabetical order by state. Notably, no monitors are projected to have either their average or maximum design values drop below 76 ppb in the transition from the air quality modeling base case to the adjusted historic base cases (i.e., $0/ton emissions budget with or without PA RACT). At each of the NO_X emission budget levels examined, we found that only one additional monitor is projected to have resolved its average design value problems (i.e., nonattainment). We project that monitor 211110067 in Kentucky is resolved at the $1,400/ton threshold, meaning that we estimate its average design value will drop below 76 ppb.

Many monitors are projected to have maintenance issues at all emission budget levels. However, three monitors have their maintenance issues solved at various emission budget levels. At the $800/ton emission budget level, we estimate that the maintenance problems at monitor 421010024 in Pennsylvania to be resolved (when PA RACT is also considered). Delaware is solely linked to this receptor (*see* the discussion of Delaware in preamble section VI). At the $1,400/ton emission budget level, two additional monitors are projected to have their maintenance concerns resolved. These are monitors 211110067 in Kentucky and 390610006 in Ohio. Tennessee is uniquely linked to the latter receptor in Ohio following the resolution of its other linkage (monitor 421010024 in Pennsylvania) which is projected to occur at the less stringent $800/ton emission budget. *See* the discussion of Tennessee in preamble section VI for additional details.

We observe no additional change in receptor status between the $3,400/ton and $6,400/ton emission budget levels.

In the assessment of air quality using the calibrated assessment tool, we are able to estimate the change in the air quality contributions of each upwind state to each receptor (see the description of the state and receptor-specific contributions in section D.2.c.(2)) in order to determine whether any state's contribution is below the 1 percent threshold used in step 2 of the CSAPR framework to identify "linked" upwind states. For this over-control assessment, we compared each state's adjusted ozone concentration against the 1% air quality threshold at each of the emission budgets levels up to $6,400/ton at each remaining receptor, using AQAT (see the "links" worksheets in the AQAT

workbook, referred to in Appendix B). For Delaware at $800/ton and Tennessee at $1,400/ton, where their final monitors have all of their nonattainment and maintenance issues resolved, the reductions required by the emissions budgets would not reduce their contributions below the 1% threshold. For all other linked states, we did not see instances where a state's contributions dropped below 1% of the NAAQS for all of its linkages to downwind receptors. This is not a surprising result because, for a linkage to be resolved by emission reductions of just a few percent, the contribution would need to be within a few percent of the threshold. As a hypothetical example, if the state is making a 6% emission reduction in its overall anthropogenic ozone season NO_X emissions, and the calibration factor was 0.5, its base case maximum contribution to a remaining unresolved nonattainment and/or maintenance receptor would need to be just under 1.03% of the NAAQS or 0.77 ppb, to drop below the 0.75 ppb linkage threshold.

Lastly, once the budgets for the rule were established (based on the results of the multi-factor test) and IPM was used to model compliance with the rule, it was possible to estimate air quality concentrations at each downwind receptor using the ozone AQAT for the $1,400 final illustrative control air quality case. This scenario was directly modeled in CAMx. The average and maximum design value estimates from AQAT and CAMx can be found in Table D-8. The results are described in the following section (D.4). The design value results from AQAT (i.e., which receptors are estimated to have nonattainment and/or maintenance problems) for the final emissions budgets scenario are similar to that of the $1,400/ton emission budget level.

Table D-6. Average Ozone DVs (ppb) for NOx Emissions Budget Levels ($/ton) Assessed Using the Ozone AQAT for all Nineteen Nonattainment and Maintenance Receptors.

Monitor Identification Number	State	County	CAMx 2017 Base Case (ppb)	Assessment Tool Average Ozone Design Values (ppb).						
				Adjusted Historic Base Case	Adjusted Historic Base Case w/ PA RACT	$800	$1,400	$3,400	$5,000	$6,400
90010017	Connecticut	Fairfield	74.1	74.1	73.9	73.9	73.8	73.8	73.8	73.8
90013007	Connecticut	Fairfield	75.5	75.5	75.3	75.3	75.2	75.2	75.2	75.2
90019003	Connecticut	Fairfield	76.5	76.5	76.3	76.3	76.2	76.2	76.2	76.2
90099002	Connecticut	New Haven	76.2	76.2	76.1	76.1	76.0	76.0	76.0	76.0
211110067	Kentucky	Jefferson	76.9	76.4	76.4	76.0	75.4	75.3	75.1	75.0
240251001	Maryland	Harford	78.8	79.0	78.8	78.7	78.4	78.3	78.2	78.2
260050003	Michigan	Allegan	74.7	74.6	74.6	74.6	74.4	74.4	74.3	74.3
360850067	New York	Richmond	75.8	75.7	75.3	75.2	75.0	74.9	74.9	74.9
361030002	New York	Suffolk	76.8	76.8	76.6	76.6	76.5	76.5	76.5	76.5
390610006	Ohio	Hamilton	74.6	74.1	74.1	73.3	72.1	71.9	71.7	71.5
421010024	Pennsylvania	Philadelphia	73.6	73.4	72.7	72.5	72.2	72.1	72.1	72.0
480391004	Texas	Brazoria	79.9	79.9	79.9	79.9	79.8	79.7	79.7	79.7
481210034	Texas	Denton	75.0	74.9	74.9	74.9	74.9	74.8	74.8	74.8
482010024	Texas	Harris	75.4	75.4	75.4	75.3	75.3	75.3	75.3	75.3
482011034	Texas	Harris	75.7	75.7	75.7	75.7	75.6	75.6	75.6	75.5
482011039	Texas	Harris	76.9	76.9	76.9	76.9	76.8	76.8	76.8	76.7
484392003	Texas	Tarrant	77.3	77.2	77.2	77.2	77.2	77.1	77.1	77.0
484393009	Texas	Tarrant	76.4	76.3	76.3	76.3	76.3	76.2	76.2	76.2
551170006	Wisconsin	Sheboygan	76.2	76.2	76.2	76.1	76.1	76.0	76.0	76.0

Table D-7. Maximum Ozone DVs (ppb) for NOx Emissions Budget Levels ($/ton) Assessed Using the Ozone AQAT for all Nineteen Nonattainment and Maintenance Receptors.

Monitor Identification Number	State	County	CAMx 2017 Base Case (ppb)	Assessment Tool Maximum Ozone Design Values (ppb).						
				Adjusted Historic Base Case	Adjusted Historic Base Case w/ PA RACT	$800	$1,400	$3,400	$5,000	$6,400
90010017	Connecticut	Fairfield	76.6	76.6	76.4	76.4	76.3	76.3	76.3	76.3
90013007	Connecticut	Fairfield	79.7	79.7	79.5	79.5	79.4	79.4	79.4	79.3
90019003	Connecticut	Fairfield	79.5	79.5	79.3	79.3	79.2	79.2	79.2	79.2
90099002	Connecticut	New Haven	79.2	79.1	79.0	79.0	79.0	79.0	78.9	78.9
211110067	Kentucky	Jefferson	76.9	76.4	76.4	76.0	75.4	75.3	75.1	75.0
240251001	Maryland	Harford	81.4	81.6	81.4	81.3	81.0	80.9	80.8	80.8
260050003	Michigan	Allegan	77.7	77.6	77.6	77.5	77.4	77.3	77.3	77.2
360850067	New York	Richmond	77.4	77.3	76.9	76.7	76.5	76.5	76.5	76.4
361030002	New York	Suffolk	78.4	78.3	78.2	78.2	78.1	78.1	78.1	78.1
390610006	Ohio	Hamilton	77.4	76.8	76.8	76.0	74.7	74.6	74.3	74.1
421010024	Pennsylvania	Philadelphia	76.9	76.7	76.0	75.7	75.4	75.3	75.3	75.2
480391004	Texas	Brazoria	80.8	80.8	80.8	80.8	80.7	80.7	80.6	80.6
481210034	Texas	Denton	77.4	77.3	77.3	77.3	77.3	77.2	77.2	77.2
482010024	Texas	Harris	77.9	77.9	77.9	77.9	77.9	77.8	77.8	77.8
482011034	Texas	Harris	76.6	76.6	76.6	76.6	76.5	76.5	76.5	76.5
482011039	Texas	Harris	78.8	78.7	78.7	78.7	78.7	78.7	78.6	78.6
484392003	Texas	Tarrant	79.7	79.6	79.6	79.6	79.5	79.5	79.4	79.4
484393009	Texas	Tarrant	76.4	76.3	76.3	76.3	76.3	76.2	76.2	76.2
551170006	Wisconsin	Sheboygan	78.7	78.6	78.6	78.6	78.5	78.5	78.4	78.4

4. Comparison between the air quality assessment tool estimates and CAMx air quality modeling estimates.

As described earlier, because the AQAT was calibrated using data from the proposal, it was possible to evaluate the estimates from the tool with the independent model design value predictions from CAMx for the final modeling 2017 illustrative control scenario. The average and maximum design values from AQAT and CAMx, as well as the differences, are shown in Table D-8. The AQAT values and the differences in the table have been truncated to a tenth of a ppb.

Strong correlations are observed (nearly one to one) between the estimated average and maximum design values from AQAT and CAMx (Figure 2). The slopes of the least-squares linear regression lines are almost exactly equal to 1, and the regression coefficients are also nearly 1. The differences in estimates are also small, averaging less than 0.1 ppb and reaching a maximum of about 0.2 ppb for several receptors. These small differences suggest that each of the state contributions are being reasonably approximated. The results of this demonstrate that, considering the constraints faced by the EPA, the AQAT provides reasonable estimates of air quality concentrations for each receptor, can provide reasonable inputs for the multi-factor assessment, and can serve as a method to test for linkages dropping below the threshold.

Table D-8. Average and Maximum DVs (ppb) in the 2017 Budget Control Scenario as Modeled in CAMx and as Estimated in Calibrated AQAT, for Receptors with Maximum DVs Greater than or Equal to 76 ppb in the 2017 Base Case Modeled in CAMx.

Monitor Identification Numbe	State	County	2017 Budget Control Scenario					
			CAMx Avg. DV	CAMx Max. DV	AQAT Avg. DV	AQAT Max. DV	Difference, Avg. DV (CAMx-AQAT)	Difference, Max. DV (CAMx-AQAT)
90010017	Connecticut	Fairfield	73.7	76.2	73.7	76.1	0.0	0.1
90013007	Connecticut	Fairfield	75.0	79.2	75.1	79.3	-0.1	-0.1
90019003	Connecticut	Fairfield	76.0	79.0	76.1	79.1	-0.1	-0.1
90099002	Connecticut	New Haven	76.0	78.9	75.9	78.9	0.1	0.0
211110067	Kentucky	Jefferson	75.1	75.1	75.1	75.1	0.0	0.0
240251001	Maryland	Harford	78.0	80.6	78.1	80.8	-0.1	-0.2
260050003	Michigan	Allegan	74.4	77.4	74.4	77.4	0.0	0.0
360850067	New York	Richmond	74.8	76.4	74.8	76.3	0.0	0.1
361030002	New York	Suffolk	76.5	78.0	76.4	78.0	0.1	0.0
390610006	Ohio	Hamilton	71.7	74.3	71.7	74.3	0.0	0.0
421010024	Pennsylvania	Philadelphia	72.1	75.3	71.9	75.1	0.2	0.2
480391004	Texas	Brazoria	79.8	80.7	79.8	80.7	0.0	0.0
481210034	Texas	Denton	74.9	77.3	74.9	77.3	0.0	0.0
482010024	Texas	Harris	75.4	77.9	75.3	77.8	0.1	0.1
482011034	Texas	Harris	75.6	76.5	75.6	76.5	0.0	0.0
482011039	Texas	Harris	76.8	78.7	76.8	78.7	0.0	0.0
484392003	Texas	Tarrant	77.1	79.5	77.1	79.5	0.0	0.0
484393009	Texas	Tarrant	76.3	76.3	76.3	76.3	0.0	0.0
551170006	Wisconsin	Sheboygan	76.0	78.5	76.0	78.4	0.0	0.1

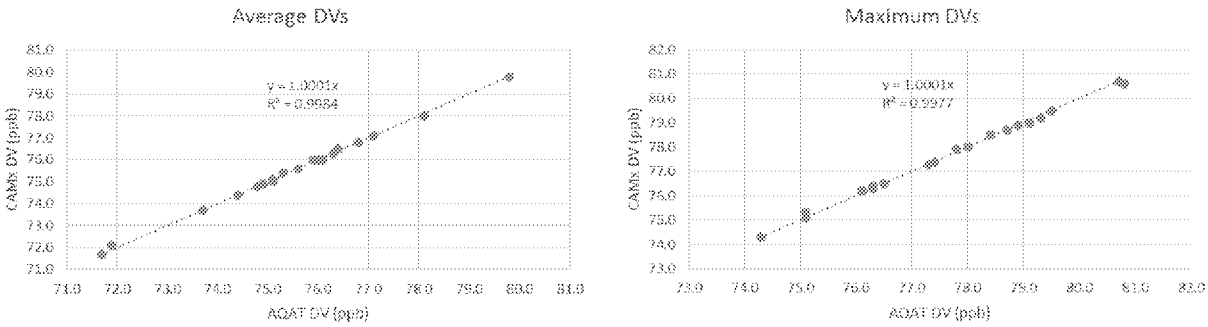

Figure 2. Least squares linear regression plots showing correlations between CAMx and calibrated AQAT for the 2017 illustrative budget control scenario base case for estimated average and maximum design values (ppb) in the left and right panels, respectively.

Sierra Club v. McCarthy

Case No. 3:15-cv-04328-JD (JSC)

Declaration of Janet G. McCabe

Attachment 3

Technical Support Document (TSD)

for the Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS

Docket ID No. EPA-HQ-OAR-2015-0500

EGU NO_X Mitigation Strategies Final Rule TSD

U.S. Environmental Protection Agency

Office of Air and Radiation

August 2016

Introduction:

The analysis presented in this document supports the EPA's Final Cross-State Air Pollution Rule Update for the 2008 Ozone National Ambient Air Quality Standards (CSAPR Update). In developing the CSAPR Update, the EPA considered all NO_X control strategies that are widely in use by EGUs, listed below. This Technical Support Document (TSD) discusses costs, emission reduction potential, and feasibility related to these EGU NO_X emission control strategies. Specifically, this TSD explores four topics: (1) the appropriate representative cost resulting from "widespread" implementation of a particular NO_X emission control technology; (2) the NO_X emission rates commonly achievable by "fully operating" emission control equipment; and (3) the time required to implement these EGU NO_X control strategies (e.g., installing and/or restoring an emission control system to full operation or shifting generation to reduce NO_X emissions). These analyses inform the EPA's evaluation of costs and emission reductions with the Integrated Planning Model (IPM) v 5.15 and compliance feasibility for the CSAPR Update.

NO_X control strategies that are widely in use by EGUs include:

- Returning to full operation existing SCRs that have operated at fractional design capability;
- Restarting inactive SCRs and returning them to full operation;
- Restarting inactive SNCRs;
- Replacing outdated combustion controls with newer advanced technology (e.g., state-of-the-art low NO_X burners);
- Installing new SCR systems;
- Installing new SNCR systems; and
- Shifting generations (i.e., changing dispatch) from high- to low-emitting or zero-emitting units.

To evaluate the cost for these EGU NO_X reduction strategies, the agency used the capital expenses, fixed and variable operation and maintenance costs for installing and fully operating emission controls researched by Sargent & Lundy, a nationally recognized architect/engineering firm (A/E firm) familiar with the EGU sector.[1] EPA also used the Integrated Planning Model (IPM) to analyze power sector response while accounting for electricity market dynamics such as generation shifting.

Cost Estimate for Fully Operating Existing SCR that Already Operate to Some Extent

EPA sought to examine costs for full operation of SCR. SCR are post-combustion controls that reduce NO_x emissions by reacting the NO_X with either ammonia or urea. The SCR technology utilizes a catalyst and produces high conversion of NO_X. Fully operating an SCR includes maintenance costs, labor, auxiliary power, catalyst (if utilized), and reagent cost. The chemical reagent (typically ammonia or urea) is a significant portion of the operating cost of these controls.

EPA received comment on the costs to fully operate a SCR that was already being operated to some extent. At proposal, EPA stated that the cost could be apportioned to adding additional reagent at a cost of about $500/ton of NO_X removed. Commenters recommended that EPA include additional variable costs to the proposed cost of $500 per ton, including the costs of catalyst in addition to the cost of reagent. In response, EPA examined three of the variable operations and maintenance (VOM) costs: reagent, catalyst, and auxiliary power. Depending on circumstances, SCR operators may operate the system while

[1] See: Attachment 5-3: SCR Cost Methodology (PDF) and Attachment 5-4: SNCR Cost Methodology (PDF) available at https://www.epa.gov/airmarkets/documentation-base-case-v513-emission-control-technologies

achieving less than "full" removal efficiency by using less reagent (as EPA stated at proposal), and/or not replacing degraded catalyst which allows the SCR to perform at lower reduction capabilities. Consequently, the EPA finds it reasonable to consider the costs of both additional reagent and catalyst maintenance and replacement in representing the cost of optimizing existing and operating SCR systems.

In contrast, EPA finds that units running their SCR systems have incurred the complete set of fixed operating and maintenance (FOM) costs. In addition, EPA finds that the auxiliary power component of VOM is also largely indifferent to the NO_X removal. That is, auxiliary power is indifferent to reagent consumption, catalyst degradation, or NO_X removal rate. Thus, the FOM and auxiliary power VOM cost components are not included in the cost estimate to achieve "full" operation for units that are already operating.

In conclusion, EPA finds that only the VOM reagent and catalyst replacement costs should be included in cost estimates to ensure an operating SCR operates fully.

In an SCR, the chemical reaction consumes approximately 0.57 tons of ammonia or 1 ton of urea reagent for every ton of NO_X removed. During development of CAIR and the original CSAPR, the agency identified a marginal cost of $500 per ton of NO_X removed (1999$) with reagent costing $190 per ton of ammonia, which equated to $108 per ton of NO_x removed for the reagent procurement portion of operations. The remaining balance reflected other operating costs. Over the years, reagent commodity prices have changed, affecting the operational cost in relation to reagent procurement. To understand the relationship between reagent price and its associated cost regarding NO_X reduction, see Appendix A: Table 1; "Historical Anhydrous Ammonia and Urea Costs and their Associated Cost per NO_X ton Removed in a SCR." Commenters suggested that in the future, prices could increase as demand increases for these commodities. However, these commodities are created in large quantities for use in the agriculture sector. Demand from the power sector for use in controls is small relative to the magnitude used in agriculture. Fluctuations in price are expected and are demonstrated in the pricing data presented in Appendix A, Table 1. Some of these prices reflect conditions where demand and commodity prices are high. Consequently, the reagent costs used by EPA in this rule are representative. In the cost estimates presented here, EPA uses the cost for urea, which is greater than ammonia costs, to arrive at a conservative estimate. EPA conservatively assumed a cost of $310/ton for a 50% weight solution of urea. This results in a cost of between $400 and $500/ton of NO_X removed for the reagent cost alone.

As suggested by commenters, EPA also estimated the cost of catalyst replacement and disposal in addition to the costs of reagent. EPA identified the cost for returning a partially operating SCR to full operation applying the Sargent & Lundy cost equations for all coal-fired units that operated in 2015 in the United States on a per ton of NO_X removed basis. This assessment covered up to 255 units. EPA was able to identify the costs of individual VOM and FOM cost components, including reagent, catalyst, auxiliary fans. Some of these expenses, as modeled by the Sargent & Lundy cost tool, vary depending on factors such as unit size, NO_X generated from the combustion process, and reagent utilized. The EPA performed multiple assessments with this tool's parameters to investigate sensitivity relating to cost per ton of NO_X removed. Additionally, the agency conservatively modeled costs with urea, the higher-cost reagent for NO_X mitigation. The key input parameters in the cost equations are the size of the unit, the uncontrolled, or "input", NOx rate, the NOx removal efficiency, the type of coal, and the capacity factor. For the input NO_X rate, each unit's maximum monthly emission rate was examined from the period 2002-2014 (inclusively) for the purpose of identifying the unit's maximum emission rate prior to the control's installation or alternatively during time periods when the control was not operating. The long timeframe allowed examination prior to the onset of annual NO_X trading programs (e.g., CAIR and CSAPR).

In the analysis, we assumed these units burned bituminous coal at a 54.1% capacity factor.[2] We assumed that the SCRs operate with an 87.55% NO_x removal efficiency.[3] In this section, where we are assessing the cost to return a partially operating SCR to full operation, we examined only the sum of the VOM reagent and catalyst cost components. EPA ranked the quantified VOM costs for each unit and identified the cost at the 90th percentile level rank, which rounded to $800 per ton of NO_x removed. EPA also identified the average cost, which rounded to $670 per ton of NO_x removed. EPA selected the 90th percentile value because a substantial portion of units had combined reagent and catalyst costs at or less than this $800/ton of NO_x removed.

Thus, $800 per ton NO_x removed represents a reasonable estimate of the cost for operating these post combustion controls based on current market prices and typical operation. For purposes of the IPM modeling, the agency assumes that $800 per ton of NO_X removed is a broadly available cost point for units that currently are partially-operating SCRs to fully operate their NO_X controls.

Cost Estimates for Restarting Idled Existing SCR

For a unit with an idled, bypassed, or mothballed SCR, all FOM and VOM costs such as auxiliary fan power, catalyst costs, and additional administrative costs (labor) are realized upon resuming operation through full potential capability. To understand the costs, the agency applied the Sargent & Lundy cost equations for two "typical" units with varying input NO_X rates in a bounding analysis and then did a more detailed analysis encompassing all coal-fired units with SCR that operated in 2015 in the contiguous United States. For both analyses, the agency assumed the same input parameters as was used for the partially-operating SCR analysis described above, but in keeping with this assessment's focus on restarting SCRs that are not already operating, these analyses included the auxiliary fan power VOM component and all of the FOM components along with the reagent and catalyst VOM components in the total cost estimate.

First, to better-understand the effect of input NO_X rate on costs, using the Sargent & Lundy cost equations, the EPA performed a bounding analysis to identify reasonable high and low per-ton NO_X control costs from reactivating an existing but idled SCR across a range of potential uncontrolled NO_X rates.[4] Similar to what was described at proposal, for a hypothetical unit with a high uncontrolled NO_X rate (e.g., 0.7 lb NO_X/mmBtu, 80 percent removal efficiency, 54.1% capacity factor, and 10,000 Btu/kWh heat rate), VOM and FOM costs were around $750/ton of NO_X removed. Conversely, a unit with a low

[2] Commenters suggested that EPA evaluate costs of SCR operation utilizing a capacity factor value representing recent unit operation. EPA identified the 2015 heat input weighted ozone season capacity factor of 54.1 percent for 213 coal units with SCR on-line at the start of 2015 and which have nonzero 2015 heat input and are in the CSAPR Update region.

[3] A NO_X removal efficiency of 87.6 percent is based on the median ratio of the month with the highest NO_X rate to the second best ozone season value for the time-period 2003-2014. The agency selected the median value to ensure exclusion of outliers. Commenters questioned the particular values EPA selected for this analysis. The highest month was selected as the "uncontrolled" NO_X rate because it had a good possibility of being a time when the SCR was not operating. As averaging time increases, there is increased likelihood that the unit would be using its SCR, resulting in an "uncontrolled" NO_X rate that includes some control. The second-lowest ozone season rate was selected as the "controlled" rate. This was selected because it represented a time when the unit was consistently and efficiently operating its SCR. This is consistent with the proposal.

[4] For these hypothetical cases, the "uncontrolled" NO_X rate includes the effects of existing combustion controls present (i.e., low NO_x burners).

uncontrolled NO_X rate (e.g., 0.2 lb NO_X/mmBtu and 60 percent removal) experienced a higher cost range revealing VOM and FOM costs about $1,800/ton of NO_X removed.

Next, using the Sargent & Lundy cost equations and same input parameters described above, EPA evaluated all of the VOM and FOM costs for the 255 coal-fired units with SCR in the contiguous United States that were operating in 2015. As before, EPA ranked the sum of the VOM and FOM costs for each unit and identified the 90th percentile cost. When rounded, this was $1,400/ton of NO_X removed. EPA also identified the average cost, which rounded to $1,000 per ton of NOx removed. Specifically, this assessment found that 229 of the 255 units demonstrated VOM plus FOM costs lower than $1,400/ton of NO_X removed.[5]

Examining the results, the EPA concludes that a cost of $1,400/ton of NO_X removed is reasonably representative of the cost to resume and fully operate idled SCRs.

<u>NO_X Emission Rate Estimates for Full SCR Operation</u>

Similar to what was done at proposal, the agency examined the ozone season average NO_X rates for 271 coal-fired units in the contiguous US with an installed SCR over the time-period 2009-2015, then identified each unit's lowest, second lowest, and third-lowest ozone season average NO_X rate. Commenters suggested that EPA examine ozone season average NO_x rates over a shorter time period than proposed (specifically not predating 2009) since annual NO_x programs, rather than just seasonal programs, became widespread in the eastern US with the start of CAIR in 2009, and this regulatory development could affect SCR operation. While the proposal focused on second-lowest ozone season NO_X rates, commenters expressed concern that such rates may not be achievable on a routine basis.[6] Certain commenters also suggested that units were not operating at capacity factors conducive to efficient SCR operation and that units were facing additional constraints on NO_X removal by using the SCR to comply with other regulations (i.e., MATS). For responses to these comments, see the general Response to Comments document. Following comments, EPA focused on the third lowest ozone season rate over the 2009-2015 time period to ensure that the rate represents efficient but routine SCR operation (i.e., the performance of the SCR is not simply the result of being new, or having a highly aggressive catalyst replacement schedule, but is the result of being well-maintained and well-run). EPA found that, between 2009 and 2015, EGUs on average achieved a rate of 0.10 lbs NO_X/mmBtu for the third-lowest ozone season rate. The EPA selected 0.10 lbs NO_X/mmBtu as a reasonable representation for full operational capability of an SCR. EPA notes that over half of the EGUs achieved a rate of 0.076 lbs NO_X/mmBtu over their third-best entire ozone season (see Figure 1).

For the next step, the agency examined each ozone season over the time period from 2009-2015 and identified the lowest monthly average NO_x emission rates for each year. Examining the third-lowest historical monthly NO_x rate, the EPA found that, on average EGUs achieved a rate of 0.085 lbs NO_X/mmBtu. The third-lowest historical monthly NO_x rate analysis showed that a large proportion of units displayed NO_x rates below 0.10 lb/mmBtu (see Figure 2).

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[5] Given the sensitivity of the cost to the input uncontrolled NOx rates, EPA examined the units with higher costs and observed that some exhibited low, uncontrolled NO_X rates suggesting that, perhaps, the SCR may have been consistently operated year-round over the entire time-period. A low uncontrolled NO_X rate would result in a low number of tons of NOx removed, and, thus, a high cost on a "per ton of NO_X removed" basis when modest fixed and variable costs are divided by just a few tons of NO_X removed.

[6] Other commenters noted that a large group of EGUs with SCRs routinely achieved rates well below 0.075 lbs NO_x/mmBtu. EPA agrees that a large number of units can achieve these low rates. In the setting of the state budgets, EPA notes that units were given the lower of their actual rate from NEEDS or 0.10 lbs/mmBtu.

Based on the ozone season emission rates, and supported by the monthly rates, the agency concludes a 0.10 lb NO_X/mmBtu average rate is widely achievable by the EGU fleet.

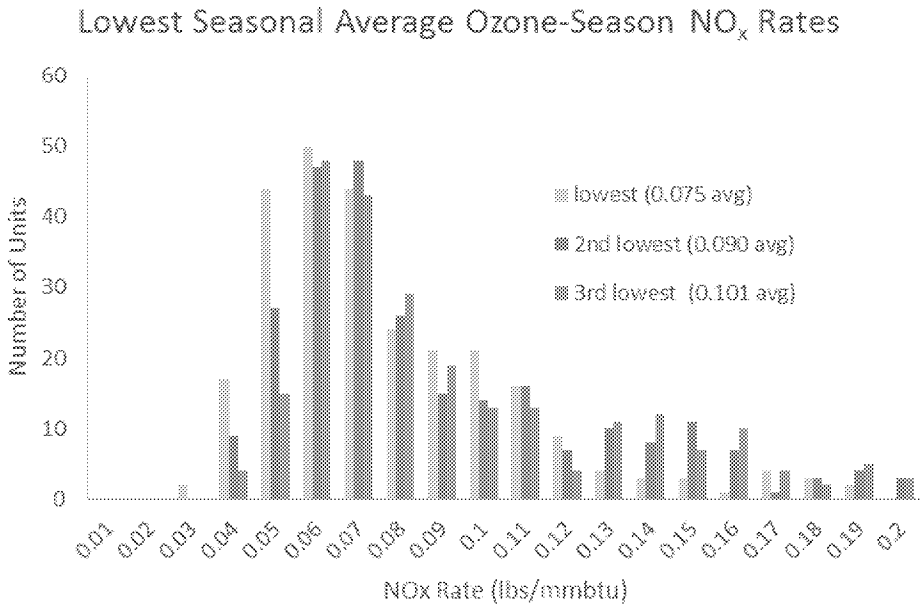

Figure 1. "Frequency" distribution plots for coal-fired units with an SCR showing their NO_X emission rates (lbs/mmBtu) during ozone seasons from 2009-2015. For each unit, the lowest, second lowest, and third lowest ozone season average NO_X rates are illustrated.

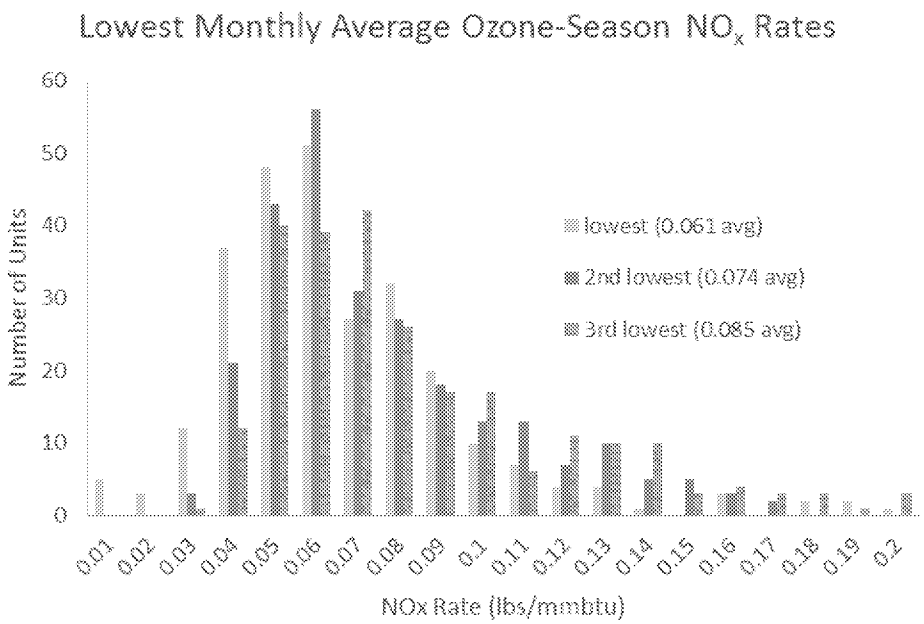

Figure 2. "Frequency" distribution plots for coal-fired units with an SCR showing their NO_X emission rates (lbs/mmBtu) during ozone seasons from 2009-2015. For each unit, the lowest, second lowest, and third lowest monthly average NO_X rates are illustrated.

Cost Estimates for Restarting Idled Existing SNCR

EPA sought to examine costs for full operation of SNCR. SNCR are post-combustion controls that reduce NO_x emissions by reacting the NO_X with either ammonia or urea, without catalyst. Because the reaction occurs without catalyst and is thereby a less efficient reaction, several times the amount of reagent must be injected to achieve a level of NOx removal comparable to SCR technology. Usually, an SNCR system does not achieve the level of emission reductions which an SCR can achieve. For the SNCR analysis, as with the SCR analyses described above, the agency used the Sargent & Lundy cost equations to perform a bounding analysis for examining operating expenses associated with a "generic" unit returning an SNCR to full operation.[1] For units with a mothballed SNCR returning to full operation, the owner incurs the full suite of VOM and FOM costs. Reagent consumption represents the largest portion of the VOM cost component. For this bounding analysis, the agency examined two cases: first, a unit with a high input uncontrolled NO_x rate 0.70 lb/mmBtu; second, a unit with a low input uncontrolled NO_x rate 0.20 lb /mmBtu – both assuming a 25 percent removal efficiency.[7] For the high rate unit case, VOM and FOM costs were calculated as approximately $1,970/ton NO_x with about $1,620/ton of that cost associated with urea procurement. For the low rate unit case, VOM and FOM costs approached $3,420/ton NO_x with nearly $2,700/ton of that cost associated with urea procurement. Despite equivalent reduction percentages for each unit, the cost dichotomy results from differences in the input NO_x rates for the units and the type of boiler, resulting in a modeled step-change difference in urea rate (either a 15% or 25% reagent usage factor).[1] EPA also examined SNCR cost sensitivity by varying NO_X removal efficiency while maintaining the uncontrolled NO_X emission rate. In these studies, SNCR NO_X removal efficiency was assumed to be 40 percent for the first cost estimate and 10 percent for the second cost estimate. For a high rate unit with an uncontrolled rate of 0.70 lb NO_X/mmBtu, the associated costs were $1,920/ton and $2,110/ton. For a low rate unit with an uncontrolled rate of 0.20 lb NO_X/mmBtu, the associated costs were $3,310/ton and $3,900/ton. This analysis illustrates that SNCR costs ($/ton) are more sensitive to a unit's uncontrolled input NO_X rate than the potential NO_X removal efficiency of the SNCR itself. Examining the results across all of the simulations, but focusing on the 25 percent removal efficiency scenario for the low input uncontrolled NO_X rate, which is more representative of typical removal efficiency, EPA finds that costs for fully operating idled SNCR are substantially higher than for SCR. We conclude that a cost of $3,400/ton of NO_X removed is representative of the cost to resume and fully operate idled SNCRs.

Cost Estimates for Installing Low NOx Burners and / or Over Fire Air

Combustion control technology has existed for many decades. Its emission control premise depends on limiting NO_X formation during the combustion process by extending the combustion zone. Over time, as the technology has advanced, combustion controls have become more efficient at achieving lower NO_X rates than those installed years ago. Modern combustion control technologies routinely achieve rates of

[7] For both cases, we examined a 500 MW unit with a heat rate of 10,000 Btu/kWh operated at a 42 percent annual capacity factor while burning bituminous coal. The 2015 heat input weighted ozone season capacity factor for 105 coal units with SNCR on-line at the start of 2015 and which have nonzero 2015 heat input and are in the CSAPR Update region was 42 percent. Furthermore, in the cost assessment performed here, the agency conservatively assumes SNCR NO_X removal efficiency to be 25 percent, noting that multiple installations have achieved better results in practice. 25% removal efficiency is the default NO_X removal efficiency value from the IPM documentation. See https://www.epa.gov/sites/production/files/2015-08/documents/attachment_5-4_sncr_cost_methodology.pdf for details.

0.20 – 0.25 lb NO_X/mmBtu and, for some units, depending on unit type and fuel combusted can achieve rates well below 0.18 lb NO_X/mmBtu. Table 1 shows average NO_X rates from units with various combustion controls for different time periods.

Table 1: Ozone Season NO_X Rate (lb/mmbtu) Over Time for Units with Various Combustion Controls*

	Years Between 2003 and 2008		Years Between 2009 and 2014		Year = 2015	
NOx Control Technology	NOx Rate (lb/mmBtu)	Number of Unit-Years	NOx Rate (lb/mmBtu)	Number of Unit-Years	NOx Rate (lb/mmBtu)	Number of Unit-Years
Overfire Air	0.346	987	0.275	828	0.222	114
Low NOx Burner Technology (Dry Bottom only)	0.339	1654	0.276	1421	0.229	193
Low NOx Burner Technology w/ Overfire Air	0.299	673	0.235	641	0.223	85
Low NOx Burner Technology w/ Closed-coupled OFA	0.265	432	0.240	329	0.203	48
Low NOx Burner Technology w/ Separated OFA	0.218	501	0.194	475	0.185	79
Low NOx Burner Technology w/ Closed-coupled/Separated OFA	0.206	455	0.177	485	0.156	69

* Source: Air Markets Program Data (AMPD), ampd.epa.gov, EPA, 2016

Current combustion control technology reduces NO_X formation through a suite of technologies. Whereas early combustion controls focused only on either Low NOx Burners (LNB) or Overfire Air (OFA), modern controls employ both, and sometimes include a second, separated overfire air system. Further advancements in fine-tuning the multitude of burners and overfire air system(s) as a complete assembly have enabled suppliers to obtain better results than tuning individual components. For this regulation, the agency evaluated EGU NO_X reduction potential based on upgrading units to modern combustion controls. Combustion control upgrade paths are shown in Table 3-11 of the IPM 5.13 documentation (*see* Chapters 3 and 5 of the IPM documentation for additional information). The fully upgraded configuration for units with wall-fired boilers is LNB with OFA. For units with tangential-fired boilers, the fully upgraded configuration is LNC3 (or, Low NOx burners with Close-Coupled and Separated Overfire Air).

With the wide range of LNB configurations available and furnace types present in the fleet, the agency decided to assess compliance costs based on an illustrative unit. This was the same unit examined at proposal.[8] The agency selected this illustrative unit because its attributes (e.g., size, input NO_X emission rate) are representative of the EGU fleet, and, thus, the cost estimates are also representative. In the final rule modeling, we observe that most of the NO_X reductions projected to occur from combustion control

[8] For this analysis, EPA assumed a 500 MW unit with a heat rate of 10,000 Btu/kWh and an 85% annual capacity factor. We assumed the unit was burning bituminous coal and had an input uncontrolled NO_x rate of 0.50 lb NO_x / mmBtu initial rate and had a 41 percent NO_X removal efficiency after the combustion control upgrades. This 0.50 lbs/mmBtu input NO_x rate is comparable to the observed average rate of 0.48 lbs/mmBtu for the coal-fired wall-fired units from 2003-2008 that had not installed controls. This rate is exhibited by a number of coal fired units and EPA notes that there are still units with wall and tangentially-fired boilers which continued to have rates higher than 0.50 lbs/mmBtu in 2015. Using 2015 data for uncontrolled wall-fired coal units and comparing these rates against controlled units of the same type, EPA observes a 41% difference in rate. Similarly, EPA observes a 51% reduction for coal units with tangentially-fired boilers. To be conservative, EPA used the 41 percent reduction from wall-fired coal units.

retrofits occurred at units that were larger than the illustrative unit.[9] Accordingly, the agency calculated the costs for various combustion control paths. The cost estimates utilized the equations found in Table 5-4 "Cost (2011$) of NO_X Combustion Controls for Coal Boilers (300 MW Size)" from Chapter 5 of the IPM documentation.[10] For these paths, EPA found that the cost ranges from $430 to $1200 per ton NO_X removed ($2011). EPA examined lower capacity factors (i.e., 70%) and found the costs increased from $520 to $1,400 per ton. At lower capacity factors (i.e., 54.1%), costs increased to a max of $1,780 per ton for one type of installation. Examining the estimates for all of the simulations, the agency finds that the costs of combustion control upgrades typically fall below the costs for returning a unit with an inactive SCR to full operation (i.e., $1,400/ton), but in some cases, above the cost for returning a partially operating SCR to full operation (i.e., $800/ton). Consequently, EPA identifies $1,400/ton as the cost level where upgrades of combustion controls would be widely available and cost-effective.

Cost Estimates for Retrofitting with SCR and Related Costs

For coal-fired units, an SCR retrofit is the state-of-the-art technology used to limit NO_X emissions to their lowest extent. The agency examined the cost for newly retrofitting a unit with SCR technology. As was done at proposal, using the Sargent & Lundy cost tool to examine the costs of SCR retrofit for an illustrative unit, a 500 MW unit operating at an 85% percent capacity factor with an uncontrolled rate of 0.35 lb NO_X / mmBtu, retrofitted with an SCR to a lower emission rate of 0.07 lb NO_X / mmBtu, results in a compliance cost of $5,000 / ton of NO_X removed. For this illustrative unit, at lower capacity factors, costs increased. Consequently, SCR installation is most often seen for large units generating substantial electricity with high capacity factors. Because of the substantial capital cost required for retrofitting a unit with an SCR, owners with low utilized units may adopt SNCR as a more appropriate economical choice for NO_X control, thereby reducing the "cost per ton" for of NO_X reduction.

Cost Estimates for Retrofitting with SNCR and Related Costs

SNCR technology is an alternative method of NO_X emission control that incurs a much lower capital cost compared with an SCR, albeit at the expense of greater operating costs and less NO_X emission reduction. Some units with anticipated shorter operational lives or with low utilization may benefit from this control technology. The higher cost per ton of NO_X removed reflects this technology's lower removal efficiency which necessitates greater reagent consumption, thereby escalating VOM costs. The agency examined the costs of retrofitting a unit with SNCR technology using the Sargent & Lundy tool. The agency conservatively set the NO_X emission reduction rate at 25 percent. For the unit examined above (500 MW, 0.35 lbs NO_X/mmBtu) with a 42 percent capacity factor, the cost is $6,400 / ton of NO_X removed.

Feasibility Assessment: Implementation Timing for Each EGU NO_X Control Strategy

The agency evaluated the implementation time required for each compliance option to assess the feasibility of achieving reductions during the 2017 ozone season.

EPA evaluated the feasibility of turning on idled SCRs for the 2017 ozone season. The EGU sector is very familiar with restarting SCR systems. Based on past practice and the possible effort to restart the

[9] Generally, there is an inversely proportional relationship between cost of control and unit size (on a dollars per ton basis). That is, assuming a constant NO_X removal efficiency, more absolute tons of NO_X are removed as units increase in size while absolute capital costs increase at a lower rate. Thus, we would expect it may be even more cost-effective to control these units than has been assumed here.

[10] https://www.epa.gov/sites/production/files/2015-07/documents/chapter_5_emission_control_technologies_0.pdf

controls (e.g., re-stocking reagent, bringing the system out of protective lay-up, performing inspections), returning these idled controls to operation is possible within the compliance timeframe of this rule. This timeframe is informed by many electric utilities' previous, long-standing practice of utilizing SCRs to reduce EGU NO_X emissions during the ozone season while putting the systems into protective lay-up during non-ozone season months when the EGUs did not have NO_X emission limits that warranted operation of these controls. For example, this was the long-standing practice of many EGUs that used SCR systems for compliance with the NO_X Budget Trading Program. Based on the seasonality of EGU NO_X emission limits, it was typical for EGUs to turn off their SCRs following the September 30 end of the ozone season control period. They would then lay-up the pollution control for seven months of non-use. By May 1 of the following ozone season, the control would be returned to operation. In the 22 state CSAPR Update region, 2005 EGU NO_X emission data suggest that 125 EGUs operated SCR systems in the summer ozone season, likely for compliance with the NO_X Budget Trading program, while idling these controls for the remaining seven non-ozone season months of the year.[11] In order to comply with the seasonal NO_X limits, these SCR controls regularly were taken out of and put back into service within seven months.

Based on EGUs' past experience and the frequency of this practice of idling controls for periods of time, the EPA finds that idled controls can be restored to operation in less than seven months. The lead-time for compliance with this rule is longer than this timeframe.

Full operation of existing SCRs that are already operating to some extent involves increasing reagent (i.e., ammonia or urea) flow rate, and maintaining and replacing catalyst to sustain higher NO_X removal rate operations. As described regarding restarting idled SCR systems, EGU data demonstrate that operators have the capability to fully idle SCR systems during winter months and return these units to operation in the summer to comply with ozone season NO_X limits.[12] The EPA believes that this widely demonstrated behavior also supports our finding that fully operating existing SCR systems currently being operated, which would necessitate fewer changes to SCR operation relative to restarting idled systems, is also feasible for the 2017 ozone season. Increasing NO_X removal by SCR controls that are already operating can be implemented by procuring more reagent and catalyst. EGUs with SCR routinely procure reagent and catalyst as part of ongoing operation and maintenance of the SCR system. In many cases, where the EPA has identified EGUs that are operating their SCR at non-optimized NO_X removal efficiencies, EGU data indicates that these units historically have achieved more efficient NO_X removal rates. Therefore, the EPA finds that optimizing existing and SCR systems currently being operated could generally be done by reverting back to previous operation and maintenance plans. Regarding full operation activities, existing SCRs that are only operating at partial capacity still provide functioning, maintained systems that may only require increased chemical reagent feed rate up to their design potential and catalyst maintenance for mitigating NO_X emissions. Units must have adequate inventory of chemical reagent and catalyst deliveries to sustain operations. Considering that units have procurement programs in place for operating

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[12] In the 22 state CSAPR Update region, 2005 EGU NO_X emissions data suggest that 125 EGUs operated SCR systems in the summer ozone season while idling these controls for the remaining 7 non-ozone season months of the year. Units with SCR were identified as those with 2005 ozone season average NO_X rates that were less than 0.12 lbs/mmBtu and 2005 average non-ozone season NO_X emission rates that exceeded 0.12 lbs/mmBtu and where the average non-ozone season NO_X rate was more than double the ozone season rate.

SCR, this may only require updating the frequency of deliveries. This may be accomplished within a few weeks or months.

Combustion control, such as LNB and/or OFA, represent mature technologies requiring a short installation time – typically, four weeks to install along with a scheduled outage (with order placement, fabrication, and delivery occurring beforehand and taking a few months). Construction time for installing combustion controls was examined by the EPA during the original CSAPR development and are reported in the TSD for that rulemaking entitled, "Installation Timing for Low NO_X Burners (LNB)", Docket ID No. EPA-HQ-OAR-2009-0491-0051.[13] Industry has demonstrated retrofitting LNB technology controls on a large unit (800 MW) in under six months. This TSD is in the docket for the CSAPR Update.

This rule does not consider retrofitting SCR or SNCR technology as a viable compliance option in the 2017 compliance timeframe. The time requirements for an SCR retrofit exceed 18 months from contract award through commissioning. SNCR is similar to activated carbon injection (ACI) and dry sorbent injection (DSI) installation and requires about 12 months from award through commissioning. Conceptual design, permitting, financing, and bid review require additional time. A detailed analysis for a single SCR system can be found in Exhibit A-3 and an ACI system (equivalent to an SNCR) in Exhibit A-5 in: "Final Report: Engineering and Economic Factors Affecting the Installation of Control Technologies for Multipollutant Strategies", EPA-600/R-02/073, Oct 2002.[14] Note that EPA received comments that, in certain instances, individual SNCR installation could be done in 8 to 12 months from contract award. While EPA has not considered new SNCR installations to be a widely available EGU NO_X control strategy in establishing emission budgets, from both cost and compliance timing perspectives, some limited installations may be possible as a compliance option.

Shifting generation to lower NO_X- or zero-emitting EGUs, similar to operating existing post-combustion controls, uses investments that have already been made, can be done quickly, and can significantly reduce EGU NO_X emissions. For example, natural gas combined cycle (NGCC) facilities can achieve NO_X emission rates of 0.0095 lb/mmBtu, compared to existing coal steam facilities, which emitted at an average rate of 0.18 lb/mmBtu of NO_X across the 22 states included in the CSAPR Update in 2014. Similarly, generation could shift from uncontrolled coal to coal units that have SCR. Shifting generation to lower NO_X -emitting EGUs would be a cost-effective, timely, and readily available approach for EGUs to reduce NO_X emissions, and EPA analyzed EGU NO_X reduction potential from this control strategy for the CSAPR Update.

Shifting generation to lower NO_X-emitting or zero-emitting EGUs occurs in response to economic factors. As the cost of emitting NO_X increases, combined with all other costs of generation, it becomes increasingly cost-effective for units with lower NO_X rates to increase generation, while units with higher NO_X rates reduce generation. Because the cost of generation is unit-specific, this generation shifting occurs incrementally on a continuum. Consequently, there is more generation shifting at higher cost NO_X levels. Because we have identified discrete cost thresholds resulting from the full implementation of particular types of emission controls, it is reasonable to simultaneously quantify the reduction potential

[13] http://www.epa.gov/airmarkets/airtransport/CSAPR/pdfs/TSD_Installation_timing_for_LNBs_07-6-10.pdf
[14] http://nepis.epa.gov/Adobe/PDF/P1001G0O.pdf

from generation shifting strategy at each cost level. Including these reductions is important, ensuring that other cost-effective reductions (e.g., fully operating controls) can be expected to occur.

As described in the preamble, EPA limited shifting generation to units with lower NO_X emission rates within the same state as a proxy for the amount of generation that could be shifted in the near-term (i.e., 2017).

To study the potential implications of the generation shifting projected to occur as a result of implementation of the CSAPR Update, EPA reviewed all shifts in generation that were projected to occur between the base case and the $1,400 per ton cost threshold scenario used for constructing state budgets (cost threshold case). The shifts in generation between the base and cost threshold cases happen on an economic basis, whenever shifting of generation will lead to lower overall costs given a NO_X price, and thus can be studied by comparing the threshold scenario and base case results.

EPA examined generation changes from the base case to the threshold scenario at the regional level in each of the major regions that encompass the 22 states covered by the rule. Table 2 shows the changes in generation from coal and natural gas in each of these regions. As the table shows, shifts in generation are minimal. Overall, the decrease in coal generation is matched by an increase in natural gas generation from combined cycle units, and both shifts are generally only around one half of one percent. Generally, combined cycle increases are comparable to coal decreases in terms of magnitude, but are slightly larger in percentage terms because the base generation from combined cycle generation is lower than coal.

The data in Table 2 show a small shift from coal generation to natural gas generation as a result of the cost to emit NO_X assumed in the cost threshold scenario. Table 3 shows generation shifting among coal units because coal units with higher NOx rates will incur higher costs compared to coal units with lower NOx rates when a cost to emit NO_X is imposed in the model. To examine these types of changes within the units of the coal fleet, EPA first classified units by the level of projected change and then compared the resulting generation. Units were classified by whether they had changes (increases or decreases) of more than 5 percent. The number of units and generation from these units were then analyzed to determine the contribution of units with larger changes as a percentage of the overall fleet and generation level. The results of this analysis are shown in Table 3.

The regional results in Tables 2 and 3 show that potential generation shifts resulting from the policy are small compared to the typical range of year-on-year variation in generation for the ozone season, and therefore that the shifts are fully feasible in the normal course of power system planning and dispatch operations. Table 4 shows total coal and gas ozone season generation over time, using generation data submitted to EPA's Clean Air Markets Division. The absolute year over year variation in generation from all sources, and particularly for coal units and gas units when viewed separately, is clearly larger than the variations expected as a result of the update rule.

Table 2: Regional Coal and Gas Generation Changes Base to Cost Threshold Case (2018, GWh)

	Coal Steam Plants				Combined Cycle Plants			
Region	Base	Policy	Change	Percent Change	Base	Policy	Change	Percent Change
ERCOT	52,318	51,855	-463	-0.9%	76,801	77,280	479	0.6%
MISO	113,211	112,184	-1,027	-0.9%	20,952	21,893	941	4.5%
PJM	138,870	139,841	971	0.7%	86,994	87,483	489	0.6%
SERC	90,171	89,489	-682	-0.8%	109,897	111,098	1,201	1.1%
SPP	33,705	33,246	-458	-1.4%	16,895	17,375	480	2.8%
Total	428,275	426,615	-1,660	-0.4%	311,539	315,129	3,590	1.2%

Table 3: Regional Changes for Coal Unit Generation from the Base to the Cost Threshold Case (2018, GWh)

		Units with Generation Increases Greater than 5%		Units with Generation Decreases Greater than 5%	
Region	Generation from All Coal Units	Generation	Percent of All Generation	Generation	Percent of All Generation
ERCOT	52,318	0	0.0%	473	0.9%
MISO	113,211	1,330	1.2%	2,427	2.1%
PJM	138,870	2,027	1.5%	2,514	1.8%
SERC	90,171	473	0.5%	426	1.1%
SPP	33,705	0	0.0%	481	1.4%
Total	428,275	3,829	0.9%	7,471	1.7%

Table 4: Historical Regional Coal and Gas Generation

Region	2011 OS Generation (MWh)	2012 OS Generation (MWh)	2013 OS Generation (MWh)	2014 OS Generation (MWh)	2015 OS Generation (MWh)	Average Generation (MWh)	Avg Absolute Year by Year Percent Variation Relative to Average
Coal and Gas Units							
ERCOT	139,056,059	131,017,786	134,609,803	131,050,654	133,810,294	133,908,919	3%
MISO	160,949,929	156,042,518	153,290,509	147,230,881	146,926,308	152,888,029	2%
PJM	229,450,597	221,741,383	208,027,957	199,406,847	203,781,613	212,481,679	4%
SERC	233,358,240	234,646,108	206,222,693	217,363,373	224,542,889	223,226,660	5%
SPP	97,941,842	98,084,372	89,549,899	84,083,357	82,857,267	90,503,347	4%
Coal Units							
ERCOT	65,038,747	56,554,882	63,224,502	61,517,184	54,402,901	60,147,643	10%
MISO	148,334,711	133,249,813	140,020,963	136,262,295	128,886,797	137,350,916	6%
PJM	184,721,925	158,866,391	154,847,790	141,913,576	127,455,196	153,560,976	9%
SERC	148,516,082	127,689,539	121,980,881	127,428,908	114,298,673	127,982,817	8%
SPP	62,722,427	58,935,064	59,850,375	58,832,359	52,854,669	58,638,979	5%
NGCC Units							
ERCOT	61,802,830	64,931,240	63,193,163	61,164,396	70,188,494	64,256,025	6%
MISO	9,504,516	17,786,818	9,889,392	8,849,343	14,562,007	12,118,415	52%
PJM	36,865,556	53,442,540	46,836,760	50,831,308	64,972,340	50,589,701	23%
SERC	65,269,995	83,971,104	69,413,532	75,766,788	90,487,154	76,981,715	19%
SPP	18,208,854	23,909,298	17,328,211	17,373,825	21,751,986	19,714,435	21%

Feasibility Assessment: Historical Emissions Analysis to Show Compliance with Budgets

As an independent check to demonstrate EGUs' ability to comply with the CSAPR Update Rule requirements, EPA created an emissions assessment based on each unit's historical emissions. This assessment uses historical ozone season emissions to assess compliance feasibility independent of IPM modeling conducted to evaluate the rule. EPA created state-level emission estimates starting with reported unit level 2015 ozone season NO_X emissions. Committed (i.e., already announced) controls and upgrades were accounted for along with historical NO_X rates for units with existing SCRs and SNCRs. Known retirements were also included. EPA accounted for the "retired" heat input, by adding back in a comparable amount of heat input assumed to be combusted at each state's average emission rate after previous steps have been accounted for. Table 5 shows the emission estimates, by state. Column 7 shows the results of the bottom-up engineering analysis (before accounting for state-of-the-art combustion controls, or SOA CC). The totals accounting for SOA CC can be found in column 8. Each of the columns can be compared with the budgets in column 11. Comparing columns 10 and 11, for each state, the larger value is highlighted in red. The columns in Table 5 are as follows:

(1) 2015 reported unit-level ozone season NO_X emissions were summed to the state level
(2) Emissions associated with units committed to retire before January 1, 2017 were removed
(3) Emissions associated with units committed to convert from coal to gas before January 1, 2017 were reduced by 50 percent
(4) Emissions associated with units committed to add SCR before January 1, 2017 were reduced to a NO_X rate of 0.075 lb/mmBtu
(5) Emissions associated with units committed to add SOA CC before January 1, 2017 were reduced to a NO_X rate appropriate tor the individual unit
(6) Emissions associated with units that added an SCR in 2014 or 2015 were reduced to a NO_X rate of 0.075 lb/mmBtu
(7) Emissions associated with units with an existing SCR were reduced to a NO_X rate equivalent to the unit's third lowest historical ozone season NO_X rate, if that NO_X rate was lower than the unit's 2015 NO_X rate
(8) Emissions associated with units able to install SOA CC before the beginning of the 2017 ozone season period were reduced to a NO_X rate appropriate for the individual unit
(9) Emissions associated with units with an existing SNCR were reduced to a NO_X rate equivalent to the unit's third lowest historical ozone season NO_X rate, if that NO_X rate was lower than the unit's 2015 NO_X rate[15]
(10) As generation associated with retired units will need to be replaced, the heat input from retired units [in (2), above] is added to each state using the further updated state level NO_X rate at the end of (9)
(11) Each state's bottom-up analysis at the end of (10) is compared to the final CSAPR Update Rule State budgets

EPA found that after aggregating all states at the regional level, this bottom-up analysis shows that sources are about 3 percent below the sum of the CSAPR Update Rule state budgets and all states are individually below their assurance levels. This assessment confirms EPA's determination that EGUs can

[15] Although EPA did not consider the operation of idled SNCR in calculating the budgets finalized in the CSAPR Update, EPA finds that the operation of these controls is feasible by the 2017 and therefore represent a valid compliance option for EGUs subject to the CSAPR Update. As Table 5 (column 9) demonstrates, the emissions reductions associated with SNCR controls are small relative to emissions reductions achievable via other control strategies and EGUs can comply with the requirements of the CSAPR Update even without operation of SNCR.

collectively achieve the budgets finalized in the CSAPR Update by implementing a variety of control strategies that can be implemented by the 2017 ozone season.

Sources can also comply with the requirements of the CSAPR Update without implementing all of the control strategies listed above. By way of example, in Table 6, EPA compared the compliance value where sources fully operate all existing SCR controls (column 7) along with the incremental emissions associated with adding back in heat input from retired units with the budgets at this intermediate step (column 12). Aggregating all states at the regional level in this analysis, EPA finds a total of 319,377 tons which is under 1% above the total of the regional final budget (column 11) and all states are within the 21% variability limits. Given the bank of additional allowances that will be available for the 2017 compliance period, this means that sources can fully comply with the requirements of the CSAPR Update without any capital expenditures by simply turning on and operating all existing SCR controls at historical levels.

As we have demonstrated above, generation shifting provides an additional feasible method of compliance. This bottom-up analysis did not include this generation shifting, which would decrease the emissions even further.

Table 5. Bottom-Up Analysis to Show Compliance Feasibility

State	(1) 2015 NOx (tons)	(2) Retired Before 2017 (tons)	(3) Coal to Gas Conversion (tons)	(4) New SCRs (Committed) (tons)	(5) New SOA CC (Committed) (tons)	(6) SCRs Completed for 2015 Adjusted to 0.075 lbs/mmBtu (tons)	(7) 3nd Lowest OS NOx Rate with 2015 Heat Input for Existing SCRs (or 2015 NOx Rate if Lower) (tons)	(8) $1,400 SOA CC (Remedy Case) (tons)	(9) 3nd Lowest OS NOx Rate with 2015 Heat Input for Existing SNCRs (or 2015 NOx Rate if Lower) (tons)	(10) Retired Heat Input Added Back At Remaining State NOx Rate (tons)[2]	(11) Final CSAPR Update Rule EGU NO_X Emission Budgets (tons)
Alabama	20,369	16,140	14,073	14,073	14,073	14,073	13,038	12,689	12,678	13,673	13,211
Arkansas [1]	12,560	12,560	12,560	12,560	12,560	12,560	12,550	8,362	8,362	8,362	12,048
Georgia	10,786	8,602	8,602	8,602	8,602	8,602	8,244	8,139	8,139	8,291	8,481
Illinois	15,976	15,976	15,116	15,116	14,850	14,850	13,907	13,907	13,892	13,892	14,601
Indiana	36,353	35,560	34,476	31,042	31,042	31,042	25,374	25,050	25,050	25,325	23,303
Iowa	12,178	11,407	11,140	11,140	11,140	11,140	11,082	10,743	10,743	11,070	11,272
Kansas	8,136	7,751	7,736	7,736	7,736	7,565	7,556	7,556	7,556	7,845	8,027
Kentucky	27,731	26,513	25,826	25,826	25,826	25,826	21,316	21,062	20,871	21,269	21,115
Louisiana	19,257	19,253	19,098	19,098	19,098	19,098	19,062	18,337	18,247	18,250	18,639
Maryland	3,900	3,855	3,855	3,855	3,855	3,855	3,805	3,805	3,799	3,815	3,828
Michigan	21,530	16,854	16,854	16,854	16,854	16,854	16,811	15,966	15,960	17,960	17,023
Mississippi	6,438	6,438	6,438	6,438	6,438	6,438	6,394	6,296	6,296	6,296	6,315
Missouri	18,855	18,533	18,325	18,325	18,325	18,325	16,372	16,372	16,221	16,326	15,780
New Jersey	2,114	2,114	2,114	2,114	2,114	2,114	2,049	2,049	2,048	2,048	2,062
New York	5,593	5,489	5,489	5,489	5,489	5,489	5,365	5,365	5,365	5,406	5,135
Ohio	27,382	27,269	27,269	27,269	27,269	27,269	18,129	17,080	16,412	16,481	19,522
Oklahoma	13,922	13,055	13,055	13,055	13,055	13,055	13,053	12,382	12,382	13,039	11,641
Pennsylvania	36,033	36,033	35,607	35,607	35,607	32,934	17,465	17,465	17,262	17,262	17,952
Tennessee	9,201	9,201	9,201	9,201	7,779	7,779	6,817	6,569	6,569	6,569	7,736
Texas	55,409	54,441	54,441	54,441	54,441	54,441	53,245	52,504	52,265	52,647	52,301
Virginia	9,651	9,618	9,357	9,357	9,357	9,357	9,229	8,690	8,661	8,670	9,223
West Virginia	26,937	26,785	26,785	26,785	26,785	26,785	13,090	12,661	12,195	12,236	17,815
Wisconsin	9,072	8,347	8,273	7,726	7,726	7,726	7,640	7,640	7,603	7,813	7,915
CSAPR Update Region (no GA)	398,596	383,190	377,088	373,106	371,418	368,573	313,349	302,549	300,437	306,252	316,464

[1] For Arkansas, the state's 2017 budget is shown. Their final budget (2018 and beyond) is 9,210 tons.
[2] Reductions from generation shifting are not included in this bottom-up analysis

Table 6. Bottom-Up Analysis to Show Compliance Feasibility by Stopping at Step 7, Operating Existing SCR Controls at Historic Rates[1]

State	(7) 3nd Lowest OS NOx Rate with 2015 Heat Input for Existing SCRs (or 2015 NOx Rate if Lower) (tons)	(12) Retired Heat Input Added Back at Remaining State NOx Rate at this Intermediate Step (tons)	(11) Final CSAPR Update EGU NO_X Emission Budgets (tons)	(13) Intermediate Compliance Feasibility vs Final CSAPR Update Budgets (%)
Alabama	13,038	14,062	13,211	-6%
Arkansas	12,550	12,550	12,048	-4%
Georgia	8,244	8,398	8,481	1%
Illinois	13,907	13,907	14,601	5%
Indiana	25,374	25,652	23,303	-10%
Iowa	11,082	11,419	11,272	-1%
Kansas	7,556	7,845	8,027	2%
Kentucky	21,316	21,723	21,115	-3%
Louisiana	19,062	19,065	18,639	-2%
Maryland	3,805	3,822	3,828	0%
Michigan	16,811	18,919	17,023	-11%
Mississippi	6,394	6,394	6,315	-1%
Missouri	16,372	16,477	15,780	-4%
New Jersey	2,049	2,049	2,062	1%
New York	5,365	5,406	5,135	-5%
Ohio	18,129	18,206	19,522	7%
Oklahoma	13,053	13,745	11,641	-18%
Pennsylvania	17,465	17,465	17,952	3%
Tennessee	6,817	6,817	7,736	12%
Texas	53,245	53,634	52,301	-3%
Virginia	9,229	9,239	9,223	0%
West Virginia	13,090	13,134	17,815	26%
Wisconsin	7,640	7,851	7,915	1%
CSAPR Update Region (no GA)	313,349	319,377	316,464	-1%

[1] Data in Table 6 include replicates of Table 5 (columns 7 and 11) with additional comparisons (columns 12 and 13).

Appendix A: Historical Anhydrous Ammonia and Urea Costs and their Associated Cost per NO_X ton Removed in a SCR

Minimum Cost to Operate

Anhydrous NH_3 & Urea costs ($/ton) [from USDA]

year	NH_3 (anh)	Cost / ton NO_x	Urea cost	Cost / ton NO_x
1999	$ 190	$ 108	$ 165	$ 165
2000	$ 209	$ 118	$ 194	$ 194
2001	$ 385	$ 218	$ 277	$ 277
2002	$ 228	$ 129	$ 179	$ 179
2003	$ 374	$ 212	$ 258	$ 258
2004	$ 366	$ 207	$ 264	$ 264
2005	$ 394	$ 223	$ 319	$ 319
2006	$ 489	$ 277	$ 345	$ 345
2007	$ 500	$ 283	$ 445	$ 445
2008	$ 731	$ 414	$ 537	$ 537
2009	$ 640	$ 363	$ 450	$ 450
2010	$ 474	$ 269	$ 421	$ 421
2011	$ 744	$ 422	$ 501	$ 501
2012	$ 812	$ 460	$ 547	$ 547
2013	$ 877	$ 497	$ 574	$ 574
2014	$ 888	$ 503	$ 550	$ 550

USDA
http://www.nco.ne.gov/statshtml/181.htm

Sierra Club v. McCarthy
Case No. 3:15-cv-04328-JD (JSC)

Declaration of Janet G. McCabe
Attachment 4

Final Technical Support Document (TSD)
for the Cross-State Air Pollution Rule for the 2008 Ozone NAAQS
Docket ID No. EPA-HQ-OAR-2015-0500

Assessment of Non-EGU NOx Emission Controls, Cost of Controls, and Time for Compliance Final TSD

U.S. Environmental Protection Agency
Office of Air and Radiation
August 2016

1 Introduction/Purpose

The purpose of this Technical Support Document (TSD) is to discuss the currently available information on emissions and control measures for sources of NOx other than electric generating units (EGUs). This information provides more detail about why EGUs are the focus of the final rulemaking, namely the uncertainty that exists regarding whether significant aggregate NOx mitigation is achievable from non-EGU point sources by the 2017 ozone season, and the fact that the limited available information points to an apparent scarcity of non-EGU reductions that could be accomplished in this timeframe. Notwithstanding these conclusions as regards the 2017 ozone season, the EPA continues to assess the role of NOx emissions from non-EGU sources to downwind nonattainment problems.

This TSD begins by briefly discussing the non-EGU emissions inventories used in the proposed and final Cross-State Air Pollution Rule (CSAPR) Update analyses, both for the 2011 base year and 2017 future baseline assessed for this rule. The TSD then presents an evaluation of whether non-EGU emissions can be reduced in a cost-effective manner for particular categories. Then, it assesses the available NOx emission reductions from such categories and presents the category-by-category emissions reduction potential. This assessment considers and presents the annualized costs per ton of these reductions, with a focus on technologies that achieve cost-effective reductions within a range of costs similar to that evaluated for EGUs. The TSD then presents estimates of the time required to install and implement the control measures, both for comparison to the 2017 compliance timeframe, and for discussion of installation time should such measures be required in the future. It should be noted that no changes to these data or estimates have been made for this final TSD compared to the draft version of this TSD provided in the docket for the proposed rule. Finally, the TSD presents a summary of comments received on the proposed rule TSD, along with responses as appropriate.

For the reasons stated in the preamble, the data and discussion in this TSD are intended to focus on the eastern states that are included in the CSAPR Update rule. Information inclusive of western states[1] is presented where available and appropriate.

[1] For the purpose of this action, the western United States (or the West) consists of the 11 western contiguous states of Arizona, California, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington, and Wyoming, and the eastern U.S. (or East) consists of the remaining states in the contiguous U.S.

2 Background

In this section we present annual and ozone-season NOx emission inventory totals and the relative percentages for non-EGU source categories statewide and/or nationally. This information is summary in nature and is not meant to replace other, more detailed information available from the EPA, such as the EPA's 2011v6.2 Emissions Modeling Platform TSD[2] as well as the Notice of Data Availability[3] (NODA) and Regulatory Impact Analysis[4] (RIA) for the proposed and final rule.

Table 1 lists 2011 and 2017 projected NOx emissions by sector, in summary form, for the 48 contiguous states of the United States (CONUS).

Table 1: 2011 Base Year and 2017 Projected NOx Emissions by Sector (tons), for the 48 CONUS

Sector	2011 NOx, annual	2017 NOx, annual	2011 NOx, ozone season	2017 NOx, ozone season
EGU-point	2,000,000	1,500,000	942,000	689,000
NonEGU-point	1,200,000	1,200,000	515,000	502,000
Point oil and gas	500,000	410,000	213,000	172,000
Wild and prescribed fires	330,000	330,000	165,000	165,000
Nonpoint oil and gas	650,000	690,000	275,000	293,000
Residential wood combustion	34,000	35,000	3,000	3,000
Other nonpoint	760,000	730,000	204,000	211,000
Nonroad	1,600,000	1,100,000	825,000	582,000
Onroad	5,700,000	3,200,000	2,417,000	1,329,000
C3 commercial marine vessel (CMV)	130,000	130,000	58,000	58,000
Locomotive and C1/C2 CMV	1,100,000	910,000	451,000	384,000
Biogenics	1,000,000	1,000,000	630,000	630,000
TOTAL	**15,000,000**	**11,200,000**	**6,698,000**	**5,018,000**

It is clear from Table 1 that NOx emissions are projected to remain constant or decrease for most sectors in the 48 states between 2011 and 2017, and this is true whether examining annual or ozone season (OS) tons. Emissions from the non-EGU point source sector and the other nonpoint source sector are not projected to change significantly, while emissions

[2] Technical Support Document (TSD), Preparation of Emissions Inventories for the Version 6.2, 2011 Emissions Modeling Platform, August 2015, available at: https://www.epa.gov/air-emissions-modeling/2011-version-62-technical-support-document

[3] Notice of Availability of the Environmental Protection Agency's Updated Ozone Transport Modeling Data for the 2008 Ozone National Ambient Air Quality Standard (NAAQS). The official version is available in the docket for this rulemaking.

[4] Regulatory Impact Analysis for the Proposed Cross-State Air Pollution Rule (CSAPR) for the 2008 Ozone National Ambient Air Quality Standards (NAAQS) and Regulatory Impact Analysis for the Cross-State Air Pollution Rule (CSAPR) Update for the 2008 Ozone National Ambient Air Quality Standards (NAAQS). The official versions are available in the docket for this rulemaking.

from the nonpoint oil and gas source sector are projected to grow (approximately 6%)during this time period. Based on the values in Table 1, Figures 1 and 2 show the relative contributions of the various sectors to overall NOx emissions (left panel) in the CONUS and for the non-EGU sectors (right panel) for 2011 and 2017, respectively.

Figure 1: 2011 NOx emissions by sector, with further non-EGU breakout (48 states)

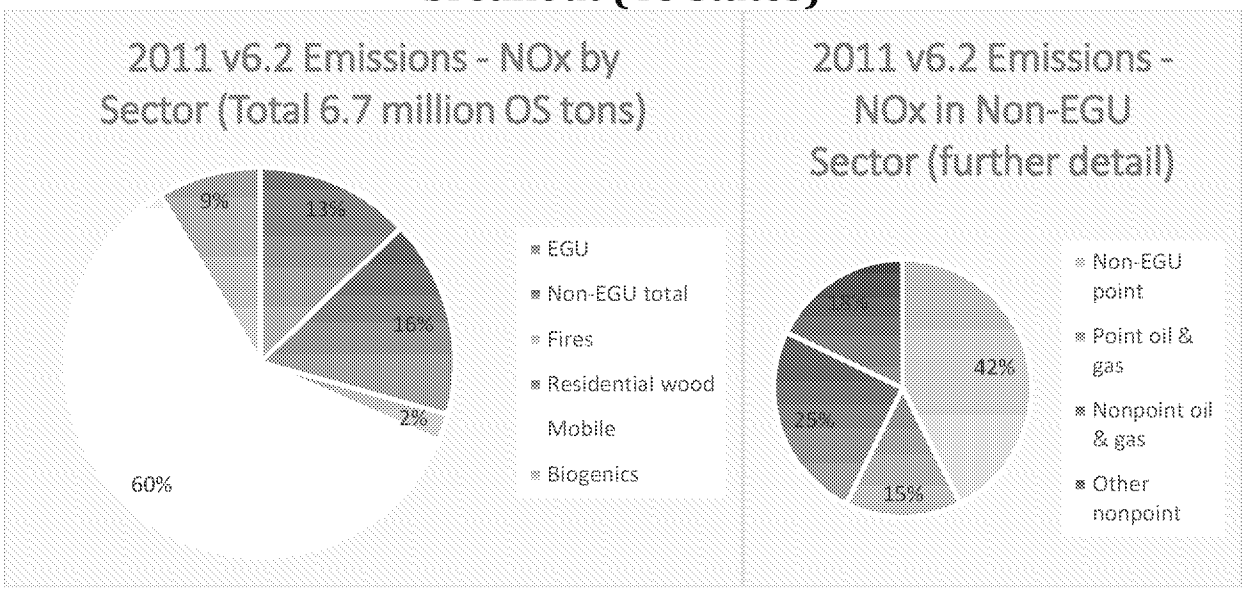

Figure 2: Projected 2017 NOx emissions by sector, with further non-EGU breakout (48 states)

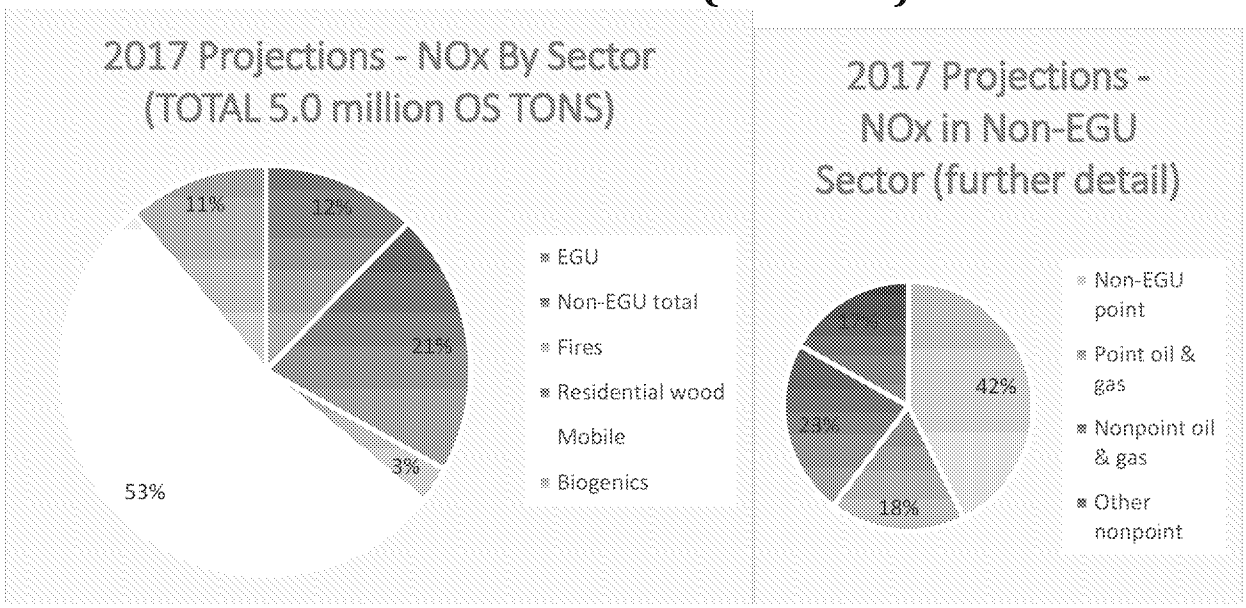

Figure 1 depicts the CONUS total ozone season NOx emissions of 6,698,000 tons in 2011 and Figure 2 depicts the CONUS total ozone season NOx emissions of 5,018,000 tons in 2017. In both 2011 and 2017, the mobile source sector has the largest NOx emissions.[5] Substantial reductions in mobile source NOx emissions are projected to occur by 2017. Mobile source emissions are projected to decrease because of sector-specific standards related to fuels, fuel economy, pollution controls, and repair and replacement of the existing fleet. Because these reductions are already expected to occur, mobile source emission reductions are not included in this analysis of non-EGU emission reductions achievable by the 2017 ozone season.

For the purposes of preliminary analysis in this TSD, "non-EGU total" refers to four separate categories of sources: non-EGU point, point oil and gas, nonpoint oil and gas, and other nonpoint (and does not include mobile sources). The oil and gas point and nonpoint sources are separated from the remaining non-EGU point and nonpoint sources due to the magnitude of their contribution to the inventory and other aspects related to the inventory development, emissions modeling, and future year projections for that industry. The point oil and gas sources are also separated out from the other non-EGU point sources according to the North American Industry Classification System (NAICS) code specified for the various sources. Note that point oil and gas sources include a variety of types of processes, and there is overlap with the processes included in the rest of the non-EGU point inventory. More information on the emissions sectors is available in the 2011v6.2 Emissions Modeling Platform TSD.

Comparing the proportions of the total inventory for non-EGUs (Figures 1 and 2), it becomes clear that, although they are decreasing in the absolute sense, non-EGU NOx emissions are becoming a larger share of overall ozone-season NOx emissions (16% in 2011 compared with 21% in 2017).

Table 2 compares statewide projected total anthropogenic NOx emissions (inclusive of all sectors listed in Table 1 with the exception of fires and biogenics) for the 2017 ozone season to non-EGU NOx emissions for the 2017 ozone season for each of the 48 contiguous United States . Totals are given for the 48 contiguous United States (the 37 eastern states plus the District of Columbia that are addressed in the rule are highlighted below in blue). Non-EGU sources in this table are broken down into two groups (non-EGU point sources, including point oil & gas sources, and other nonpoint and nonpoint oil & gas sources).

[5] The mobile source sector comprises multiple different types of sources (onroad cars & trucks, boats, ships, trains, construction equipment, mining equipment, tractors, etc.).

Table 2: Projected Total Anthropogenic Ozone-Season NOx Emissions vs. Projected Non-EGU Source Group NOx Emissions, 2017 Projections, Tons[6]

State	Total Anthropogenic	Non-EGU Point + Oil & Gas Point	% Anthro	Oil & Gas Nonpoint+ Other Nonpoint	% Anthro	Oil & Gas Point + Oil & Gas Nonpoint	% Anthro
Alabama	88,805	22,187	25	7,952	9	7,442	8
Arizona	71,906	5,015	7	2,310	3	612	1
Arkansas	69,737	13,400	19	5,308	8	9,164	13
California	236,322	29,342	12	20,220	9	3,105	1
Colorado	90,756	19,594	22	16,899	19	27,284	30
Connecticut	17,672	1,105	6	2,626	15	98	1
Delaware	7,786	628	8	615	8	0	0
District of Columbia	2,252	212	9	312	14	0	0
Florida	177,514	16,293	9	7,543	4	1,112	1
Georgia	103,536	18,816	18	4,559	4	1,495	1
Idaho	27,893	3,752	13	1,989	7	503	2
Illinois	148,178	24,668	17	15,409	10	9,424	6
Indiana	139,133	27,222	20	6,864	5	5,931	4
Iowa	70,467	7,888	11	3,861	5	153	0
Kansas	79,939	6,968	9	12,619	16	10,697	13
Kentucky	106,830	11,456	11	11,905	11	12,251	11
Louisiana	173,330	45,506	26	30,160	17	31,503	18
Maine	17,576	4,639	26	809	5	26	0
Maryland	46,029	6,213	13	3,508	8	522	1
Massachusetts	35,369	4,144	12	4,807	14	105	0
Michigan	131,486	21,867	17	12,245	9	9,398	7
Minnesota	89,328	15,541	17	6,414	7	46	0
Mississippi	54,832	11,684	21	2,122	4	6,557	12
Missouri	101,035	9,238	9	3,594	4	122	0
Montana	38,504	2,948	8	3,630	9	3,390	9
Nebraska	70,005	3,884	6	1,163	2	467	1
Nevada	28,192	4,018	14	1,003	4	115	0
New Hampshire	8,932	680	8	1,028	12	0	0
New Jersey	52,743	4,544	9	5,506	10	173	0
New Mexico	65,263	10,559	16	19,940	31	27,759	43
New York	109,910	13,738	12	14,624	13	904	1
North Carolina	98,064	15,711	16	3,657	4	1,203	1
North Dakota	74,118	4,047	5	18,125	24	19,185	26
Ohio	160,110	21,280	13	11,617	7	2,906	2
Oklahoma	131,763	32,203	24	33,178	25	51,257	39
Oregon	40,507	6,130	15	4,348	11	365	1

[6] EGUs are not provided a separate breakout in Table 2 since state-level emissions are presented in the Preparation of Emissions Inventories for the Version 6.3, 2011 Emissions Modeling Platform TSD and other TSDs for the proposed and final rules.

State	Total Anthropogenic	Non-EGU Point + Oil & Gas Point	% Anthro	Oil & Gas Nonpoint+ Other Nonpoint	% Anthro	Oil & Gas Point + Oil & Gas Nonpoint	% Anthro
Pennsylvania	174,664	23,735	14	33,508	19	26,713	15
Rhode Island	5,845	544	9	1,370	23	12	0
South Carolina	55,897	10,144	18	3,980	7	348	1
South Dakota	22,192	1,241	6	432	2	75	0
Tennessee	85,759	13,494	16	5,846	7	1,922	2
Texas	467,245	95,671	20	115,180	25	145,285	31
Tribal Data	26,717	3,799	14	0	0	3,700	14
Utah	66,486	8,004	12	9,781	15	9,349	14
Vermont	5,473	163	3	937	17	0	0
Virginia	87,754	14,039	16	7,318	8	4,775	5
Washington	75,833	8,666	11	1,150	2	164	0
West Virginia	64,839	9,678	15	12,642	19	16,723	26
Wisconsin	75,047	11,181	15	5,351	7	178	0
Wyoming	68,864	26,488	38	4,018	6	10,905	16
Eastern States	*3,411,193*	*545,649*	*16*	*418,692*	*12*	*378,171*	*11*
US Total	***4,248,436***	***673,964***	***16***	***503,980***	***12***	***465,421***	***11***

Table 2 indicates that, in the projected 2017 inventory, non-EGU sources comprising non-EGU point and point oil and gas sources are estimated to make up 16% of anthropogenic NOx emissions in the 48 contiguous United States. In individual states, the percentage of anthropogenic emissions contributed by these two non-EGUs categories range from 3% to 26% (eastern states) and from 7% to 38% (western states).

We also note that in the projected 2017 inventory, non-EGU sources comprising nonpoint oil & gas and other nonpoint sources are estimated to make up 12% of anthropogenic NOx emissions in the entire continental U.S. In individual states, the percentage of anthropogenic emissions contributed by these non-EGUs ranges from 2% to 25% (eastern states) and from 4% to 31% (western states).

The EPA's preliminary analysis indicates that NOx emissions from oil and gas sources (inclusive of emissions from the point oil and gas and nonpoint oil and gas sectors) comprise an average of 11% of the total ozone season NOx emissions inventory. For some states, this percentage increases up to 43%, with oil and gas emissions exceeding non-EGU point totals in a number of states. The key sources of NOx emissions in the oil and gas sector are from the combustion of fossil fuel (primarily drilling rigs, internal combustion (IC) engines and pipeline compressors) and flares. Please refer to the EPA's 2011v6.2 Emissions Modeling Platform TSD for more information on emissions from these sectors.

3 Preliminary Analysis

For the purposes of the proposed rule, the EPA performed a preliminary analysis to characterize whether there are non-EGU source groups with a substantial amount of available cost-effective NOx reductions achievable by the 2017 ozone season. The EPA received no comments that would substantively change this analysis, therefore there was no need to repeat this preliminary analysis for the final CSAPR Update rule.

3.1 Methodology

The EPA's preliminary analysis of potential non-EGU NOx emission reductions was performed using the Control Strategy Tool (CoST). CoST is the software tool the EPA uses to estimate the emission reductions and costs associated with future-year control strategies, and then to generate emission inventories that result from the control strategies applied. CoST tracks information about control measures, their costs, and the types of emissions sources to which they apply. The purpose of CoST is to support national- and regional-scale multi-pollutant analyses, primarily for Regulatory Impact Analyses (RIAs) of the National Ambient Air Quality Standards (NAAQS). CoST is also a component of the Emissions Modeling Framework (EMF) that was used to generate the 2017 non-EGU emissions presented above and in the Emissions Modeling Platform TSD for the proposed CSAPR Update rule. Further discussion and documentation of CoST is available on the EPA's website at http://www.epa.gov/ttnecas1/cost.htm.

Appendices to this TSD discuss recommendations for updates to CoST, including corrections for inapplicable controls, sources already controlled by state rules, sources with permit emissions limits or that have clearly identified controls in place, and sources subject to future NOx emission limits. Appendix A discusses contractor RTI International's work to review estimates for lean burn internal combustion (IC) engines, glass manufacturing, ammonia reformers, and gas turbines.[7] Appendix B discusses contractor SRA International's work on a variety of other categories including many of the others evaluated in this TSD.[8]

EPA has prepared a set of data called the Control Measure Data Base (CMDB) that is used as an important input to CoST. This data includes all control measures utilized by the tool for control strategy analysis. It should be noted that most of the NOx measures included in this report are currently in the Control Measure Data Base used by CoST, and generally do not reflect the updates suggested in these contractor reports. Obstacles to full incorporation of the recommended changes include availability of accurate costs for these measures, and to have cost equations rather than average cost/ton to estimate costs. Control efficiencies are readily available for measures, but costs, particularly those that can be estimated using equations that consider source size or capacity, often are not. In addition, the Pennsylvania

[7] "Update of NOx Control Measure Data in the CoST Control Measure Database for Four Industrial Source Categories: Ammonia Reformers, NonEGU Combustion Turbines, Glass Manufacturing, and Lean Burn Reciprocating Internal Combustion Engines," Revised Draft Report, RTI International, 2014.

[8] "Review of CoST Model Emission Reduction Estimates," SRA International, 2014; "Summary of State NOx Regulations for Selected Stationary Sources," SRA International, 2014.

Department of Environmental Protection's Additional RACT Requirements for Major Sources of NOx and VOCs rule,[9] which was recently finalized, is not included in these contractor reports. The EPA will consider whether or not to incorporate these recommendations for changes or additions to the NOx controls for non-EGUs to support NOx control efforts for future rules and other efforts. The EPA will also consider updates to reflect state emission control requirements (i.e., Pennsylvania's RACT rule). Nonetheless, the information from these reports helped inform our assessment in terms of uncertainty surrounding non-EGU emission reduction potential. Further details on the CMDB can be found on the CoST web site shown above.

For the purpose of identifying a list of non-EGU NOx source groups with controls available, the EPA ran CoST for non-EGU point sources for the 37 eastern U.S. with NOx emissions of greater than 25 tons/year in 2017. The analysis using CoST was a basis for the review of NOx control measures for non-EGUs undertaken by two different contractors for EPA. Through a contractual agreement with EPA, SRA International and RTI International provided reports within which CoST examined a number of source categories of non-EGUs with annualized control costs up to $10,000 per ton (in 2011 dollars). These reports are included in the Appendices of this TSD. CoST selected particular control technologies based on application of a least-cost criterion for control measures applied as part of the control strategy. Other NOx control measures are available for some of these categories, but on average, annualized costs for these measures were at higher cost.

3.2 Uncertainties and Limitations

The EPA acknowledges several important limitations of the non-EGU cost analysis included in this TSD, which include the following:

Boundary of the cost analysis: In this cost analysis we include only the impacts to the regulated industry, such as the costs for purchase, installation, operation, and maintenance of control equipment over the lifetime of the equipment. Recordkeeping, reporting, testing and monitoring costs are not included. Additional profit or income may be generated by industries supplying the regulated industry, especially for control equipment manufacturers, distributors, or service providers. These types of secondary impacts are not included in this cost analysis.

Cost and effectiveness of control measures: Our application of control measures reflect nationwide average retrofit factors and equipment life. We do not account for regional or local variation in capital and annual cost items such as energy, labor, materials, and others. Our estimates of control measure costs may over- or under-estimate the costs depending on how the difficulty of actual retrofitting and equipment life compares with our control assumptions. In addition, our estimates of control efficiencies for control measures included in our analysis assume that the control devices are properly installed and maintained. There is also variability in scale of application that is difficult to reflect for small area sources of emissions.

[9] Available at: http://www.pabulletin.com/secure/data/vol46/46-17/694.html

Discount (interest) rate: Because we obtain control cost data from many sources, we are not always able to obtain consistent data across original data sources. If disaggregated control cost data are not available (i.e., where capital, equipment life value, and operation and maintenance [O&M] costs are not shown separately), the EPA assumes that the estimated control costs are annualized using a 7 percent discount rate, which is the discount (interest) rate used in accordance with OMB guidance in Circular A-4. In general, we have some disaggregated data available for non-EGU point source controls. In addition, while these interest rates are consistent with OMB guidance, the actual interest rates may vary regionally or locally.

Accuracy of control costs: We estimate that there is an accuracy range of +/- 30 percent for non-EGU point source control costs. This level of accuracy is described in the EPA Air Pollution Control Cost Manual, which is a basis for the estimation of non-EGU control cost estimates included in this TSD. This level of accuracy is consistent with either the budget or bid/tender level of cost estimation as defined by the American Association for Cost Engineering (AACE) International. In addition, the accuracy of costs is also influenced by the availability of data underlying the cost estimates for individual control measures. For some control measures, we recognize that there is limited data available to generate robust cost estimates. This is reflected in the derivation of costs for some of the non-EGU NOx control measures discussed in Appendix A for this TSD.

3.3 CoST Results

The results of the CoST analysis are displayed in Table 3. In Table 3, we display the source groups selected by CoST, the Source Classification Codes (SCCs) included in those groups[10], the least-cost control technology for a given source group (selected by CoST), the current estimate (in dollars per ton, using 2011 dollars) of the annualized cost per ton NOx reduced of the control technology, the current estimate of the time necessary to install the selected control technology (not including permitting time), the estimated ozone season emissions in the East from the non-EGU source group in 2017 in the absence of the installation of the selected controls, and the estimated potential ozone season reductions in the East from the non-EGU source group in 2017 assuming the CoST selected controls could be fully installed and operational prior to the 2017 ozone season (which as discussed in more detail later, is not the case for many of the categories examined). Note that CoST does not account for installation time or time required for the permitting process. Instead it provides information on the control measures applicable to sources in the inventory, along with the cost of installation and operation and maintenance of the selected measures.

[10] The CoST results do not indicate applicability of the recommended control technology to all sources in the source group but only to the specific SCCs for which control technologies are applicable. For example, for the cement kilns source group, Biosolid Injection Technology (BSI) is applicable only for the types of cement kilns covered by the listed SCCs.

Table 3: CoST Results: Non-EGU Source Groups with NOx Reductions

Non-EGU Source Group	SCCs	Control Technology Recommended by CoST	Current estimate of NOx $/ton, CoST (2011 $)	Time to install[11] [12](excluding permitting, reporting preparation, programmatic and administrative considerations[13])	2017[14] NOx Emissions (37 States + DC), OS tons, CoST	2017 Potential Reductions [15] (37 States + DC), OS tons, CoST
Cement Kilns	30500622 (preheater kiln), 30500623 (preheater/precalciner); 39000201 (kiln/dryer); 39000288 (kiln in process coal)	Biosolid Injection Technology (BSI)	$410	Uncertain	24,760	4,207

[11] Time to install is not an output of CoST, but are rather estimates determined by the EPA based on research from a variety of sources. See, "Typical Installation Timelines for NOx Emissions Control Technologies on Industrial Sources," Institute of Clean Air Companies, December 2006 (all sources except Cement Kilns and RICE (Reciprocating Internal Combustion Engines)), "Cement Kilns Technical Support Document for the NOx FIP," EPA, January 2001 (cement kilns), and "Availability and Limitations of NOx Emission Control Resources for Natural Gas-Fired Reciprocating Engine Prime Movers Used in the Interstate Natural Gas Transmission Industry," Innovative Environmental Solutions Inc., July 2014 (prepared for the INGAA Foundation).

[12] In general, for control retrofits to non-EGU sectors, it appears that the full sector-wide compliance time is uncertain, but is longer than the installation time shown above for a typical unit. We have insufficient information on capacity and experience within the OEM suppliers and major engineering firms supply chain to offer conclusions on their availability to execute the project work for non-EGU sectors.

[13] Non-EGUs of any type – boiler or turbine – that are not currently required to monitor and report in accordance with 40 CFR Part 75 and/or not currently participating in the CSAPR program will require additional time relative to EGUs that are currently equipped with Part 75 monitoring and reporting and/or participating in the current CSAPR program. Installation of NOx monitors for the reporting of NOx mass requires the construction of platforms, CEM shelters, procurement of equipment, certification testing, and electronic data reporting programming of a data handling system. These added timing considerations for infrastructure on the non-EGU sources combined with the additional programmatic adoption measures necessary make installation of controls by the 2017 timeframe established in this rule less likely and more uncertain for industrial sources.

[14] Emissions and potential reductions for Gas Turbines ($163/ton grouping), Cement Kiln/Dryer (Bituminous Coal) ($942/ton grouping), Coal Cleaning – Thermal Dryer (2), Spreader Strokers, Petroleum Refinery Process Heaters, Incinerators, Boilers & Process Heaters, Gas-Fired Process Heaters, Coal Boilers, By-Product Coke Manufacturing, ICI Boilers – Residual Oil, Ammonia Production, Glass Manufacturing, ICI Boilers, Iron & Steel - In-Process Combustion - Bituminous Coal, Industrial Processes Miscellaneous, Catalytic Cracking, Process Heaters, & Coke Ovens, Petroleum Refinery Gas-Fired Process Heaters, Glass Manufacturing – Pressed, Glass Manufacturing – Container, Petroleum Refinery Gas-Fired Process Heaters, and RICE source groups were calculated for 2018, however they are likely to be virtually identical to projections for 2017. Non-EGU source groups with projected aggregate 2017 NOx emissions below 100 OS tons are excluded from this table.

[15] Potential reductions assume fully implemented controls by the start of the 2017 ozone season.

Cement Mfg (dry)	30500606 Industrial Processes, Mineral Products, Cement Manufacturing (Dry Process), Kilns	Selective Non-Catalytic Reduction (SNCR)	$1,255	42-51 weeks	13,006	6,501
Cement Mfg (wet)	30500706 Industrial processes, mineral products, Cement Manufacturing (Wet Process), Kilns	Mid-Kiln Firing	$73	5-7 months	7,971	2,287
Coal Cleaning – Thermal Dryer (1)	30502508 Construction Sand & Gravel, Dryer; 30501001 Industrial Processes, Mineral Products, Coal Mining, Cleaning, and Material Handling, Fluidized Bed Reactor	Low NOx Burner (LNB)	$1,125	6-8 months	503	165
Coal Cleaning – Thermal Dryer (2)	30501001 Industrial Processes, Mineral Products, Coal Mining, Cleaning, and Material Handling, Fluidized Bed Reactor	Low NOx Burner (LNB)	$1,640	6-8 months	154	63
Cement Kiln/Dryer (Bituminous Coal)	39000201 Industrial Processes, In-process Fuel Use, Bituminous Coal, Cement Kiln/Dryer (Bituminous Coal)	SNCR	$942	42-51 weeks	520	260
Iron and Steel Mills - Reheating	30300934 (303015) Primary Metal Production: Steel; 30300933	Low NOx Burner (LNB) & Flue Gas Recirculation (FGR)	$620	6-8 months	1,064	664
Steel Production	30490033 Industrial Processes, Secondary Metal Production, Fuel Fired Equipment, Natural Gas: Furnaces; 30400704 Industrial Processes, Secondary Metal Production, Steel Foundries, Heat Treating Furnace	Low NOx Burner (LNB)	$928	6-8 months	281	141
Nitric Acid Mfg	30101301 Chemical Manufacturing, Nitric Acid, Absorber Tail Gas (Pre-1970 Facilities); 30101302 Chemical Manufacturing, Nitric Acid, Absorber Tail Gas (Post-1970 Facilities)	NSCR	$900	6-14 weeks	1,290	724
Petroleum Refinery Process Heaters	30600106 Industrial Processes, Petroleum Industry, Process Heaters, Process Gas-fired	SCR-95%	$940-$1101	28-58 weeks	179	177

Gas Turbines	20200201 Natural Gas, Turbine; 20200203 Natural Gas, Turbine: Cogeneration; 20300202 Natural Gas, Turbine	Low NOx Burner (LNB)	$163	12 months	945	793
Gas Turbines	20200201 Natural Gas, Turbine; 20200203 Natural Gas, Turbine: Cogeneration; 20300202 Natural Gas, Turbine; 20300203 Natural Gas, Turbine: Cogeneration	Low NOx Burner (LNB)	$800	6-8 months	16,036	4,713
Natural Gas RICE Pipeline Compressors	20200202 Internal Combustion Engines, Industrial, Natural Gas, Reciprocating	Adjust Air to Fuel Ratio and Ignition Retard	$249	Uncertain	10,099	2,958
Natural Gas RICE Miscellaneous	20100202 Internal Combustion Engines, Electric Generation, Natural Gas, Reciprocating; 20200202 Internal Combustion Engines, Industrial, Natural Gas, Reciprocating; 20200204, Internal Combustion Engines, Industrial, Natural Gas, Reciprocating: Cogeneration; 20300201, Internal Combustion Engines, Commercial/Institutional, Natural Gas, Reciprocating	Adjust Air to Fuel Ratio and Ignition Retard	$447	Uncertain	27,600	8,085
Natural Gas RICE Pipeline Compressors, Rich Burn	20200253 Internal Combustion Engines, Industrial, Natural Gas, 4-cycle Rich Burn	NSCR	$517	Uncertain	11,758	10,571
Natural Gas RICE Pipeline Compressors, Lean Burn / Clean Burn	20200252 Internal Combustion Engines, Industrial, Natural Gas, 2-cycle Lean Burn; 20200254 Internal Combustion Engines, Industrial, Natural Gas, 4-cycle Lean Burn; 20200255 Internal Combustion Engines, Industrial, Natural Gas, 2-cycle Clean Burn; 20200256 Internal Combustion Engines, Industrial, Natural Gas, 4-cycle Clean Burn	Low Emission Combustion (LEC)	$649	Uncertain	47,321	41,169
Diesel / Dual Fuel RICE	20200401 Internal Combustion Engines, Industrial, Large Bore Engine, Diesel; 20200402 Internal Combustion Engines, Industrial, Large Bore Engine, Dual Fuel (Oil/Gas)	Ignition Retard	$1,255	Uncertain	865	216

Catalytic Cracking (1)	30600201 Industrial Processes, Petroleum Industry, Catalytic Cracking Units, Fluid Catalytic Cracking Unit	Low NOx Burner (LNB) & Flue Gas Recirculation (FGR)	$1,375	6-8 months	255	140
Spreader Strokers	10100204 External Combustion Boilers, Electric Generation, Bituminous/Subbituminous Coal, Spreader Stroker (Bituminous Coal)	SNCR	$1,390	42-51 weeks	394	158
Petroleum Refinery Process Heaters	30600106 Industrial Processes, Petroleum Industry, Process Heaters, Process Gas-fired	SCR-95%	$1,406-$1,501	28-58 weeks	161	157
Incinerators	50200102, 50200103, 50200104, 50200504, 30190013, 30190014, 50300101, 50300106, 50300112, 50300113, 50300501, 50300503, 50300504, 50300599, 50100101, 50100102, 50100103, 50100506, 50100515, 50100516, 39990024 Incineration	SNCR	$1,842	42-51 weeks	6,556	2,950
Boilers & Process Heaters	10200203, 10200217, 10300216, 10200204, 10200205, 10300207, 10300209, 10200799 External Combustion Boilers; 30190002, 30600103 Industrial Process Heaters	SCR	$2,235	28-58 weeks	13,146	10,358
Natural Gas RICE Electric Generation	20100206 Internal Combustion Engines, Electric Generation, Natural Gas, Reciprocating: Evaporative Losses (Fuel Delivery System)	Adjust Air to Fuel Ratio and Ignition Retard	$2,347	Uncertain	107	32
Catalytic Cracking (2)	30600201 Industrial Processes, Petroleum Industry, Catalytic Cracking Units, Fluid Catalytic Cracking Unit; 30600202 Industrial Processes, Petroleum Industry, Catalytic Cracking Units, Catalyst Handling System	Low NOx Burner (LNB) & Flue Gas Recirculation (FGR)	$2,369	6-8 months	274	97
Gas-Fired Process Heaters (1)	30600104 Industrial Processes, Petroleum Industry, Process Heaters, Gas-fired	SCR-95%	$2,376	28-58 weeks	211	204
Coal Boilers	10200206, 10200224, 10200225, 10300102, 10300208, 10300224, 10300225	SNCR	$2,413	42-51 weeks	1099	495

Gas-Fired Process Heaters (2)	30600104 Industrial Processes, Petroleum Industry, Process Heaters, Gas Fired	Ultra-Low NOx Burners	$2,419-$2,638	6-8 months	137	64
By-Product Coke Manufacturing	30300306 Industrial Processes, Primary Metal Production, By-Product Coke Manufacturing, Oven Underfiring	SNCR	$2,673	42-51 weeks	2,366	1,420
ICI Boilers – Residual Oil	10200401, 10200402, 10200404, 10300401, 10300402 External Combustion Boilers, Residual Oil	LNB & SNCR	$2,850	6-8 months	991	689
Ammonia Production	30100306 Industrial Processes, Chemical Manufacturing, Ammonia Production, Primary Reformer: Natural Gas Fired	SCR	$2,896	28-58 weeks	2,508	2,257
Glass Manufacturing - Flat	30501403 Industrial Processes, Mineral Products, Glass Manufacture, Flat Glass: Melting Furnace	OXY-Firing	$3,097	Uncertain	9,721	7,880
ICI Boilers	10200201, 10200202, 10200212, 10300205, 10200501, 10200504, 10200601, 10200602, 10200603, 10200604, 10201401, 10300601, 10300602, 10200701, 10200704, 10200707, 10201402 External Combustion Boilers	Low NOx Burner & SCR	$3,456	6-8 months (LNB) 28-58 weeks (SCR)	31,005	28,204
Iron & Steel - In-Process Combustion - Bituminous Coal	30300819, 30300824, 30300913, 30300914, 30301522 Industrial Processes, Primary Metal Production	SCR	$3,705	28-58 weeks	829	746
Diesel RICE Miscellaneous	20100102 Internal Combustion Engines, Electric Generation, Distillate Oil (Diesel), Reciprocating; 20100107 Internal Combustion Engines, Electric Generation, Distillate Oil (Diesel), Reciprocating: Exhaust; 20200102 Internal Combustion Engines, Industrial, Distillate Oil (Diesel), Reciprocating; 20200106 Internal Combustion Engines, Industrial, Distillate Oil (Diesel), Reciprocating: Evaporative Losses (Fuel Storage and Delivery System);	SCR	$3,814	28-58 weeks	1,091	869

	20200107 Internal Combustion Engines, Industrial, Distillate Oil (Diesel), Reciprocating: Exhaust; 20300101 Internal Combustion Engines, Commercial/Institutional, Distillate Oil (Diesel), Reciprocating; 20400403 Internal Combustion Engines, Engine Testing, Reciprocating Engine, Distillate Oil					
Catalytic Cracking, Process Heaters, & Coke Ovens	30600201, 30390004, 39000701, 39000702, 39000797	LNB & FGR	$5,199	6-8 months	1,989	1,094
Petroleum Refinery Gas-Fired Process Heaters (3)	30600104 Industrial Processes, Petroleum Industry, Process Heaters, Gas-fired, 30600106 Industrial Processes, Petroleum Industry, Process Heaters, Process Gas-fired	SCR-95%	$8,885-$9,140	28-58 weeks	370	316
Glass Manufacturing - Pressed	30501404 Industrial Processes, Mineral Products, Glass Manufacture, Pressed and Blown Glass: Melting Furnace	OXY-Firing	$6,356	Uncertain	1,001	851
Petroleum Refinery Gas-Fired Process Heaters (2)	30600104 Industrial Processes, Petroleum Industry, Process Heaters, Gas-fired, 30600106 Industrial Processes, Petroleum Industry, Process Heaters, Process Gas-fired	SCR-95%	$7,533-$8,120	28-58 weeks	362	304
Industrial Processes Miscellaneous	30600201 Industrial Processes, Petroleum Industry, Catalytic Cracking Units, Fluid Catalytic Cracking Unit; 39000701 Industrial Processes, In-process Fuel Use, Process Gas, Coke Oven or Blast Furnace	LNB & FGR	$4,026	6-8 months	871	479
Glass Manufacturing - Container	30501402 Industrial Processes, Mineral Products, Glass Manufacture, Container Glass: Melting Furnace	OXY-Firing	$7,481	Uncertain	3,107	2,628
Petroleum Refinery Gas-	30600104 Industrial Processes, Petroleum Industry, Process Heaters, Gas-fired; 30600106 Industrial	SCR-95%	$5,609-$5,884	28-58 weeks	372	338

Fired Process Heaters (1)	Processes, Petroleum Industry, Process Heaters, Process Gas-fired					
Taconite Ore Processing	30302351, 30302352, 30302359 Industrial Processes, Primary Metal Production, Taconite Ore Processing, Induration	SCR	$6,449	28-58 weeks	1,188	991
Diesel RICE Electric Generation	20200102 Internal Combustion Engines, Electric Generation, Distillate Oil (Diesel), Reciprocating	SCR	$1,499	28-58 weeks	778	622

3.4 Discussion of Non-EGU Source Groups

The below discussion utilizes the information in Table 3 in order to assess whether significant aggregate NOx mitigation is achievable from non-EGU sources by the 2017 ozone season.

It is clear that a number of source categories have been identified by CoST using the least-cost procedure that have the potential for non-EGU stationary source emissions reductions. There are some notable source categories that have the potential for substantial non-EGU stationary source emissions reductions below $10,000 per ton.[16] However, for the purposes of this analysis, the EPA did not further examine control options above $3,400 per ton. This is consistent with the range we analyzed for EGUs in the proposed and final rules, and is also consistent with what the EPA has identified in previous transport rules as highly cost-effective, including the NOx SIP call.[17] Again, this was done because the objective of this analysis is to characterize whether significant aggregate NOx mitigation is achievable from non-EGU sources by the 2017 ozone season, so we focused the search on categories with highly cost-effective technologies. This focus excludes several source groups with high emissions reduction potential because reductions from those source groups are not available for $3,400 per ton or less, including: ICI boilers using SCR & LNB; Catalytic Cracking, Process Heaters, & Coke Ovens using LNB & FGR; and Pressed and Container Glass Manufacturing using OXY-Firing.

At a cost level of $3,400 per ton or less, there are a number of source groups with substantial reduction potential. However the table also identifies several source groups whose reduction potential is not significant, and which the EPA did not weigh heavily in assessing the aggregate non-EGU NOx emission reduction potential. This is because the aggregate potential reductions from these "insignificant" source groups is small. These "insignificant" source groups comprise those source groups with many small sources, as well those containing a limited number of larger sources; for either of these types of groups, potential aggregate emission reductions are small relative to reductions available from other source categories. The EPA does not believe that small sources have significant emission reduction potential in the aggregate because most small sources emit less than 100 tons of NOx per year. (It is worth noting that small sources account for a significant percentage of the total number of non-EGU point sources. See Appendix A/B for more information on the number of sources within certain states.) The EPA therefore excludes from the focus of this analysis these insignificant source groups, namely, those with aggregate potential reductions of 1,000 tons per year or less (which represents less than 0.1 percent of the anthropogenic ozone season inventory).

The EPA will now focus on the several source groups with significant cost-effective reductions identified in Table 3. These source groups include cement kilns, two types of cement manufacturing (dry and wet), gas turbines, four separate groups of natural gas reciprocating IC engines (RICE), incinerators, boilers & process heaters, by-product coke

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[16] $10,000 per ton represents the cost/ton for Best Available Control Technology (BACT) determinations, which usually do not exceed $10,000/ton in the Eastern U.S.

[17] $3,400 per ton represents the $2,000 per ton value (in 1990 dollars) used in the NOx SIP call, adjusted to the 2011 dollars used throughout this proposal Adjustment of costs was made using the Chemical Engineering Plant Cost Index (CEPCI) annual values for 1990 and 2011.

manufacturing, ammonia production, and flat glass manufacturing. These source groups are listed below with their control technologies, estimated annualized control costs, and estimated installation time. These groups have been organized into 7 categories for clarity, based on either common control technologies (categories 1 through 6) or similarity of source groups (category 7).

Category 1	**Control Tech.**	**Est. Cost**	**Est. Inst. Time**
-Cement Mfg (dry)	SNCR	$1,255	42-51 weeks
-Incinerators	SNCR	$1,842	42-51 weeks
-By-Product Coke Manufacturing	SNCR	$2,673	42-51 weeks
Category 2			
-Cement Kilns	Biosolid Injection Technology (BSI)	$410	Uncertain
Category 3			
-Gas Turbines	Low NOx Burner (LNB)	$800	6-8 months
Category 4			
-Cement Mfg (wet)	Mid-Kiln Firing	$73	5-7 months
Category 5			
-Boilers & Process Heaters	SCR	$2,235	28-58 weeks
-Ammonia Production	SCR	$2,896	28-58 weeks
Category 6			
-Glass Manufacturing - Flat	OXY-Firing	$3,097	Uncertain
Category 7			
-Gas RICE Pipeline Compressors	Adjust AFR and Ignition Retard	$249	Uncertain
-Gas RICE Miscellaneous	Adjust AFR and Ignition Retard	$447	Uncertain
-Gas RICE Pipeline Compressors, Rich Burn	NSCR	$517	Uncertain
-Gas RICE Pipeline Compressors, Lean/Clean Burn	Low Emission Combustion (LEC)	$649	Uncertain

The EPA makes the following observations about the potential reductions from these significant cost-effective categories.

The source groups listed in Category 1 would utilize SNCR as the recommended control technology. The time necessary to install SNCR equipment is generally well known. A typical installation timeline of 42-51 weeks is generally needed to complete a SNCR project

going from the bid evaluation through startup, which installation timeline is specific to non-EGUs. Based on this fact alone (which does not consider additional time likely necessary for permitting or installation of monitoring equipment), the ability for SNCR technology to be installed and operational in time for the 2017 ozone season seems very unlikely.

The source group listed in Category 2 contains a specific source of uncertainty in regards to biosolid injection technology (BSI). Due in large part to the lack of widespread use of this control technology, research performed by the EPA has been unable to uncover any reliable information on the time required to install the necessary BSI equipment on cement kilns. Compliance timing with regard to biosolid injection technology should therefore be considered extremely uncertain. Based on this fact alone (and aside from additional time likely necessary for permitting or installation of monitoring equipment), the ability for this technology to be installed and operational at all facilities in this category in time for the 2017 ozone season is unknown.

The source group listed in Category 3 would utilize LNB as the recommended control technology, with a necessary installation time of approximately 6-8 months. Some of the LNB combustion control technology identified for non-EGU sources reflects a different technology that may have different timing considerations than that considered for EGU boilers. For instance, LNB at non-EGU combustion turbines in this assessment refers to "dry low-NOx burners" (DLNB) which, in addition to the usual diffusion burner, typically also include provisions to "premix" natural gas and combustion air prior to combustion. In spite of the similarity in naming, this is a different technology than the LNB technology examined and assumed for reductions at EGU boilers. Therefore, the same timing assumptions assumed and demonstrated on the EGU side are not necessarily applicable to combustion control technology for non-EGU sources. Moreover, non-EGUs of any type – boiler or turbine – that are not currently required to monitor and report in accordance with 40 CFR Part 75 will require additional time relative to EGUs that are currently equipped with Part 75 monitoring and reporting (such as those EGUs covered under federal transport rulemakings and this one). Installation of NOx monitors for the reporting of NOx mass requires the construction of platforms, Continuous Emissions Monitoring (CEM) shelters, procurement of equipment, certification testing, and electronic data reporting programming of a data handling system. These timing considerations on the non-EGU sources make installation of controls by the 2017 timeframe established in this rule less likely and more uncertain for industrial sources.

The source group listed in Category 4 would utilize mid-kiln firing as the recommended control technology. A fairly well-known aspect is the time necessary to install this equipment; typically, 5-7 months is needed to complete a mid-kiln firing project going from the bid evaluation through startup. However, the above-discussed issues regarding monitoring and reporting of NOx mass on non-EGU sources that currently lack such monitoring equipment make installation of controls by the 2017 timeframe of this rule less likely and more uncertain for industrial sources such as those in the cement manufacturing (wet) source group.

The source groups listed in Category 5 would utilize SCR as the recommended control technology, with an installation time of 28-58 weeks for SCR (dependent on exhaust gas flow rates; larger systems require longer installation times). Based on the installation time frame alone (which does not consider additional time likely necessary for permitting or installation of monitoring equipment), the ability for SCR technology to be installed and operational in time for the 2017 ozone season seems unlikely. In addition to this uncertainty, the above-discussed issues regarding monitoring and reporting of NOx mass on non-EGU sources that currently lack such monitoring equipment make installation of controls by the 2017 timeframe established in this rule less likely and more uncertain for industrial sources such as those in Category 5 source groups.

The source group listed in Category 6 would utilize OXY-Firing as the recommended control technology, with an uncertain necessary installation. A specific source of uncertainty with regard to the estimated installation time of this control technology is that OXY-Firing is generally installed only at the time of a furnace rebuild, which rebuilds may occur at infrequent intervals of a decade or more.[18] In addition to this uncertainty, the above-discussed issues regarding monitoring and reporting of NOx mass on non-EGU sources that currently lack such monitoring equipment make installation of controls by the 2017 timeframe established in this rule less likely and more uncertain for industrial sources such as those in Category 6 source group.

Finally, the source groups listed in Category 7 are all RICE. While some of the recommended control technologies may involve installation timelines that are relatively short on a per-engine basis, there is substantial uncertainty in large-scale installation over numerous sources. References indicate that implementation of NOx controls of any type on a large number of RICE will require significant lead time to train and develop resources to implement emission reduction projects; market demand could significantly exceed the available resource base of skilled professionals.[19] Additionally, in order not to disrupt pipeline capacity, engine outages must be staggered and scheduled during periods of low system demands for those engines involved in natural gas pipelines (as is the case with 3 of the 4 RICE source groups with significant cost-effective reductions). In addition to this uncertainty, the above-discussed issues regarding monitoring and reporting of NOx mass on non-EGU sources that currently lack such monitoring equipment make installation of controls by the 2017 timeframe established in this rule less likely and more uncertain for industrial sources such as RICE.

4 Summary of Comments Received on Proposed Rule TSD

The EPA received relatively few comments on the draft Assessment of Non-EGU NOx Emission Controls, Cost of Controls, and Time for Compliance TSD provided in the docket for this rule. None of these comments changed our conclusions reached in the draft TSD, as commenters generally agreed with the EPA's assessment with respect to the regulation of

[18] See Appendix B.

[19] "Availability and Limitations of NOx Emission Control Resources for Natural Gas-Fired Reciprocating Engine Prime Movers Used in the Interstate Natural Gas Transmission Industry," Innovative Environmental Solutions Inc., July 2014.

non-EGUs in this rule. Detailed responses to these comments can be found in the response to comments document available in the docket for this final rule. A brief discussion of one comment containing data on control information is presented below.

Commenter Fuel Tech, Inc. (FTI) provided information on the installation time required for SNCR equipment, stating that "FTI has provided SNCR systems in 8-12 months (from contract award to performance guarantee certification)..."[20] This timeframe is largely consistent with the 42-51 week (9.7-11.7 month) timeframe estimate presented by the EPA in the draft TSD.

In addition, FTI provided information on a range of SNCR cost per ton based on installations from 2010 to 2015 on non-EGU sources, stating that "these recent examples show NOx reduction cost effectiveness in the range of $2,200 to $2,900 per ton of NOx removed on an annual basis."[21] FTI's "Figure 1"[22] also provided a chart of cost effectiveness ($/ton) versus unit size (mmBTU/hr) for both annual and ozone season NOx. A log fit of the ozone season curve shows cost effectiveness in the range of approximately $2,000 to approximately $6,500 per ton of ozone season NOx removed, with installations tending to be more expensive for smaller unit sizes. Although FTI's estimates are based on different interest rates and capital investments than our estimates, they are worthwhile to note in comparison to our stated estimate of $1,300 to $2,700 per ton of NOx removed on an ozone season basis.

5 Conclusion

The above preliminary analysis performed by the EPA indicates that uncertainty exists regarding whether significant aggregate NOx mitigation is achievable from non-EGU point sources by the 2017 ozone season. Reducing this uncertainty requires further understanding of potentially available control measures that could have annualized costs of $3,400 per ton or less. In addition, further implementation of the recommendations in the Appendices to this TSD, the extent of which as determined by the EPA to be needed, may also reduce our uncertainty regarding the credibility of data for control measures included in future non-EGU NOx control strategy efforts. Please note that while the information in these Appendices supports our conclusion regarding whether significant aggregate NOx mitigation is achievable from non-EGU point sources by the 2017 ozone season, this final TSD is making no conclusions about the recommendations for further improvements.

While a number of source groups with control options were identified, the EPA did not further examine control options above $3,400 per ton, consistent with the range analyzed for EGUs in the proposed and final rules and with what the EPA has identified in previous transport rules as highly cost-effective. A number of source groups were identified at a cost level of $3,400 per ton or less, however the EPA believes several of these source groups may not be significant. Of the remaining source groups, a variety of factors indicated the ability for control technology to be installed and operational in time for the 2017 ozone

[20] EPA-HQ-OAR-2015-0500-0356, page 3.
[21] EPA-HQ-OAR-2015-0500-0356, page 7.
[22] EPA-HQ-OAR-2015-0500-0356, page 6.

season seemed unlikely, with an overarching consideration being that non-EGUs of any type that are not currently required to monitor and report in accordance with 40 CFR Part 75 will require additional time for implementation relative to EGUs that are currently equipped with Part 75 monitoring and reporting. These added timing considerations on the non-EGU sources make installation of controls by the 2017 timeframe established in this rule less likely and more uncertain for industrial sources.

With all of these factors being considered, the limited available information points to an apparent scarcity of non-EGU reductions that could be accomplished by the beginning of the 2017 ozone season. As noted in the proposed and final rule, this conclusion has led the EPA to focus the final FIPs on EGU reductions. Both the proposal and the final rule acknowledge that this may not be the full remedy that is ultimately needed to eliminate an upwind state's significant contribution to nonattainment or interference with maintenance of the 2008 ozone NAAQS (or, for that matter, the 2015 ozone NAAQS) in other states. Emissions reductions from the non-EGU categories discussed above may be necessary, though on a longer timeframe than the 2017 compliance deadline being finalized in this rulemaking. The EPA intends to explore this question further in future ozone transport rulemakings.

Sierra Club v. McCarthy

Case No. 3:15-cv-04328-JD (JSC)

Declaration of Janet G. McCabe

Attachment 5

Please note that the following includes active and long-term projects for EPA's Office of Air and Radiation as of publication of the Fall 2016 regulatory agenda. Some of these dates are target dates and may have shifted, or the project may be completed.

The regulatory agenda is available at https://www.reginfo.gov/.

1. **Section 610 Review of Control of Hazardous Air Pollutants From Mobile Sources (Completion of a Section 610 Review) (2060-AS88)**

The rulemaking "Control of Hazardous Air Pollutants From Mobile Sources" was finalized by the EPA in February 2007 (72 FR 8428, February 26, 2007). This program established stringent new controls on gasoline, passenger vehicles, and gas cans to further reduce emissions of benzene and other mobile source air toxics. The EPA developed a Small Entity Compliance Guide, which provides descriptions of the regulations and small entity provisions, Q&As, and other helpful compliance information. This new entry in the regulatory agenda announces that EPA has reviewed this action pursuant to section 610 of the Regulatory Flexibility Act (5 U.S.C. 610) to determine if the provisions that could affect small entities should be continued without change, or should be rescinded or amended to minimize adverse economic impacts on small entities. As part of this review, EPA solicited comments on the following factors: (1) The continued need for the rule; (2) the nature of complaints or comments received from the public concerning the rule; (3) the complexity of the rule; (4) the extent to which the rule overlaps, duplicates, or conflicts with other Federal, State, or local government rules; and (5) the degree to which the technology, economic conditions or other factors have changed in the area affected by the rule. The EPA received one comment about the program unrelated to the impact of the rulemaking on small entities. The current mobile source air toxics standards program provided substantial flexibility for regulated entities, especially small entities, and does not warrant revision at this time. See EPA's report summarizing the results of this review in the docket EPA-HQ-OAR-2016-0175. This docket can be accessed at www.regulations.gov.

End Review 11/00/2016

2. **Mid Term Evaluation of the Model Year 2022-21025 Light Duty Vehicle Greenhouse Gas Standards (2060-AS97)**

As part of the rulemaking establishing the model year (MY) 2017-2025 light-duty vehicle GHG standards in 2012, EPA made a regulatory commitment to conduct a Midterm Evaluation (MTE) of the standards established for the later years of the program - 2022-2025. EPA will coordinate with the National Highway Traffic Safety Administration (NHTSA) and the California Air Resources Board (CARB) in conducting the MTE.

Through the MTE, EPA will decide whether the standards for model years 2022-2025, established in 2012, are still appropriate given the latest available data and information. EPA's decision could go one of three ways: the standards remain appropriate, the standards should be less stringent, or the standards should be more stringent. EPA will examine a wide range of factors, such as developments in powertrain technology, vehicle electrification, light-weighting and vehicle safety impacts, the penetration of fuel efficient technologies in the marketplace, consumer acceptance of fuel efficient technologies, trends in fuel prices and the vehicle fleet, employment impacts, and many others.

EPA's regulations require several formal steps in the MTE process, including several opportunities for public input. The first step in the process was the issuance jointly by EPA, NHTSA, and CARB of a Draft Technical Assessment Report (TAR) for public comment in July 2016. The Draft TAR is a technical report, not a decision document, and examines a wide range of factors relevant to the 2022-2025 standards. Public input on the Draft TAR, along with any new data and information, will inform a subsequent Proposed Determination which will undergo public comment, and a Final Determination, required by EPA's regulations by April 2018. The MTE will be conducted through a collaborative, data-driven, and transparent process. To gather the most robust data and information to inform the MTE, EPA, in coordination with NHTSA and CARB, is conducting extensive outreach with a wide range of stakeholders including auto manufacturers, automotive suppliers, NGOs, consumer groups, labor unions, automobile dealers, states, and others.

Notice 07/17/2016 (81 FR 49217)

Second Notice To Be Determined

3. New Source Performance Standards (NSPS) and Emission Guidelines (EG) for Large Municipal Waste Combustors (MWCs) – Risk and Technology Review (2060-AO18)

This action will address the agency's residual risk and technology review (RTR) of the Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources for Large Municipal Waste Combustors. The New Source Performance Standards (NSPS), subpart Eb, and the Emission Guidelines, subpart Cb, were promulgated pursuant to section 129 of the Clean Air Act (CAA) on May 10, 2006. The NSPS and emission guidelines established emission limitations based on maximum achievable control technology for controlling emissions of hazardous air pollutants and criteria pollutants from large municipal waste combustors. The regulated pollutants, as required under CAA section 129(a)(4), are particulate matter, sulfur dioxide, hydrogen chloride, oxides of nitrogen, carbon monoxide, lead, cadmium, mercury, and dioxins/furans. This action will implement the residual risk review requirements of CAA section 129(h)(3) and the technology review requirements of CAA section 129(a)(5). The statute directs the EPA to promulgate emission standards under CAA 112(f) for a category of solid waste incineration units if such standards are required under CAA section 112(f). Any such standards are to be promulgated within eight years after promulgation of the original standards under CAA section 129. CAA section 129(h)(3) also specifies that only the pollutants listed under CAA section 129(a)(4) shall be considered and regulated, if required, under the residual risk review. CAA section 129(a)(5) requires the EPA to review and revise the standards and other requirements as necessary, no less often than every five years.

Notice 03/20/2007 (72 FR 13016)

NPRM 07/00/2017

4. **Air Quality: Revision to Definition of Volatile Organic Compounds -- Exclusion of Benzotrifluoride (2060-AR93)**

This direct final with parallel proposal would revise EPA's definition of Volatile Organic Compounds (VOCs) for purposes of preparing State Implementation Plans (SIPs) to attain the National Ambient Air Quality Standards (NAAQS) for ozone. The action would add benzotrifluoride (also known as trifluorotoluene, CASNR 98-08-8) to the list of compounds excluded from the definition of VOC on the basis that this compound makes a negligible contribution to tropospheric ozone formation. VOC exemption petition submitted by Kowa American Corp. (Prior: OCC) on 7/29/12.

NPRM 08/00/2017

Direct Final Rule 08/00/2017

5. **Petition to Add n-Propyl Bromide to the List of Hazardous Air Pollutants (2060-AS26)**

The Clean Air Act (CAA) requires the EPA to regulate compounds that are listed as air toxics, also known as hazardous air pollutants (HAP). Air toxics are those pollutants known, or suspected, to cause cancer and other serious human health problems. The CAA allows the EPA to consider petitions to modify the list, by adding or removing substances. Individuals seeking to add a substance must demonstrate the substance is an air pollutant and that emissions, ambient concentrations, bioaccumulation or deposition of the substance are known to cause or may reasonably be anticipated to cause adverse effects to human health or adverse environmental effects. The Agency received two petitions to add n-Propyl Bromide to the HAP list from the Halogenated Solvents Industry Alliance in October 2010 and from the State of New York in November 2011. Once the EPA receives a petition, it conducts two reviews: (1) a completeness review, to determine whether there is sufficient information on which to base a decision; and, (2) a technical review, to evaluate the merits of the petition. The petitions were determined to be complete and a notice of receipt of a complete petition was published in the Federal Register on 2/6/15. This action addresses the technical review of the petitions based on the CAA section 112(b)(3) requirements.

Notice 12/00/2016

6. **National Emissions Standards for Hazardous Air Pollutants From Secondary Lead Smelting (2060-AS32)**

This action addresses reconsideration petitions filed by environmental and industry groups following the January 5, 2012, Residual Risk and Technology Review for Secondary Lead Smelters. The EPA agreed to reconsider limited aspects of the final rule.

NPRM 04/00/2017

Final Rule 01/00/2018

7. Risk and Technology Review for the National Emission Standards for Hazardous Air Pollutants for Pulp and Paper Combustion Sources (2060-AS46)

Abstract: This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Pulp and Paper Combustion Sources. The Pulp and Paper Combustion Sources NESHAP, subpart MM, was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) on 1/12/01, and amended in 2003. The NESHAP established emission limitations based on maximum achievable control technology (MACT) for controlling emissions of hazardous air pollutants (HAP) from recovery furnaces, lime kilns and smelt dissolving tanks at kraft, soda, sulfite and semi-chemical pulp mills. The main HAP emitted from these sources are HAP metals. This action will implement the residual risk review requirements of CAA section 112(f)(2) and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. Pursuant to a court order, the EPA is obligated to complete the final action by 10/1/17.

NPRM 12/00/2016

Final Rule 10/00/2017

8. Revisions to the Prevention of Significant Deterioration and Title V Greenhouse Gas (GHG) Permitting Regulations and Establishment of a GHG SER for GHG Emissions Under the PSD Program (2060-AS62)

The EPA is taking this action to propose a Greenhouse Gas (GHG) Significant Emission Rate (SER) under the Prevention of Significant Deterioration (PSD) air permitting program and propose certain revisions to the provisions of the Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas (GHG) Tailoring Rule. The proposed GHG SER would establish an appropriate threshold level below which Best Available Control Technology (BACT) is not required for a source's GHG emissions. The Tailoring Rule revisions will allow us to revise certain GHG permitting regulatory provisions, which include the PSD GHG Plantwide Applicability Limits (PALs), and will also implement a recent Court of Appeals for the District of Columbia decision that ordered, among other things, that the Tailoring Rule regulations under review be vacated to the extent they

require a stationary source to obtain a title V permit solely because the source emits or has the potential to emit GHG above the applicable thresholds.

NPRM 10/03/2016 (81 FR 68110)

NPRM Comment Period End 12/02/2016

Final Rule To Be Determined

9. Renewables Enhancement and Growth Support Rule (2060-AS66)

This action proposes to make numerous changes to promote the production of renewable fuels and clarify certain requirements under the RFS program. This action would propose to allow for feedstocks partially converted at a facility other than a renewable fuel production facility to be fully converted at a renewable fuel production facility into finished renewable fuel. These partially converted feedstocks are referred to as biointermediate feedstocks. Further, this action would also propose to add new registration, recordkeeping, and reporting requirements for certain renewable fuel production facilities using carbon capture and storage (CCS) if the EPA were to allow CCS as a lifecycle GHG emissions reduction technology in the context of the RFS program. Additionally, this action also proposes to require obligated parties to report a breakdown of their gasoline, diesel, and heating oil production; provide an additional RIN-generating pathway that is an extension of an existing pathway; and make numerous technical corrections. Finally, this action would implement fuel quality specifications for blends containing 16 to 83 volume percent ethanol. This action would provide substantial additional flexibility for ethanol flex fuel (EFF) producers that accommodate current market realities while continuing to ensure EFF quality is consistent with controlling pollution when used in flexible fuel vehicles.

Final Rule 12/00/2017

10. Electronic Reporting and Recordkeeping Requirements for National Emission Standards for Hazardous Air Pollutants, Phase I (2060-AS67)

The EPA is proposing the electronic submission of performance testing information already collected by industry by revising the reporting requirements in 40 CFR part 63 for national emission standards for hazardous air pollutants (NESHAP). In addition to performance test data, this rulemaking proposes to require the electronic submission of other selected compliance data, such as excess emissions reports, that are already being compiled and submitted by industry to regulatory authorities. These data can be used for regulation development, control strategy development, rule effectiveness studies, risk analyses and other air pollution control activities. Revision of the subparts in 40 CFR part 63 will be handled by a phased approach. This rulemaking is the first phase in the revision process and will address select subparts in 40 CFR part 63. A similar rulemaking for the subparts in 40 CFR part 60 was proposed on March 20, 2015.

NPRM 09/00/2017

Final Rule 09/00/2018

11. Stationary Engine NESHAP/NSPS Amendments (2060-AS77)

On May 1, 2015, the U.S. Court of Appeals for the D.C. Circuit vacated the provisions in the RICE NESHAP and NSPS allowing emergency engines to operate for up to 100 hours per year for emergency demand response when an Energy Emergency Alert Level 2 has been called, and in situations where the voltage or frequency deviates by 5 percent or greater below standard. Subsequent to the court decision, EPA asked the court for a voluntary remand of provisions in the same regulations allowing emergency engines to operate for up to 50 hours per year to mitigate local transmission and/or distribution limitations in a local area or region. This action will address the provision for operation for up to 50 hours per year for local reliability, for which EPA has requested a voluntary remand.

NPRM 09/00/2017

Final Rule 08/00/2018

12. National Emission Standards for Hazardous Air Pollutant Emissions: Manufacture of Amino/Phenolic Resins (2060-AS79)

The EPA promulgated amendments to the National Emission Standards for Hazardous Air Pollutants (NESHAP): Manufacture of Amino/Phenolic Resins on September 16, 2015. The Sierra Club, Georgia-Pacific and Tembec BTLSR filed petitions for reconsideration. On March 27, 2015, the EPA granted reconsideration of this rule on issues related to the emission standards for continuous process vents and pressure relief devices (PRDs). This proposal would address the issues raised in the petitions and give an opportunity for public comment on the EPA's responses.

NPRM 01/00/2017

Final Rule 09/00/2017

13. Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area Classifications and State Implementation Plan Requirements (2060-AS82)

This proposed rule will address a range of implementation requirements for the 2015 National Ambient Air Quality Standards (NAAQS) for ozone, including the nonattainment area classification system, and the timing of State Implementation Plan (SIP) submissions. It will also discuss and outline relevant guidance on meeting the Clean Air Act's requirements pertaining to attainment demonstrations, reasonable further progress,

reasonably available control measures, nonattainment new source review, and emission inventories. Other issues addressed in this proposed rule are the potential revocation of the 2008 ozone NAAQS and anti-backsliding requirements that would apply if the 2008 NAAQS are revoked. The items covered in this rulemaking have been covered in similar rulemakings for two prior 8-hour ozone NAAQS (1997 and 2008).

NPRM 11/00/2016

14. National Emission Standards for Hazardous Air Pollutants: Publicly Owned Treatment Works Risk and Technology Review (2060-AS85)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Publicly Owned Treatment Works (POTW). The POTW NESHAP, subpart VVV, was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) on 10/26/99. The NESHAP established emission limitations and work practice requirements based on maximum achievable control technology (MACT) for controlling emissions of hazardous air pollutants (HAP) from wastewater treatment units up to, but not including the secondary influent pumping station or the secondary treatment units. The HAP emitted from POTW include methanol, chloroform, acetaldehyde, methylene chloride, toluene and xylenes. This action will implement the residual risk review requirements of CAA section 112(f)(2) and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. Pursuant to a consent decree with Sierra Club and California Communities Against Toxics, the EPA is obligated to complete this proposed action by 12/8/16.

NPRM 12/00/2016

Final Rule 10/00/2017

15. Air Quality: Revision to Definition of Volatile Organic Compounds -- Exclusion of Dimethyl Succinate (DMS) (2060-AS87)

This direct final with parallel proposal would address whether to revise the Environmental Protection Agency's definition of volatile organic compounds (VOC) for purposes of preparing State Implementation Plans to attain the National Ambient Air Quality Standards for ozone. The action would address whether to add dimethyl succinate (DMS) to the list of compounds excluded from the regulatory definition of VOC on the basis that this

compound may make a negligible contribution to tropospheric ozone formation. A VOC exemption petition was submitted by Invista on December 14, 2011.

NPRM 12/00/2016

Direct Final Rule 12/00/2016

16. Revisions to Method 202: Dry Impinger Method for Determining Condensable Particulate Emissions From Stationary Sources (2060-AS91)

States are now required to account for Condensable Particulate Matter (CPM) in establishing emissions limits for particulate matter (PM2.5 and PM10) in all applicable Prevention of Significant Deterioration (PSD) and nonattainment New Source Review (NSR) permits issued. The NSR regulations require that the measurement and control of PM from major stationary sources and major modifications include the condensable component for both PM2.5 and PM10 emissions. Accordingly, CPM must be considered (1) in the Prevention of Significant Deterioration (PSD) program in areas that are classified attainment or unclassifiable for the 1997 annual secondary, 2008 24-hour primary or secondary or 2012 annual primary PM2.5 NAAQS or the PM10 NAAQS, and (2) in nonattainment NSR in areas that are nonattainment for any of the PM2.5 or PM10 NAAQS. Stakeholders have expressed concern that source-specific CPM test results obtained with Method 202 could include positive bias that translates into overestimations of emissions. Some of these stakeholder issues involve the quality of reagent chemicals used in the method, while other issues involve equipment preparation or contamination pre- and post-sampling. Such overestimation could inappropriately affect determinations as to whether major source nonattainment NSR or PSD applies to a new source or modification, required air quality impact analyses and emission offset requirements. The EPA is considering revising sections of Method 202 including, but not limited to, the proof blank train preparation and recovery requirements in the method and use of the proof and field train blanks. The proposed revision would address consistency in the execution of Method 202, which has shown wide variation in its implementation, and allow many performance-based options and procedures.

NPRM 11/00/2016

Final Rule 08/00/2017

17. Portland Cement Risk and Technology Review (2060-AS92)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Portland Cement Manufacturing. The Portland Cement Manufacturing NESHAP, subpart LLL, initially was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) in 1999. The EPA promulgated the current version of the rule on 9/9/10, with amendments on 2/12/13 and 07/27/15. The NESHAP established emission limitations and work practice requirements

based on maximum achievable control technology (MACT) for controlling emissions of hazardous air pollutants (HAP) from kilns, clinker coolers, raw material dryers and finish mills, as well as clinker piles, storage bins, conveying systems, bagging systems, bulk loading and unloading systems. The HAP emitted from kilns and clinker coolers include particulate matter, metals including mercury, volatile organic compounds and hydrogen chloride. This action will implement the residual risk review requirements of CAA section 112(f)(2) and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. Pursuant to a consent decree, the EPA is obligated to complete this proposed action by 6/15/17. As a result of promulgating the 2013 rule, the EPA estimated benefits would range from $6.7 billion to $18 billion annually, due to reductions in fine particle pollution (PM2.5). This included the value of avoiding 960 to 2,500 premature deaths in people with heart disease. The EPA also estimated the rule would prevent other serious health effects each year, including 17,000 cases of aggravated asthma, 1,500 heart attacks, 650 cases of chronic bronchitis, 1,000 emergency room visits for respiratory problems, such as asthma, 740 hospital admissions for respiratory or cardiovascular problems, 32,000 cases of upper and lower respiratory symptoms, 130,000 days when people miss work and 750,000 days when people must restrict their activities because of particle pollution-related symptoms. This RTR action will assure these continued public health benefits, through further analysis and, if warranted, revisions to the rule.

NPRM	07/00/2017
Final Rule	07/00/2018

18. Risk and Technology Review of the National Emission Standards for Hazardous Air Pollutants From Manufacturing of Nutritional Yeast (2060-AS93)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Manufacturing of Nutritional Yeast. The Manufacturing of Nutritional Yeast NESHAP, subpart CCCC, was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) on 5/21/01. The NESHAP established emission limitations based on maximum achievable control technology (MACT) for controlling emission of hazardous air pollutants (HAP) from nutritional yeast fermenters. The HAP emitted from fed-batch last stage, second-to-last stage and third-to-last stage fermenters is acetaldehyde. This action will implement the residual risk review requirements of CAA section 112(f)(2) and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission

standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. Pursuant to a court order, the EPA is obligated to complete the final action by 10/1/17.

NPRM 12/00/2016

Final Rule 10/00/2017

19. Renewable Fuel Volume Standards for 2018 and Biomass Based Diesel Volume (BBD) for 2019 (2060-AT04)

The Clean Air Act requires EPA to promulgate regulations that specify the annual standards requirements for renewable fuels under the Renewable Fuel Standard (RFS) program. Standards are to be set for four different categories of renewable fuels: cellulosic biofuel, biomass based diesel (BBD), advanced biofuel, and total renewable fuel. The statute requires the standards be finalized by November 30 of the year prior to the year in which the standards would apply. In the case of biomass based diesel, the statute requires applicable volumes be set no later than 14 months before the year for which the requirements would apply.

NPRM 06/00/2017

Final Rule 12/00/2017

20. Noise Emission Standards for Transportation Equipment: High Speed Rail (2060-AT06)

The EPA, in consultation with the Department of Transportation's Federal Railroad Administration (FRA), is considering revisions to the rule that sets noise emissions standards for interstate rail carriers under the Noise Control Act of 1972 (NCA) (42 U.S.C. section 4901 et seq.). Noise emissions are the noise produced by an object-in this case, a train and all of its parts such as the locomotive, power units, and passenger coaches. Current noise standards limit the noise generated by trains when they are operating under a specified set of conditions in order to protect the health and welfare of individuals. The revisions under consideration would address changes in rail technology related to high-speed rail (i.e., trains operating at speeds in excess of 150-160 mph).

NPRM 05/00/2017

21. Revision to Method 23--Determination of Polychlorinated Dibenzo-P-Dioxins and Polychlorinated Dibenzofurans From Stationary Sources (2060-AT09)

The EPA is taking action to revise 40 CFR part 60, appendix A, method 23, "Determination of Polychlorinated Dibenzo-P-Dioxins and Polychlorinated Dibenzofurans from Stationary Sources," which was last revised on March 31, 1995 (60 FR 28378). This update to Method 23 is a complete republication of the method to determine polychlorinated dibenzo-p-dioxins (PCDD's) and dibenzofurans (PCDF's) which will now include an option to determine polycyclic aromatic hydrocarbons (PAH's), and/or polychlorinated biphenyls (PCB's). This update revises the analytical procedure to include isotope dilution mass spectrometry combined with high resolution gas chromatography which is consistent with industry practice. The update moves the method from a prescriptive to a performance-based methodology and removes requirements in the method to use outdated standards or materials. This revision will provide industry an appropriate method in the execution of method 23, which has shown wide variation in its implementation and allows many performance-based options and procedures.

NPRM	12/00/2016
Final Rule	08/00/2017

22. Wool Fiberglass Manufacturing Rotary Spin Bonded Lines Technology Review (2060-AT13)

Amendments to the Wool Fiberglass Manufacturing source category were finalized on July 29, 2015. The risk assessment was conducted under the 2015 final rule, and no adjustments to that risk assessment are contemplated under this action. Due to industry's phase-out of formaldehyde on rotary spin (RS) lines, the industry data that were collected for the 2015 amendments were no longer relevant for technology review use. Consequently, due to the lack of accurate and complete data for such processes, that final rule did not include technology review for RS lines. Prior to signature of the final rule, the EPA began an information collection effort under Clean Air Act section 114 authority for the remaining RS lines in the wool fiberglass manufacturing industry. The results of the emissions testing on the three remaining RS lines are being used to review the technology for this process and to amend the rule, if necessary, under this action.

NPRM	03/00/2017
Final Rule	01/00/2018

23. Reconsideration of the Phosphoric Acid Manufacturing and Phosphate Fertilizer Production Risk and Technology Review (2060-AT14)

The Risk and Technology Review (RTR) for the Phosphoric Acid Manufacturing and the Phosphate Fertilizer Production NESHAP were proposed on November 7, 2014 (79 FR 66512) and promulgated on August 19, 2015, (80 FR 50386). On October 15 and 16, 2015, the Fertilizer Institute (TFI) and the Potash Corporation of Saskatchewan (PCS) petitioned the Agency for reconsideration on three issues: the final monitoring requirements for low pressure scrubbers, the compliance date for existing air oxidation reactors, and the final total fluoride emission limit for calciners. On December 3, 2015, the EPA granted reconsideration on these matters and intends to propose a response to the petitions in the fall of 2016.

NPRM 11/00/2016

Final Rule 05/00/2017

24. Revisions to Procedure 2--Quality Assurance Requirements for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources (2060-AT15)

The purpose of Procedure 2 is to establish the minimum requirements for evaluating the effectiveness of quality control (QC) and quality assurance (QA) procedures and the quality of data produced by particulate matter (PM) continuous emission monitoring system (CEMS). Procedure 2 applies to PM CEMS used for continuously determining compliance with emission standards or operating permit limits as specified in an applicable regulation or permit. Other QC procedures may apply to diluent (e.g., O2) monitors and other auxiliary monitoring equipment included with your CEMS to facilitate PM measurement or determination of PM concentration in units specified in an applicable regulation. Procedure 2 requires you to perform periodic evaluations of PM CEMS performance and to develop and implement QA/QC programs to ensure that PM CEMS data quality is maintained. We have recently become aware that facilities, especially those that have installed control devices, are having difficulty passing their annual QA/QC test because their emissions are lower than they were during the original testing. Procedure 2 currently contains a requirement that the annual QA/QC test results must fall within the same response range as was used to develop the initial correlation curve. We are proposing to modify Procedure 2, to remove the requirement that the response ranges be the same at the low end, so that facilities that have lowered their emissions and have results lower than their initial correlation testing are no longer being penalized.

NPRM 11/00/2016

Direct Final Rule 11/00/2016

25. Interstate Transport of Fine Particulate Matter: Revision of Federal Implementation Plan Requirements for Texas (2060-AT16)

A 2015 court decision regarding the Cross-State Air Pollution Rule (CSAPR) remanded Texas' CSAPR Phase 2 SO2 budgets to EPA for reconsideration. In response to the remand, the EPA is proposing to withdraw the FIP provisions that require affected EGUs in Texas to participate in the CSAPR trading programs for annual emissions of sulfur dioxide and nitrogen oxides.

NPRM 11/00/2016

Final Rule 08/00/2017

26. Revisions to Method 301: Field Validation of Pollutant Measurement Methods From Various Waste Media (2060-AT17)

The purpose of Method 301 is to provide a set of procedures that the owner or operator of an affected source subject to requirements under 40 CFR part 63 can use to validate an alternative test method to a test method required in 40 CFR part 63, or to validate a stand-alone alternative test method based on established precision and bias criteria. The EPA is proposing revisions to existing Method 301. The proposed revisions include editorial, technical, and consistency changes in the language, tables, and equations of Method 301. Method 301 was originally published on December 29, 1992 [57 FR 61970], as a field validation protocol method. On March 16, 1994, Method 301 was included in 40 CFR 63.7 [59 FR 12430] to validate alternative test method requests. To date, subsequent revisions of Method 301 have not been changed to distinguish requirements for site-specific applications of the method versus a single validation for multiple sources.

NPRM 11/00/2016

Final Rule 04/00/2017

27. Petroleum Refinery Sector Reconsiderations (2060-AT18)

The final Refinery Sector Rule was promulgated on December 1, 2015 (80 FR 7178). Following promulgation, the EPA received three petitions for reconsideration of the final rules. These petitions raised a number of issues, including notice and comment. Accordingly, this action will address some of these issues by seeking public comment on five aspects of the final rule for which the EPA did not provide adequate opportunity for notice and comment. This action will also propose a technical correction to amend the provisions related to overlap of equipment leak regulations that was raised in one of the petitions.

NPRM 10/18/2016 (81 FR 71661)

NPRM Comment Period End 12/19/2016

Final Rule 01/00/2017

28. National Emission Standards for Hazardous Air Pollutant Emissions: Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (2060-AT20)

The EPA is taking direct final action to promulgate amendments to a final rule that revised national emission standards for hazardous air pollutants (NESHAP) for the Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks source category. The final rule was published on September 19, 2012 (77 FR 58219). This action, which will be a direct final rule and parallel proposal, will add provisions back into the rule that were inadvertently deleted when the EPA published the 2012 final amendments. These provisions, which were in the original 1995 NESHAP, provided facilities the opportunity to increase the duration of time between surface tension measurements after a certain number of compliant measurements. The EPA never intended these provisions to be deleted. The direct final rule will also provide a correction regarding the requirement to phase-out the use of fume suppressants that contain perfluorooctane sulfonic acid (PFOS) for chromium electroplating and chromium anodizing tanks. In addition, the direct final rule will correct several typographical errors, incorrect references, and other minor inadvertent errors that the EPA discovered after promulgation of the 2012 final amendments.

NPRM 08/00/2017

Direct Final Rule 08/00/2017

29. Vehicle Test Procedure Adjustments for Tier 3 Test Fuel (2060-AT21)

Abstract: In the joint Light Duty (LD) Greenhouse Gas and Fuel Economy rules adopted by EPA and NHTSA (October 15, 2012), the program required that vehicle laboratory emissions testing be performed using the long-standing vehicle test gasoline, which contains no ethanol ("E0" fuel) and higher levels of aromatics. EPA's Tier 3 light-duty vehicle rule (April 28, 2014), which affected essentially the same universe of LD vehicles as the GHG rules, focused on reductions in non-greenhouse gas emissions. As a part of the Tier 3 rule, EPA changed the laboratory test fuel to be more similar to typical fuels today, which on average contain about 10 percent ethanol ("E10") and lower levels of aromatics. Rulemaking action is necessary in order to make vehicle test procedure adjustments that account for the Tier 3 test fuel changes as they begin to apply to CO2 and fuel economy testing. This will ensure that testing results are consistent across both programs and avoid changes in the stringency of the GHG/Fuel Economy program.

NPRM 04/00/2017

Final Rule 03/00/2018

30. Determinations of Attainment by the Attainment Date, and Determinations of Failure To Attain and Reclassification of Certain Areas, for the 2006 24-hour PM2.5 NAAQS (2060-AT24)

This action relates to the December 31, 2015, attainment date for nonattainment areas classified as Moderate for the 2006 24-hour PM2.5 NAAQS. In this notice, EPA will find that certain areas attained the NAAQS by the attainment date and that others failed to attain the NAAQS by the attainment date and will be reclassified to Serious by operation of law.

NPRM 11/00/2016

31. NESHAP for Brick and Structural Clay Manufacturing; and NESHAP for Ceramics Manufacturing Reconsideration (2060-AT25)

This action will address a granted reconsideration issue and several technical corrections for the agency's promulgated final National Emission Standards for Hazardous Air Pollutants (NESHAP) for Clay Ceramics Manufacturing, as well as address several technical corrections for the NESHAP for Brick and Structural Clay Manufacturing. These two final rules were promulgated on October 26, 2015 (80 FR 65470), 40 CFR part 63, subparts KKKKK and JJJJJ respectively, with a small final technical correction amendment for subpart KKKKK promulgated on December 4, 2015. The two NESHAP established emission limitations and work practice requirements based on maximum achievable control technology for control of hazardous air pollutants from kilns and dryers at new and existing brick and clay products, and clay ceramics plants. The granted reconsideration issue is based on a revision for subpart KKKKK, to the location of the temperature probe when demonstrating dioxin compliance (changed from a kiln probe to a stack probe for the final rule), which occurred as an outcome of comments received on the proposal. Since the public did not have a chance to comment on the revision during the comment period, the reconsideration was granted. In addition to this proposed revision to the temperature location related to dioxin limit compliance, several technical corrections will be proposed covering compliance parameters for water curtains, and visible emission location sites. The Brick and Structural Clay rule will also be opened only for technical corrections related to visible emission levels and using opacity as an indicator of compliance with the particulate matter standard.

NPRM 04/00/2017

Final Rule 11/00/2017

32. Oil & Natural Gas Sector Technical Corrections (2060-AT27)

On June 3, 2016, the EPA published the final rule titled "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources." In this action, we are correcting a typographical error that omitted the regulatory text indicating that applicable

standards apply throughout startup, shutdown, and malfunction. In addition, we plan to provide additional clarifications and make minor corrections related to cross-references within the regulatory text.

NPRM 12/00/2016

Final Rule 06/00/2017

33. Commercial, Industrial Solid Waste Incineration Federal Plan (2060-AT28)

On February 7, 2013, the EPA promulgated the final Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration (CISWI) Units. The EPA granted reconsideration on a select few issues, and the final reconsideration was published on June 23, 2016. The Clean Air Act (CAA) directs states with existing CISWI units subject to the emission guidelines to submit plans to the EPA that implement and enforce the emission guidelines. The emission guidelines contain model rule language that states can use for implementation. If a state with existing CISWI unit does not submit an approvable plan within 2 years after promulgation of the emission guidelines, the CAA requires the EPA to develop, implement and enforce a federal plan for CISWI units in the state. This action proposes the CISWI federal plan, which will consist of the model rule language presented in the emission guidelines.

NPRM 01/00/2017

34. National Emission Standards for Hazardous Air Pollutants: Site Remediation (2060-AN36)

The EPA promulgated the Site Remediation National Emission Standards for Hazardous Air Pollutants (NESHAP) standards on October 8, 2003. The Sierra Club filed a petition for reconsideration challenging the exemptions for federally ordered cleanups under CERCLA and RCRA in the final rule. The EPA granted reconsideration of this petition issue and published a proposed notice of reconsideration in the Federal Register on May 13, 2016 (81 FR 29821).

Final Rule 01/00/2017

35. Standards of Performance for Grain Elevators (2060-AP06)

Abstract: The New Source Performance Standards for Grain Elevators was promulgated in 1978 with the latest amendments made in 1984. Since that time, there have been a number of changes in the technology used for storing and loading/unloading grain at elevators. Also, increased production of corn used for ethanol fuel has created a demand for more grain

storage. These standards are being updated again now to ensure that they protect human health while minimizing the compliance burden on grain elevators.

NPRM 07/09/2014 79 FR 39241

Final Rule 12/00/2016

36. National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart W: Standards for Radon Emissions From Operating Uranium Mill Tailings: Review (2060-AP26)

National Emission Standards for Hazardous Air Pollutants (NESHAP) subpart W protects human health and the environment by setting radon emission standards and work practices for operating uranium mill tailings impoundments. The EPA is in the process of reviewing this standard. If necessary, the Agency will revise the NESHAP requirements for radon emissions from operating uranium mill tailings.

Final Rule 11/00/2016

37. Electronic Reporting and Recordkeeping Requirements for New Source Performance Standards (2060-AP63)

The EPA published an advance notice of proposed rulemaking (ANPRM) in October 2009 seeking comment on proposed approaches to improving the emissions factors program, including proposing to require the submission (via electronic reporting) of performance testing information already collected by industry by revising the reporting requirements in 40 CFR part 60 for new source performance standards (NSPS). Performance tests are conducted periodically to measure the air pollutant emissions from an industrial process and are used as an indicator of compliance with regulations. The March 20, 2015, proposed rule would amend approximately 75 NSPS to require electronic submission to the EPA of performance test data, as well as other selected compliance data, such as excess emissions reports, that are already being compiled and submitted by industry to regulatory authorities. These data can be used for regulation development, control strategy development, rule effectiveness studies, risk analyses and other air pollution control activities. Electronic submittal of these reports increases the usefulness of the data, is in keeping with current trends in data availability and further assists in the protection of public health and the environment. The EPA published an extension to the public comment period for the NPRM on 5/19/15 (80 FR 28571), providing the public an additional 30 days to comment, increasing the public comment period to a total of 90 days.

Final Rule 12/00/2016

38. Clarification of Requirements for Method 303 Certification Training (2060-AR97)

The EPA finalized changes to Method 303 to better define the requirements associated with conducting Method 303 certification courses. Method 303 is an air pollution test method used to determine the visible emissions from coke ovens. This action adds additional language that clarifies the criteria used by the EPA to determine the competency of training providers, but does not change the requirements for conducting the test method. These changes will help entities interested in conducting training classes to better understand the requirements necessary to be approved to conduct these training courses.

Final Rule 11/00/2016

39. Treatment of Data Influenced by Exceptional Events – Rule Revisions (2060-AS02)

This final action will revise the Exceptional Events Rulemaking to clarify and streamline certain rule elements, including, but not limited to, those associated with high wind dust events, wildfire and prescribed fire events, normal historical fluctuations including background, the "not reasonably controllable or preventable" criterion, and the "but for' criterion." On March 22, 2007, the EPA promulgated the "Treatment of Data Influenced by Exceptional Events; Final Rule" pursuant to the 2005 amendment of Clean Air Act. This rule, known as the Exceptional Events Rule (EER), superseded the EPA's previous natural events guidance and those sections of the interim fire policy document that address exceptional events. The EER created a regulatory process by which air agencies can request, and the EPA can approve, exclusion for data influenced by exceptional events. The Exceptional Events Rulemaking regulatory sections contain definitions, procedural requirements, requirements for air agency demonstrations, and criteria for the EPA approval for the exclusion of air quality data from regulatory decisions under the EER. Since EPA promulgated the EER in 2007, numerous interested parties have raised questions and issues regarding implementation of the rule.

Final Rule 11/00/2016

40. Model Trading Rules for Greenhouse Gas Emissions From Electric Utility Generating Units Constructed on or Before January 8, 2014 (2060-AS47)

In the final Clean Power Plan (CPP) promulgated in August 2015, the EPA set Emission Guidelines for the best system of emission reductions for carbon dioxide from existing power plants. States were tasked in the CPP with developing plans to achieve reductions in carbon dioxide emissions from the existing power plants in each state. In these model trading rules, the EPA will finalize models that provide two optional approaches (rate-based and mass-based emission trading programs) that states may use in developing a plan.

Final Rule 12/00/2016

41. Protection of Stratospheric Ozone: Update to the Refrigerant Management Requirements under Section 608 of the Clean Air Act (2060-AS51)

This rule is expected to update existing requirements under section 608 that currently apply for ozone-depleting refrigerants, including changes to reduce emissions of such refrigerants. This rule would improve the structure and readability of, and compliance with, the regulations. It is also expected to implement the prohibition under section 608 of the Clean Air Act against knowingly venting, releasing or disposing of ozone-depleting refrigerants or refrigerant substitutes during the course of maintaining, servicing, repairing, and disposing of appliances and industrial process refrigeration by extending, as appropriate, the requirements under section 608 that apply for ozone-depleting refrigerants to non-ozone-depleting refrigerant substitutes, such as hydrofluorocarbons (HFCs).

Final Rule 11/00/2016

42. Revision to the Guideline on Air Quality Models: Enhancements to the AERMOD Dispersion Modeling System and Incorporation of Approaches to Address Ozone and Fine Particulate Matter (2060-AS54)

This action finalizes revisions to the Guideline on Air Quality Models, published as Appendix W to 40 CFR part 51. The Guideline provides EPA-recommended models and other techniques for use in predicting ambient concentrations of pollutants for controlling air pollution sources in programs ranging from the Prevention of Significant Deterioration (PSD) permitting program to State Implementation Plans (SIPs). The Guideline fulfills a Clean Air Act mandate for the EPA to specify models with reasonable particularity to be used under specified conditions for purposes of the PSD permitting program. This action includes important enhancements to the EPA's AERMOD near-field dispersion modeling system that will establish AERSCREEN as the recommended screening level model for simple and complex terrain settings, significantly improve the model performance under stable/light wind conditions, allow for the use of meteorological input data derived from prognostic meteorological models, provide additional options for the modeling of nitrogen dioxide, incorporate the treatment of buoyant line sources within AERMOD, and incidental modifications to the modeling system that have received peer and external review. Additionally, these revisions would incorporate the use of photochemical modeling techniques to more adequately account for the secondary chemical formation of fine particulate matter and ozone associated with precursor emissions from single sources.

Final Rule 12/00/2016

43. Protection of Visibility: Amendments to Requirements for State Plans (2060-AS55)

This final rule will contain EPA's final approach to the issues raised and revisions proposed in the Notice of Proposed Rulemaking of May 4, 2016. These issues and revisions include (1)

a proposed change in the deadline for the submittal of the next comprehensive revision of each states' regional haze State Implementation Plan (SIP) from July 31, 2018 to July 31, 2021; (2) proposed changes to the timing, format, and required content of periodic progress reports; (3) proposed clarifications regarding the relationship between long-term strategies and reasonable progress goals; (4) proposed changes related to how days are selected for tracking progress; (5) proposed treatment of impacts on visibility from anthropogenic sources outside the U.S. and from wildland fires within the U.S.; (6) proposed changes to reasonably attributable visibility impairment provisions; and (7) proposed changes to federal land manager consultation requirements.

Final Rule 11/00/2016

44. Prevention of Significant Deterioration (PSD): Revisions to PSD Permit Rescission Provisions in EPA Regulations at 40 CFR 52.21(w) (2060-AS56)

This final rule will update the Prevention of Significant Deterioration (PSD) permit rescission provisions at 40 CFR 52.21(w) to enable all PSD permits to potentially qualify for rescission. The current "permit rescission" provision at 40 CFR 52.21(w) stipulates that a permittee can request that the EPA Administrator rescind their PSD permit (or a part of their PSD permit) if: (1) they can show that PSD no longer applies to the source or modification, and (2) the permit was issued under EPA rules that were in effect on or before July 30, 1987.

Final Rule 11/00/2016

45. Greenhouse Gas Reporting Program--General Revisions (2060-AS60)

This action would improve the Greenhouse Gas Reporting (GHG) Program by clarifying rule requirements, enhancing data quality to ensure that the data collected is representative of industry and comparable to the US GHG Inventory, and streamlining requirements to improve implementation efficiency. This action would make targeted technical amendments to the reporting rule for municipal solid waste landfills as well as improve and streamline the regulations for multiple source categories covered by the program.

Final Rule 12/00/2016

46. Revision to the Near-Road NO2 Monitoring Requirements (2060-AS71)

This action will remove the existing network design requirement to install near-road NO2 monitoring stations in Core Based Statistical Areas (CBSAs) having populations between 500,000 and 1,000,000 persons, due by January 1, 2017. The EPA is finalizing this action based on a review of research data and routine NO2 monitor data generated by existing near-road NO2 sites that were established in larger CBSAs beginning in 2012. The data

from these near-road NO2 sites, the majority of which are located in higher populated CBSAs having 1,000,000 or more persons, indicate that the current NO2 air quality concentrations in the near-road environment are generally well below both the annual and 1-hour daily maximum NAAQS levels of 53 ppb and 100 ppb, respectively. Due to the correspondence between population, traffic, and expected NO2 concentrations in the near-road environment, it is anticipated that measured near-road NO2 concentrations in relatively smaller CBSAs (e.g., CBSAs with populations less than 1,000,000 persons) would typically exhibit similar, if not lower, concentrations than what is being seen in larger urban areas. Therefore, this action will reduce additional burden on state and local air monitoring agencies by removing monitoring requirements in locations where measured NO2 air quality is expected to be well below the NAAQS. This action does not address the existing requirements for near-road NO2 monitoring in CBSAs having 1,000,000 or more persons.

Final Rule 12/00/2016

47. Renewable Fuel Volume Standards for 2017 and Biomass Based Diesel Volume (BBD) for 2018 (2060-AS72)

The Clean Air Act requires the EPA to promulgate regulations that specify the annual standards requirements for renewable fuels under the Renewable Fuel Standard (RFS) program. Standards are to be set for four different categories of renewable fuels: cellulosic biofuel, biomass based diesel (BBD), advanced biofuel, and total renewable fuel. The statute requires that the standards be finalized by November 30 of the year prior to the year in which the standards would apply. In the case of biomass based diesel, the statute that requires applicable volumes be set no later than 14 months before the year for which the requirements would apply. This action would propose the applicable volumes for all renewable fuel categories for 2017, and would also propose the BBD standard for 2018.

Statutory Deadline 11/30/2016

Final Rule 12/00/2016

48. Greenhouse Gas Reporting Rule: Leak Detection Methodology Revisions and Confidentiality Determinations for Petroleum and Natural Gas Systems (2060-AS73)

This Greenhouse Gas Reporting Program action would revise methods for monitoring emissions at petroleum and natural gas systems facilities to align with other Agency actions and to provide additional flexibility for reporters who may be using these methods.

Final Rule 11/00/2016

49. Mercury and Air Toxics Standards (MATS) Completion of Electronic Reporting Requirements (2060-AS75)

This action will propose to complete a transition to just one electronic reporting systems for the Mercury Air Toxic Standards (MATS) requirements. The action was requested by electric generating unit (EGU) owners and operators, who sought to expand the familiar Emissions Collection Monitoring Plan System (ECMPS) Client Tool already in use to handle all electronic reporting required by the MATS. This action will complete the steps necessary to merge electronic reporting requirements into the ECMPS.

Final Rule 02/00/2017

50. Protection of Stratospheric Ozone: Listings and Listing Modifications for Certain Substitutes Under the Significant New Alternatives Policy Program (2060-AS80)

This action would list a number of substances as acceptable, subject to use conditions, where such alternatives may be used safely and do not pose significantly more risk than other available substitutes when used in accordance with the proposed restrictions. This action also would list as unacceptable alternatives that cannot be used as safely as other available alternatives. In addition, it would modify the listing status for certain alternatives from acceptable to unacceptable or acceptable, subject to narrowed use limits, where other alternatives are available that pose lower overall risk to human health and the environment. This action also would exempt propane in certain refrigeration end-uses from the venting prohibition under Clean Air Act section 608. In addition, this action would apply unacceptability determinations for foam-blowing agents to closed cell foam products and products containing closed cell foam that are manufactured or imported using these foam-blowing agents. Affected industrial sectors under consideration include refrigeration and air conditioning, foam blowing, and fire suppression and explosion protection.

Final Rule 11/00/2016

51. Technical Amendments to Performance Specification 18 and Procedure 6 (2060-AS86)

Abstract: Performance Specification 18 (PS18) and Procedure 6 were originally promulgated in the Federal Register on July 7, 2015. In this action, the EPA will make several minor technical amendments to PS18 and Procedure 6 which will help clarify several aspects of the original rulemaking. The PS18 amendments became effective August 17, 2016. A partial withdrawal of the direct final rule was issued to withdraw the Procedure 6 amendments. This action clarifies and finalizes those amendments.

Final Rule 11/00/2016

52. Technical Correction to Part 50 of the National Ambient Air Quality Standards for Particulate Matter (2060-AS89)

The EPA modified an equation used when calculating the level of particulate matter (PM2.5) in the air, namely Equation 2 in appendix N to part 50, section 4.4(b). Original equation 2 was not appropriate as written and did not accurately reflect the intended calculation of the annual mean PM2.5 concentration. Equation 2 was modified to include calculation of the annual mean PM2.5 concentration in cases where a site does not have four complete quarters of data, but passes one of two substitution tests described in sections 4.1(c)(i) and 4.1(c)(ii). This adjustment to Equation 2 is a currently used calculation of the PM2.5 annual design value, is consistent with the text of section 4.1 within appendix N to Part 50, and does not affect the calculation of annual mean PM2.5 concentrations when four complete quarters of data are available.

Final Rule 12/00/2016

53. National Emission Standards for Hazardous Air Pollutants: Ferroalloys Production Reconsideration (2060-AS90)

On June 30, 2015, the EPA issued final amendments to the National Emission Standards for Hazardous Air Pollutants: Ferroalloys Production (40 CFR part 63, subpart XXX). The EPA received two petitions for reconsideration of the final amendments. This action would address three issues identified in the petitions for reconsideration. This proposal requested comment on three requirements in the final rule. The first issue is continuous baghouse monitoring with bagleak detection systems for positive-pressure baghouses. The second issue is the increase in polyaromatic hydrocarbon (PAH) compliance test frequency in the final rule. The third issue is the use of digital camera opacity technique (DCOT) for determining compliance with the shop building opacity standards. The proposed rule was published in the Federal Register 7/12/16 (81 FR 45089).

Final Rule 12/00/2016

54. Removal of Title V Emergency Affirmative Defense Provisions From State Operating Permit Programs and Federal Operating Permit Program (2060-AS96)

This final rule is removing the "emergency" affirmative defense provisions from both sets of Title V implementing regulations, currently located at 40 CFR 70.6(g) (for State Operating Permit Programs) and 40 CFR 71.6(g) (for Federal Operating Permit Programs), in order to ensure consistency with Clean Air Act requirements.

Final Rule 12/00/2016

55. Amendments to Implementing Regulations for Acting on State Plans (2060-AT23)

The EPA is finalizing a suite of amendments to implementing regulations under 40 CFR part 60, subpart B. The EPA proposed six amendments governing the process for acting on Clean Air Act (CAA) section 111(d) state plans. These changes include: (1) Partial approval/disapproval mechanisms similar to CAA section 110(k)(3); (2) a conditional approval mechanism similar to CAA section 110(k)(4); (3) a mechanism for the EPA to make calls for plan revisions similar to the "SIP-call' provisions of CAA section 110(k)(5); (4) an error correction mechanism similar to CAA section 110(k)(6); (5) completeness criteria and a process for determining completeness of state plans and submittals similar to CAA section 110(k)(1) and (2); and (6) updates to the deadlines for the EPA action. These amendments are being finalized as a stand-alone final rule because once final, they will then be applicable to any future state and federal plans relating to Emission Guidelines promulgated pursuant to CAA section 111(d). The amendments to implementing regulations were proposed in the Clean Power Plan Federal Plan and Model Rule published on October 23, 2015.

Final Rule 12/00/2016

56. Revision of 40 CFR 192--Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings and Uranium In Situ Leaching Processing Facilities (2060-AP43)

The EPA's regulations in 40 CFR 192 establish standards for the protection of public health, safety, and the environment from radiological and nonradiological hazards associated with uranium ore processing and disposal of resulting waste materials. These cross-media standards, which apply to pollutant emissions and site restoration, must be adopted by the Nuclear Regulatory Commission, their Agreement States, and the Department of Energy. The EPA reviewed the standards in the existing rule and proposed to revise the regulations in January 2016 (80 FR 4155), taking into particular account the significant changes in uranium industry extraction technologies and their potential impacts to groundwater. In addition, new facilities being proposed in states from Virginia to Alaska add to the importance of this effort. The final rule will incorporate comments from industry and public stakeholders received during the proposal, as well as the intra-agency workgroup.

Final Rule 11/00/2016

57. Plywood and Composite Wood Products (PCWP) Residual Risk and Technology Review and Amendments (2060-AO66)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Plywood and Composite Wood Products (PCWP). The PCWP NESHAP, subpart DDDD, was promulgated

pursuant to section 112(d) of the Clean Air Act (CAA) on 7/30/04, and was amended on 2/16/06 and 10/29/07. The NESHAP established emission limitations and work practice requirements based on maximum achievable controlling technology (MACT) for control emissions of hazardous air pollutants (HAP) from PCWP. The HAP emitted from lumber dry kilns and plywood, particleboard, medium density fiberboard, hardboard, (structural) fiberboard, oriented strand board (OSB) and engineered wood products processes include formaldehyde, methanol, acetaldehyde, acrolein, phenol and propionaldehyde. This action will implement the residual risk review requirements of CAA section 112(f)(2) and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within eight years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every eight years. This RTR is subject to an ongoing deadline suit, but does not have established proposal or final rule dates yet. In addition, this rulemaking will respond to the remand by the U.S. Court of Appeals of the original MACT standards.

NPRM To Be Determined

58. Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Reasonable Possibility in Recordkeeping; Reconsideration (2060-AP71)

The EPA is convening a proceeding for reconsideration of a final rule published in the Federal Register on December 21, 2007 (72 FR 62607). The subject rule was promulgated in response to a remand by the U.S. Court of Appeals for the District of Columbia Circuit in New York v. EPA, 413 F.3d 3 (D.C. Cir. 2005), in order to clarify the "reasonable possibility" recordkeeping and reporting standard under the New Source Review (NSR) program. After review of issues raised by the State of New Jersey by petition and letter, we have decided to exercise our discretion to conduct a reconsideration of this final rule and will therefore be reopening the public comment period for the rule. The rule will remain in effect while our reconsideration proceeding is under way.

NPRM To Be Determined

59. Reconsideration of the Prevention of Significant Deterioration and Nonattainment New Source Review (NSR) Project Aggregation (2060-AP80)

In January 2009, the EPA issued a final rule that addressed when a source must combine (i.e., "aggregate") nominally-separate physical and operational changes for the purpose of determining whether they are a single change and subject to review under the New Source Review program. Following promulgation of the rule, the Natural Resources Defense

Council submitted a petition for reconsideration as provided for in the Clean Air Act. The EPA responded to the petition by announcing the convening of a reconsideration proceeding and staying the effective date of the rule to allow time to conduct the reconsideration. This final reconsideration will address a range of legal and policy issues related to the 2009 Aggregation rule and complete any revisions of the rule that become necessary as a result of the reconsideration process.

Final Rule To Be Determined

60. Withdrawal of the Prior Determination or Presumption That Compliance With the CAIR or the NOx SIP Call Constitutes RACT or RACM for the 1997 8-Hour Ozone and 1997 Fine Particle NAAQS (2060-AQ07)

This final will withdraw any prior determination or presumption for the 1997 8-hour ozone national ambient air quality standards (NAAQS) and the 1997 Fine Particulate Matter NAAQS that compliance with the Clean Air Interstate Rule (CAIR) or the NOx SIP Call constitutes reasonably available control technology or reasonably available control measures for oxides of nitrogen or sulfur dioxide emissions from electric generating unit sources participating in these regional cap-and-trade programs.

Final Rule To Be Determined

61. Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Reconsideration of Inclusion of Fugitive Emissions; Reconsideration (2060-AQ47)

The EPA is proposing a rule based on the results of its reconsideration of the final rule titled, "Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Reconsideration of Inclusion of Fugitive Emissions" (Fugitive Emissions Rule), published on December 19, 2008. Through a letter signed on April 24, 2009, the EPA granted reconsideration on a petition submitted by the National Resources Defense Council (NRDC), as well as an administrative stay of the Fugitive Emissions Rule provisions. On March 30, 2011, the EPA issued an interim rule that stayed the Fugitive Emissions Rule by reverting the text of the affected sections of the Code of Federal Regulations back to the prior rule language. This stay will remain in effect until the EPA completes its reconsideration and undertakes any associated rulemaking. In this action, the EPA will consider the petition for reconsideration, public comments, and information contained in the rulemaking docket to reach a decision on the reconsideration and finalize the rule.

NPRM To Be Determined

62. Ozone and Fine Particulate Matter (PM2.5) Significant Impact Levels (SILs) for Prevention of Significant Deterioration (PSD) Program (2060-AR28)

This proposed action will establish Significant Impact Levels (SILs) for ozone and PM2.5 to facilitate implementation of the Prevention of Significant Deterioration (PSD) program in areas attaining the national ambient air quality standards (NAAQS) for Ozone or PM2.5. The SILs for Ozone and PM2.5 would be used as compliance demonstration tools by permitting authorities to help determine whether the projected emissions from a proposed new major source or major modification will cause or contribute to a violation of the NAAQS. This proposed action is, in part, in response to the January 22, 2013, D.C. Circuit's decision that vacated the PM2.5 Significant Monitoring Concentration (SMC) and vacated and remanded two provisions in the EPA's PSD regulations containing SILs that were contained in the 2010 rule promulgating increments, SMCs, and SILs for PM2.5. Furthermore, in August 2011, the Texas Commission on Environmental Quality (TCEQ) filed a Petition for Reconsideration to the Administrator regarding several provisions contained in the 2010 PM2.5 final rule, claiming that EPA did not provide an opportunity for public comment prior to issuing the provisions as part of the final rule. In response to the TCEQ petition, EPA will reconsider the following provisions: 1) The revised definition of "baseline area" that includes a new significance level for PM2.5, which is used for determining whether a particular attainment or unclassifiable area should be included in the baseline area for the PM2.5 increments; and 2) The requirement that PM2.5 precursor emissions be included in the significant impact analysis. The EPA intends to address all of the above mentioned items with this rulemaking. This proposed action will be the first to add SILs for ozone to the PSD regulations.

NPRM To Be Determined

63. Reconsideration of the Polyvinyl Chloride and Copolymers National Emission Standards for Hazardous Air Pollutants (2060-AR73)

This action is in response to four petitions for reconsideration by industry and environmental stakeholders of the April 2012 Polyvinyl Chloride and Copolymers National Emission Standards for Hazardous Air Pollutants (PVC NESHAP). The petitions identify notice and comment issues, as well as several technical consistency and policy issues.

NPRM 12/00/2017

Final Rule 12/00/2018

64. National Emission Standards for Hazardous Air Pollutants Risk and Technology Review Reconsideration: Oil and Natural Gas Sector (2060-AS13)

Abstract: On August 16, 2012, the EPA completed its residual risk and technology review (RTR) and promulgated amendments to National Emission Standards for Hazardous Air Pollutants (NESHAP) that regulate hazardous air pollutants (HAP) from new and existing stationary sources in the oil and natural gas production and transmission/storage major source categories. The 2012 rule amended the NESHAP for these two major source

categories (40 CFR part 63, subparts HH and HHH) for the oil and natural gas industry which were promulgated in 1999. On October 15, 2012, the EPA received several petitions for reconsideration to reconsider, clarify and amend certain provisions of the final 2012 rule. At this time we are evaluating potential issues to reconsider.

NPRM To Be Determined

65. Revisions to the Petition Provisions of the Title V Permitting Program (2060-AS61)

This proposal is expected to identify potential requirements for and provide guidance on the substance and format of title V petitions submitted to the Agency as well as requirements for the electronic submittal of title V petitions by the specific method identified in the rule. The proposal is also expected to discuss other elements around the Agency's review of petitions. The proposal is expected to be consistent with the Digital Government Strategy issued by the White House in 2012 that calls for the EPA to take advantage of new technology and improve transparency for our stakeholders, and to support E-enterprise, a U.S. EPA-state initiative to improve environmental performance and enhance services to the regulated community, environmental agencies, and the public. Furthermore, this rule is expected to be responsive to certain title V Task Force recommendations.

Final Rule To Be Determined

66. General Revisions to Emissions Monitoring and Reporting Requirements for Fossil Fuel-Fired Electric Generating Units (2060-AS74)

The original Acid Rain Program core regulations (40 CFR parts 72 through 78) were published on January 11, 1993. Since then, a number of revisions have been made to these rules based on lessons learned during implementation. In addition, substantive changes have been made to the part 75 continuous monitoring regulation and to the associated definitions in part 72, in order to adapt part 75 monitoring to other State and Federal air programs. However, these various rule revisions have, for the most part, been narrow in scope, focusing on critical needs in specific areas. This rule takes a more comprehensive approach by examining parts 72 through 78 in entirety, and then revising the definitions in part 72, updating test methods that are incorporated by reference, correcting known errors,

NPRM 11/00/2017

Final Rule 10/00/2018

67. National Emission Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks (2060-AS81)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Coke Ovens:

Pushing, Quenching, and Battery Stacks. The Coke Ovens: Pushing, Quenching, and Battery Stacks NESHAP, subpart CCCCC, was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) on 04/14/03. The NESHAP established emission limitations and work practice requirements based on maximum achievable control technology (MACT) for controlling emissions of hazardous air pollutants (HAP) from pushing, quenching and battery stacks. The HAP emitted from pushing, quenching and battery stacks include coke oven emissions, as well as polycyclic organic matter and volatile organic compounds such as benzene and toluene. This action will implement the residual risk review requirements of CAA section 112(f)(2) and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. This RTR is subject to an ongoing deadline suit, but does not have established proposal or final rule dates yet. In addition, the NESHAP for Coke Ovens (subpart L), which was reviewed under CAA sections 112(f)(2) and 112(d)(6) and promulgated on 04/15/05, will undergo a technology review under CAA section 112(d)(6) simultaneous with the review of subpart CCCCC.

NPRM To Be Determined

68. Clean Energy Incentive Program Design Details (2060-AS84)

With the final Clean Power Plan (CPP), the EPA provided a Clean Energy Incentive Program (CEIP), a program that states may use at their own option to incentivize early investments in renewable power generation, as well as measures in low-income communities that help reduce rate-payers burdens. On February 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan pending judicial review. While the stay is in place, the CPP is unenforceable. However, the stay does not stop states, tribes, utilities and other stakeholders from continuing to act on climate change. The EPA will move forward developing this action in a way that is consistent with the stay. In the final CPP, the agency laid out the general parameters of the CEIP and stated that we would undertake additional public and stakeholder engagement and seek input before fully developing the design details of the program. In the EPA's proposed Federal Plan and Model Rules, published on October 23, 2015, the EPA proposed CEIP Federal Plan and Model Rule provisions and solicited comment on a number of issues related to design details of the CEIP. On June 30, 2016, the EPA proposed design details of the CEIP for public comment, including some changes to the original CEIP as finalized in the CPP, and re-proposed optional example CEIP rule text for States that choose to incorporate CEIP provisions. When finalized, this action will provide a fully-implementable CEIP, including parameters for eligible programs and projects, matching allocation provisions, conditions on program participation and final optional example CEIP rule text that states may use.

Final Rule To Be Determined

69. Stationary Combustion Turbine RTR (2060-AT00)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Combustion Turbines. The Stationary Combustion Turbine NESHAP, subpart YYYY, was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) on March 5, 2004. The NESHAP established emission limitations based on maximum achievable control technology (MACT) for controlling emissions of hazardous air pollutants (HAP) from stationary combustion turbines. The HAP emitted from stationary combustion turbines include formaldehyde, toluene, benzene, and acetaldehyde. This action will implement the residual risk review requirements of CAA section 112(f)(2) and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. This RTR is subject to an ongoing deadline suit, but does not have established proposal or final rule dates yet.

NPRM To Be Determined

70. Engine Test Cells NESHAP RTR (2060-AT01)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Engine Test Cell/Stands. The Engine Test Cell NESHAP, subpart PPPPP, was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) on May 27, 2003. The NESHAP established emission limitations and work practice requirements based on maximum achievable control technology (MACT) for controlling emissions of hazardous air pollutants (HAP) from engine test cells. The HAP emitted from engine test cells include formaldehyde, toluene, and benzene. This action will implement the residual risk review requirements of CAA section 112(f)(2) and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. This RTR is subject to an ongoing deadline suit, but does not have established proposal or final rule dates yet.

NPRM To Be Determined

71. National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards--Ethylene Production (Subparts XX and YY) (2060-AT02)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Ethylene Production. The Ethylene Production NESHAPs, subparts XX and YY, were promulgated pursuant to section 112(d) of the Clean Air Act (CAA) on July 12, 2002, and further amended on April 13, 2005. The NESHAP established emission limitations and work practice requirements based on maximum achievable control technology (MACT) for controlling emissions of hazardous air pollutants (HAP) from ethylene process vents, storage vessels, transfer racks, equipment, heat exchange systems and waste streams. The HAP emitted from ethylene process vents, storage vessels, transfer racks, equipment, heat exchange systems and waste streams include benzene, 1,3-butadiene, hexane, toluene and naphthalene. This action will implement the residual risk review requirements of CAA section 112(f)(2) and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. This RTR is subject to an ongoing deadline suit, but does not have established proposal or final rule dates yet.

NPRM To Be Determined

72. National Emission Standards for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities (2060-AT03)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Manufacturing Facilities. The Iron and Steel Manufacturing Facilities NESHAP, subpart FFFFF, was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) on 5/20/03. The NESHAP established emission limitations and/or work practice requirements based on maximum achievable control technology (MACT) for controlling emissions of hazardous air pollutants (HAP) from iron-making blast furnaces; steel-making oxygen furnaces; ancillary operations, such as ladling, hot metal transfer, skimming and desulfurization; and sinter plants. The HAP emitted from iron and steel sources include metal HAP (all sources) and volatile HAP (sinter plant only). We also will address unregulated HAP, such as mercury, dioxins/furans and hydrogen cyanide. In addition to conducting the RTR, the EPA will complete its reconsideration of the issues identified in the 3/18/05 response to Earthjustice's petition for administrative reconsideration. The

action will also complete the voluntary remand without vacatur pursuant to the D.C. Circuit's 6/10/10 order in Case No. 03-1205. This action will implement the residual risk review requirements of CAA section 112(f)(2) and the technology review requirements of CAA section 112(d)(6). The statute also directs the EPA to promulgate emission standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. This RTR is subject to an ongoing deadline suit, but does not have established proposal or final rule dates yet.

NPRM To Be Determined

73. National Emission Standards for Hazardous Air Pollutants: Taconite Iron Ore Processing Risk and Technology Review (2060-AT05)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Taconite Iron Ore Processing. The Taconite Iron Ore Processing NESHAP, subpart RRRRR, was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) on 10/30/03 (68 FR 61867). The NESHAP established emission limitations and/or work practice requirements based on maximum achievable control technology (MACT) for controlling emissions of hazardous air pollutants (HAP) from ore crushing and handling operations, indurating furnaces, finished pellet handling operations and ore dryers. The HAP emitted from these sources include metal HAP (e.g., mercury, manganese and lead), formaldehyde and acid gases (i.e., hydrogen chloride and hydrogen fluoride). This action will implement the residual risk review requirements of CAA section 112(f)(2) and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission standards under CAA section 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. This RTR is subject to an ongoing deadline suit, but does not have established proposal or final rule dates yet. The National Wildlife Federation filed a petition for review of the initial 10/30/03 NESHAP, raising several issues, including the alleged failure of EPA to establish emission standards for mercury and asbestos. EPA requested and was granted a voluntarily partial remand of the rule with the intention to gather information on emissions of mercury and abestos and to develop proposed emissions standards for those HAP, if appropriate. RIN 2060-AM87 has been subsumed into this action and the EPA plans to address these issues in this RTR.

NPRM To Be Determined

74. Rubber Tire Manufacturing Risk and Technology Review (2060-AT07)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Rubber Tire Manufacturing. The Rubber Tire Manufacturing NESHAP, subpart XXXX, was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) on July 9, 2002, with corrections promulgated on March 12, 2003. The NESHAP established emission limitations and work practice requirements based on maximum achievable control technology for control of hazardous air pollutants (HAP) from manufacturers of rubber tires and components integral to rubber tires, as well as tire cord producers and puncture sealant operations. The primary HAP emitted from the rubber tire production process and puncture sealant operations are toluene and hexane. Tire cord operations also emit these HAP, but the more significant emissions from tire cord production are formaldehyde, styrene, and methanol. This action will implement the residual risk review requirements of CAA section 112(f) and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. This RTR is subject to an ongoing deadline suit, but does not have established proposal or final rule dates yet.

NPRM To Be Determined

75. Lime Manufacturing Risk and Technology Review (2060-AT08)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for lime manufacturing. The Lime Manufacturing NESHAP, subpart AAAAA, was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) in January 2004. The NESHAP established emission limitations and work practice requirements based on maximum achievable control technology (MACT) for control of hazardous air pollutants (HAP) from kilns at new and existing lime manufacturing plants. The pollutants emitted from lime manufacturing kilns include metallic HAP, hydrogen chloride, particulate matter, sulfur dioxide, nitrogen oxides and carbon dioxide. These pollutants are predominantly originating from the limestone feed material and the fuels used, and are formed from the combustion of fuels and the heating of feed material in the kiln. This action will implement the residual risk review requirements of CAA section 112(f) and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse

environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. This RTR is subject to an ongoing deadline suit, but does not have established proposal or final rule dates yet.

NPRM	To Be Determined

76. Endangerment Finding for Lead Emissions From Piston-Engine Aircraft Using Leaded Aviation Gasoline (2060-AT10)

The EPA is analyzing air quality modeling and monitoring information to make a determination, under section 231 of the Clean Air Act, of whether lead emissions from aircraft operating on leaded fuel cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare. This action follows a previous ANPRM on the topic. The NPRM will describe the endangerment determination that EPA proposes on lead emissions from general aviation aircraft. This will include a description of analyses that EPA conducted to inform the endangerment finding, such as the lead inventory relevant to use of leaded avgas, air quality monitoring, air quality modeling, and potential exposure information.

NPRM	12/20/2017
NPRM	12/00/2017
Final Rule	01/00/2019

77. National Emission Standard for Hazardous Air Pollutants (NESHAP) Risk and Technology Review: Reinforced Plastics Composites and Boat Manufacturing (2060-AT12)

This action will address the agency's residual risk and technology review (RTR) of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reinforced Plastics Composites and Boat Manufacturing. The Reinforced Plastics Composites NESHAP, subpart WWWW, was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) on 4/21/03, and the Boat Manufacturing NESHAP, subpart VVVV, was promulgated pursuant to section 112(d) of the Clean Air Act (CAA) on 8/22/01. The NESHAP established emission limitations and work practice requirements based on maximum achievable control technology (MACT) for controlling emissions of hazardous air pollutants (HAP) from the production of fiberglass bath tubs, showers, automobile, storage tanks and recreational vehicles (Reinforced Plastics Composites) and the manufacture and coating of fiberglass and aluminum boats (Boat Manufacturing). The HAP emitted from these sources include styrene, methylene chloride, toluene, xylene and methyl chloroform. This action will implement the residual risk review requirements of CAA section 112(f)(2)

and the technology review requirements of CAA section 112(d)(6). The statute directs the EPA to promulgate emission standards under CAA 112(f)(2) if such standards are required to provide an ample margin of safety to protect public health or to prevent, taking relevant factors into account, an adverse environmental effect. Any such standards are to be promulgated within 8 years after promulgation of MACT standards under CAA section 112(d). CAA section 112(d)(6) requires the EPA to review and revise the MACT standards as necessary, taking into account developments in practices, processes and control technologies, no less often than every 8 years. This RTR is subject to an ongoing deadline suit, but does not have established proposal or final rule dates yet. In 2005, industry and states asked for clarification and amendments of some rule requirements. This action addresses these issues, and will modify certain requirements related to the startup, shutdown and malfunction provisions in light of a recent court decision. RIN 2060-AP05 has been subsumed into this action and the EPA plans to address these issues in this RTR.

NPRM To Be Determined

78. Control of Air Pollution From Aircraft and Aircraft Engines: Proposed GHG Emissions Standards and Test Procedures (2060-AT26)

This rulemaking follows on the EPA's final endangerment and cause or contribute findings for aircraft GHG emissions which was published on August 15, 2016. As a result of these positive findings, the EPA is obligated under section 231 of the Clean Air Act to set emission standards applicable to GHG emissions from the classes of aircraft engines used in certain types of aircraft included in the contribution finding.

NPRM 01/00/2018

Final Rule 12/00/2018

79. Emission Guidelines for the Existing Oil and Natural Gas Sector (2060-AT29)

On March 10, 2016, the Administration and EPA announced the next step in reducing emissions of greenhouse gases (in the form of methane) from the oil and natural gas industry: moving to regulate emissions from existing sources. Methane from the oil and gas industry comes packaged with other pollutants, including volatile organic compounds that help form harmful smog, and a number of harmful pollutants known as air toxics. The agency is currently undergoing a formal process to require companies operating existing oil and natural gas sources to provide information to assist in the development of comprehensive regulations to reduce greenhouse gas emissions. The Agency will use this information, along with existing agency data, to help us determine how to effectively reduce emissions across existing oil and natural gas sources.

NPRM To Be Determined

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

SIERRA CLUB, Plaintiff, STATE OF NEW YORK, Plaintiff-Intervenor, v. GINA McCARTHY, in her official capacity as the Administrator of the United States Environmental Protection Agency, Defendant.	Case No. 3:15-cv-04328-JD (JSC) **[PROPOSED] ORDER ON REMEDY**

The Court, having considered Plaintiff Sierra Club's Motion for Summary Judgment (Dkt. No. 62), Plaintiff-Intervenor State of New York's Motion for Summary Judgment (Dkt. No. 61), Defendant Gina McCarthy's, in her official capacity as Administrator of the United States Environmental Protection Agency (hereinafter, "EPA"), Cross-Motion for Summary Judgment as to Remedy (Dkt. No. 63), all parties' memoranda in opposition and replies thereto, and otherwise being sufficiently advised, hereby **GRANTS** EPA's Cross-Motion for Summary Judgment as to Remedy and **DENIES** Plaintiff's and Plaintiff-Intervenor's motions for summary judgment to the extent they relate to remedy.

1. The appropriate EPA official shall:

a. sign a notice of proposed rulemaking which proposes to fully address EPA's obligation to promulgate a Federal implementation plan ("FIP") for Kentucky that addresses the requirements of 42 U.S.C. § 7410(a)(2)(D)(i)(I) for the 2008 ozone National Ambient Air Quality Standard as to Kentucky no later than November 1,

2018, unless, prior to that date, EPA proposes to approve a SIP submission for Kentucky addressing these requirements; and

b. sign a notice of final rulemaking which fully addresses EPA's obligation to promulgate a FIP for Kentucky that addresses the requirements of 42 U.S.C. § 7410(a)(2)(D)(i)(I) for the 2008 ozone National Ambient Air Quality Standard as to Kentucky no later than February 1, 2020, unless, prior to that date, EPA signs a notice of final action to approve a SIP submission for Kentucky addressing these requirements.

2. EPA shall expeditiously deliver notices of the proposed and final rulemaking described in Paragraph 1 to the Office of the Federal Register for publication after signature of such notices.

3. The deadlines established by this Order may be extended (a) by written stipulation of Plaintiff, Plaintiff-Intervenor, and EPA with notice to the Court, or (b) by the Court upon motion of EPA for good cause shown pursuant to the Federal Rules of Civil Procedure and upon consideration of any response by Plaintiff and/or Plaintiff-Intervenor and any reply by EPA. Any other provision of this Judgment may be modified by the Court following motion of a party or parties for good cause shown pursuant to the Federal Rules of Civil Procedure and upon consideration of any response by the non-moving party or parties and any reply.

4. If a lapse in EPA appropriations occurs within one hundred and twenty (120) days prior to a deadline in Paragraph 1, that deadline shall be extended automatically one day for each day of the lapse in appropriations.

5. In the event of a dispute between Plaintiff or Plaintiff-Intervenor and EPA concerning the interpretation or implementation of any aspect of this Judgment and Order, the disputing party shall provide the other party with a written notice outlining the nature of the dispute and requesting informal negotiations. The parties shall meet and confer in order to attempt to resolve the dispute. If the parties are unable to resolve the dispute within ten (10) business days after receipt of the notice, either party may petition the Court to resolve the dispute.

IT IS SO ORDERED.

DATED this _____ day of March __, 2017.

_____
JAMES DONATO
UNITED STATES DISTRICT JUDGE

Message

From: Sunanon, Claston [CSunanon@ouc.com]
Sent: 6/23/2017 4:29:18 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Speaker Request- Utility Users Group meeting in Orlando

Mandy,

Good afternoon. Any update on this? Thanks.

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Thursday, June 15, 2017 1:02 PM
To: Sunanon, Claston <CSunanon@ouc.com>
Subject: RE: Speaker Request- Utility Users Group meeting in Orlando

Hi Claston,
Thank you for the invite. Let me check cross check this with my scheduling team and get back.
Best,
Mandy

From: Sunanon, Claston [mailto:CSunanon@ouc.com]
Sent: Tuesday, June 13, 2017 11:05 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: Speaker Request- Utility Users Group meeting in Orlando

Mandy,

Good morning. My name is Claston Sunanon with Orlando Utilities Commission (OUC) and one of the host for the Eastern Fuel Buyers Conference where you spoke earlier this year. You were very well received and nothing but positive comments on your presentation. My company OUC is hosting a utility Users Group meeting focusing on power plants and the website link is : www.utilityusersgroup.com. We are requesting to see if you can be a speaker at the conference and the conference will pay for the hotel accommodations. Thank you for your consideration.

From: NHolden@babcockpower.com [mailto:NHolden@babcockpower.com]
Sent: Monday, June 12, 2017 4:24 PM
To: NHolden@babcockpower.com; Gillingham, John W. <WGillingham@ouc.com>
Cc: ABoris@babcockpower.com; CElliott@babcockpower.com; dcoates@babcockpower.com; DZahn@babcockpower.com; jsweetland@babcockpower.com; JPasquariello@babcockpower.com; JLazenby@babcockpower.com; JNelligan@babcockpower.com; KOLaughlin@babcockpower.com; KSchroeck@babcockpower.com; MCoyle@babcockpower.com; RHellebuyck@babcockpower.com; RPierson@babcockpower.com; SPuski@babcockpower.com; TWilson@babcockpower.com; tgrant@babcockpower.com; WDoherty@babcockpower.com
Subject: Re: Fw: Can you send me an update on who has registered. [EXTERNAL]

We would like to invite you to attend the 2017 Utility Users Group to be held in Orlando Florida. This years event will focus on many of the key topics that are driving our business.

These topics include:

- Boiler NG Conversion and Operations Panel Discussion
  - Building your Specification
  - Project Lessons Learned
  - Post retrofit operations considerations
- Boiler Panel Discussion:
  - Pressure Parts
  - Burners
  - Mills
  - Maintenance
- Environmental Panel Discussion
  - CCR
  - Dry Bottom Ash Conversion
  - Direct Injection Systems
  - Reclaiming Coal Ash for Beneficial Use
  - Air Quality Regulations
  - ELG Compliance
- Steam Turbine and Boiler Upgrades

Please register before June 26th to get the special registration and room rates. Please go to www.utilityusersgroup.com to register.

<image001.gif>

<image002.gif>

Neal Holden
Regional Vice President
Babcock Power Sales Inc.
M: 704-430-9488

NHolden@babcockpower.com
http://www.babcockpower.com

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http://www.babcockpower.com
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DISCLAIMER:

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Message

From: Clint Woods [cwoods@csg.org]
Sent: 6/21/2017 1:40:36 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Phone Tag
Attachments: Comment Summary_2015 NAAQS Transport NODA_05-30-17.docx

Mandy,

Sorry I missed you - Will call at 1:35. Attached may be of interest.

Thanks!

Clint

2015 NAAQS Preliminary Transport Modeling NODA
Comment Summary

- On January 6, 2017 EPA provided preliminary interstate ozone transport air quality information relevant to the 2015 ozone NAAQS through a Notice of Data Availability (NODA) (82 FR 1733). The comment period for the NODA closed on April 6, 2017.

- This document summarizes public comments on the NODA and does not represent any EPA view or position on the information from the commenters as captured here.

- EPA received comments on the transport modeling NODA from nearly 50 commenters
  - 21 state air agencies:
  AL, AR, CT, DE, GA, IA, KS, KY, MD, MO, NC, NV, NY, OH, OK, SC, TX, UT, VA, WI, WY
  - 3 multi-state groups: *AAPCA, LADCO, and the OTC*
  - 23 industry groups:
    Alliant Energy (Alliant)
    American Forest & Paper Association (AFPA)
    American Petroleum Institute (API)
    Basin Electric
    Dairyland Power
    Dominion Power
    Duke Energy
    Edison Electric
    Environmental Energy Alliance of NY (EEANY)
    Illinois Environmental Regulatory Group (IERG)
    Kansas Utilities Group (KSUG)
    Midwest Ozone Group (MOG)
    Nebraska Public Power District (NYPPD)
    NRG Energy (NRGE)
    New York Independent System Operator (NYISO)
    Oklahoma Gas & Electric (OKGE)
    Southern Company
    Tri-State Generation (TSG)
    Tennessee Valley Authority (TVA)
    Utility Air Regulatory Group (UARG)
    WEST Associates (WEST)
    Westar Energy
    Xcel Energy (Xcel)

- General Comment Categories
  - *A. Overarching Comments*
  - *B. Policy Comments*
  - *C. Technical Comments*
  - *D. "Out of Scope" Comments*

A. Overarching Comments

1. Some commenters said that states and industry stakeholders want clarity/reliability/stability/flexibility from EPA regarding the use of the NODA by states in SIPs. (AAPCA, Dominion, Edison Electric, MO, NC, TX, WY)

2. EPA should collaborate with states to enhance the accuracy and reliability of the modeling. (AL, CT, NC, VA, WY)

3. EPA should remodel 2015 NAAQS transport to reflect various considerations and updates provided in the NODA comments.[1]
(AAPCA, AR, Basin Electric, GA, KS, KY, MOG, NC, VA)

4. EPA should move to a more recent air quality modeling platform base year.
(AAPCA[2], DE, Dominion, Duke Energy, Edison Electric, KS, OKGE, UARG, VA, Westar Energy)

5. EPA should adopt a weight-of-evidence approach for evaluating transport obligations with respect to the 2015 ozone NAAQS. (UARG, WY)

6. EPA should not approve any SIP unless all modeled emission reductions are found to be federally enforceable. (CT)

B. Policy Comments

1. Approach for Identifying Receptors

a. Receptors should be identified based on those areas designated nonattainment. (DE)

b. Sites measuring clean data based on 2016 design values should not be considered as maintenance receptors regardless of 2023 modeled design values. (TX)

c. EPA should consider international transport in determining receptors (sites that would be clean but for international transport). (MOG, TSG)

---

[1] There was strong support for EPA to update the transport modeling.

[2] AAPCA noted that expediency of new modeling was more important than their interest in an updated base year – i.e., that we should provide new modeling ASAP, even if that means continuing to use the 2011 platform.

2. Contribution Threshold

(AAPCA, AL, API, AR, Basin Electric, Dominion, Edison Electric, GA, KSUG, KY, MOG, NC, OKGE, SC, TX, TSG, UARG, UT, WEST, WY)

a. EPA should consider alternative threshold(s); allow states flexibility in determining thresholds in combination with other factors.

b. EPA should use the proposed 1 ppb SIL instead of a threshold of 0.70 ppb

c. EPA should use a different contribution threshold, considering
- Collective contribution
- Different thresholds for nonattainment vs maintenance
- Contributions from local vs upwind sources
- Contributions from background sources

3. NOx Reduction Potential

a. EPA should engage with industry to gather up-to-date information on the actual cost of controls for industrial boilers. (AFPA)

b. EPA should consider control measures beyond the EGU sector.
(CT, DE, Dominion, Edison Electric, KSUG, Westar Energy)

- Full installation and operation of SCR & SNCR, high demand/ozone day requirements, performance standards for EGUs; non-EGU point sources (e.g., ICI boilers, cement kilns); area sources (e.g., low sulfur fuel oils that provide NOx benefits); and mobile sources (e.g., tighter diesel engine standards, aftermarket catalysts)

c. Control measures targeted at sources operating on high ozone days should be evaluated, with consideration given to hourly/daily emission limits and performance standards. (CT)

d. NOx caps should not be developed for time periods shorter than the ozone season. (MOG)

e. Cost thresholds in CSAPR Update are far below costs used by Northeast states for establishing RACT (CT)

f. Additional national or super-regional mobile source controls are needed (MD)

C. Technical Comments - Emissions

1. EGU Emissions[3]

a. CPP is uncertain and should not be included in the base case
(AAPCA, API, AR, Basin Electric, Dominion, Duke Energy, Edison Electric, KS, MO, MOG, NC, OH, OK, OTC, TX, TSG, UARG, WY)

b. NEEDs and/or IPM projections
(AAPCA, Alliant Energy, CT Dairyland Power, DE, Dominion, Duke Energy, GA, IA, IERG, KSUG, KDHE, LADCO, MD, MO, MOG, NC, NPPD, NRGE, NY, NYISO, OKGE, OH, OK, SC, Southern, TX, TSG, TVA, VA, WEST, Westar Energy, WI, Xcel)

(1) Commenters provided unit-specific updates to NEEDS
(2) Commenters expressed concern that IPM shut down EGUs that are expected to continue to operate in 2023
(3) Commenters expressed concern about increases in emissions between 2011 and 2023 at certain units in the West
(4) Commenters provided unit-specific future year emissions as alternatives to IPM projections

c. ERTAC
(AAPCA, API, CT, Dominion, Duke Energy, EEANY, KDHE, MD, OK, OTC, VA)

(1) EPA should use or consider using ERTAC, a combination of ERTAC and IPM, or, at a minimum compare ERTAC and IPM results, in establishing future year EGU emissions.

2. Other Emissions Categories (details in individual comment documents)

a. Non-EGU point emissions and/or effects of existing "on-the-books" controls, consent decrees, etc.
(AFPA, CT, Edison Electric, IERG, MO, MOG, NC, OKGE, VA, WEST, WI)

(1) Update the emissions inventory for industrial boilers and process heaters, removing units in the old Boiler MACT database and 2011 NEI that have been shut down, replaced, or converted to gas and updating facility boiler and process heater NOx emissions to reflect the new configuration.
(2) EPA's modeling should include emissions reductions from PA RACTII, OTC Rules, MD rules, CT RACT and HEDD controls, NJ HEDD rule, Boiler MACT).

b. Onroad/nonroad mobile and/or commercial marine emissions.
(API, LADCO, NC, VA, WI)

c. Oil and gas emissions (base year and/or projections).
(IERG, TX, OK, KS, KY, WEST)

[3] Note that a significant number of comments focused on the EGU projections.

d. Biogenic emissions and lightning emissions. (WEST)

(1) MEGAN should be used instead of BEIS for calculating biogenic emissions

(2) Emissions of NO from lightning should be included in the modeling

e. Wild fire emissions. (NC)

(1) "Typical" rather than year-specific fires should be used in the modeling

C. Technical Comments - AQ Modeling

1. Modeling Domain and Resolution

a. Model grid resolution of 12 km is too coarse for properly capturing ozone in areas with complex meteorology; fine scale (4 km) modeling needed for coastal areas and/or mountainous terrain. (EEANY, MOG, NC, VA)

b. EPA should increase the vertical resolution for meteorological and air quality modeling. (TX)

c. EPA should enlarge the 12 km modeling domain to include emissions from agriculture burning in the Yucatan Peninsula and the 2016 Ft McMurray wild fire in Alberta CN. (NC)

2. Meteorology

a. Modeling should be performed for multiple meteorological years (e.g., 2011 and 2012 or 2015 and 2016). (DE, MD, MOG, NY, OTC)

b. Meteorology in 2011 was anomalously hot and not representative for Kansas, Texas and Oklahoma. (KS, OK, TX)

c. Modeling should be performed for 2014 because that year had "average" meteorology. (MOG)

3. Analytic Year

a. A base year rather than a future year should be used as the basis for assessing state contributions to interstate ozone transport. (CT, OTC)

b. EPA does not provide a rationale for using the attainment year for moderate areas as the projected analysis year. (TX)

4. Methods for Projecting Design Values and Contributions

a. For calculating RRFs, EPA should use modeled values from the grid cell containing the monitor (i.e., monitor cell) or land-only cells (for coastal sites) rather than 3x3 matrix max cell approach recommended in EPA's modeling guidance.
(AL, API, EEANY, GA, MD, MOG, NC)

b. Model performance at individual sites and days should be considered in selecting days for calculating projected design values and contributions.
(API, GA, MOG, NC, TX, UT, WEST)

c. A consistent approach (i.e., using the same set of days and validating receptor results with actual monitoring data) should be used for projecting design values and calculating contributions. (TX)

5. Approach for Identifying Receptors

a. Receptors should be identified based on those areas designated nonattainment. (DE)

b. Sites measuring clean data based on 2016 design values should not be considered as maintenance receptors regardless of 2023 modeled design values. (TX)

c. EPA should consider international transport in determining receptors (sites that would be clean but for international transport). (MOG, TSG)

6. Approach for Contribution Modeling

a. The OSAT technique should be used for contribution modeling instead of the APCA technique that has been used by EPA for ozone contribution modeling.
(Basin Electric, MOG, WEST)

b. EPA's contribution metric should be revised to consider contributions on individual days. (DE, OTC)

c. Contribution modeling should be performed to quantify the contributions of various emissions source sectors, by state individually. (NC, KSUG, NYISO, OTC)

7. Comments on 2023 Receptors and Contributions

a. EPA's transport modeling is overly optimistic, underestimating the severity and geographic extent of the ozone problem and levels of transport impacting Connecticut and other states. (CT, UARG)

b. 2023 design values are biased low in the Northeast. (DE, OTC)

c. 2023 design values do not indicate widespread nonattainment problems. (UARG)

d. EPA should explain why some downwind monitors have higher contributions in the 2023 modeling compared to the 2017 modeling or to current measurements.
(DE, Westar Energy)

e. EPA should explain why KS is linked to Tarrant Co, TX when the prevailing winds in Kansas are not from north to south. (KSUG)

f. EPA has not considered the need for improvements in modeling and analysis that will be required to address the varied and complex challenges facing western states and it is inappropriate for EPA to address these modeling issues on a case-by-case basis (TSG)

8. Technical Comments on Contribution Threshold

a. A threshold of 0.70 ppb is below accuracy of monitoring data and systematic and unsystematic errors inherent in complex modeling. (API, AR, WEST)

b. The 1% threshold for the 2015 NAAQS should be 0.71 ppb, not 0.70 ppb. (MOG, UARG)

D. "Out of Scope" Comments

1. SIPs submitted in 2018 should be treated as an initial submittal with early programs; this would allow contributing states to work together to identify and implement the full solution. (MD)

2. EPA should quickly complete the 2008 NAAQS FIP. (CT)

3. EPA should propose a FIP no later than the 110 SIP deadline of Oct 28, 2018. (CT)

4. EPA has an obligation to align the dates for development of transport SIPS with the date for imposition of legally mandated controls. (MOG)

5. EPA's 2017 projected design values are flawed because they are inconsistent with current measured data. (NY, OH)

6. EPA should address controls on local emissions in nonattainment areas before seeking emissions reductions in upwind states. (AAPCA, MOG)

7. UARG urges EPA to modify its Cross-State Air Pollution Rule ("CSAPR") regulatory analytic framework, for reasons described in UARG's December 23, 2016 petition for partial administrative reconsideration of the CSAPR Update Rule. (UARG)

8. EPA should finalize its modeling guidance (Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze, December 2014). (TX)

9. EPA should develop model performance goals. (VA)

10. EPA should update the NEEDS database and then provide a comment period that focuses solely on the NEEDS database prior to the next round of IPM runs. (IA)

11. IPM is a proprietary model that often forces air agencies to guess about key inputs and assumptions. EPA should be more transparent in sharing model inputs. (AAPCA, NC)

12. It is recommended that EPA conduct an analysis of the total uncertainty associated with modeling ozone concentrations. (WEST)

Message

From: Williams, Brendan [Brendan.Williams@pbfenergy.com]
Sent: 6/28/2017 2:20:09 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Following Up

Mandy-

Hope all is well. Wanted to know if you had some time for a brief follow up to our conversation the other week. If so, please let me know when would be good to call whenever you get a chance. Thanks in advance for your consideration.

Regards,

Brendan Williams
Government Relations
PBF Energy
601 Pennsylvania Avenue, NW
Suite 900 South
Washington, DC 20004
O: (202) 434-8254
M: (703) 863-6825
brendan.williams@pbfenergy.com
www.pbfenergy.com

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Message

From: Williams, Brendan [Brendan.Williams@pbfenergy.com]
Sent: 6/21/2017 1:37:22 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Following Up

Hey Mandy! Thanks again for the call yesterday. Just following up to see if you had any questions on the D5 data I sent over. If so, I'm fairly open today and am happy to answer any questions.

Regards,

Brendan Williams
Government Relations
PBF Energy
601 Pennsylvania Avenue, NW
Suite 900 South
Washington, DC 20004
O: (202) 434-8254
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brendan.williams@pbfenergy.com
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Message

From: Savage, Justin A. [justin.savage@hoganlovells.com]
Sent: 6/28/2017 1:51:34 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Ward, Erin H. [erin.ward@hoganlovells.com]
Subject: HollyFrontier -- Tomorrow's Meeting @ 1:30 pm

Hi Mandy,

We look forward to seeing you tomorrow at 1:30 pm – thank you so much for scheduling the meeting on short notice. The attendees for HollyFrontier will include Denise McWatters, the General Counsel and Senior Vice President, and my colleague, Erin Ward.

I hope this is your last meeting of the week and you have a great Fourth of July!!!!!!

Best,
Justin

Justin Savage
Partner

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Message

From: Parinello, Chris [Chris.Parinello@valero.com]
Sent: 6/27/2017 6:07:47 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Zelermyer, Salo [Salo.Zelermyer@valero.com]
Subject: Export Follow Up/Friday Meeting
Attachments: Outline of RFS Treatment of Renewable Fuel Exports.docx; 2016-US-Ethanol-Trade-Statistics-Summary.pdf

Importance: High

Hi Mandy—Thanks for taking the time to chat today. I've attached the document we left Samantha outlining the case for the ethanol export RINs proposal, as well as statistics from RFA on last year's ethanol exports. You mentioned this Friday as a date for us to come in to discuss this and some other issues a bit more. We're wide open that day so please let us know the time that works best. Thanks again.—Chris

2016 U.S. ETHANOL EXPORTS AND IMPORTS

STATISTICAL SUMMARY

RFA RENEWABLE FUELS ASSOCIATION

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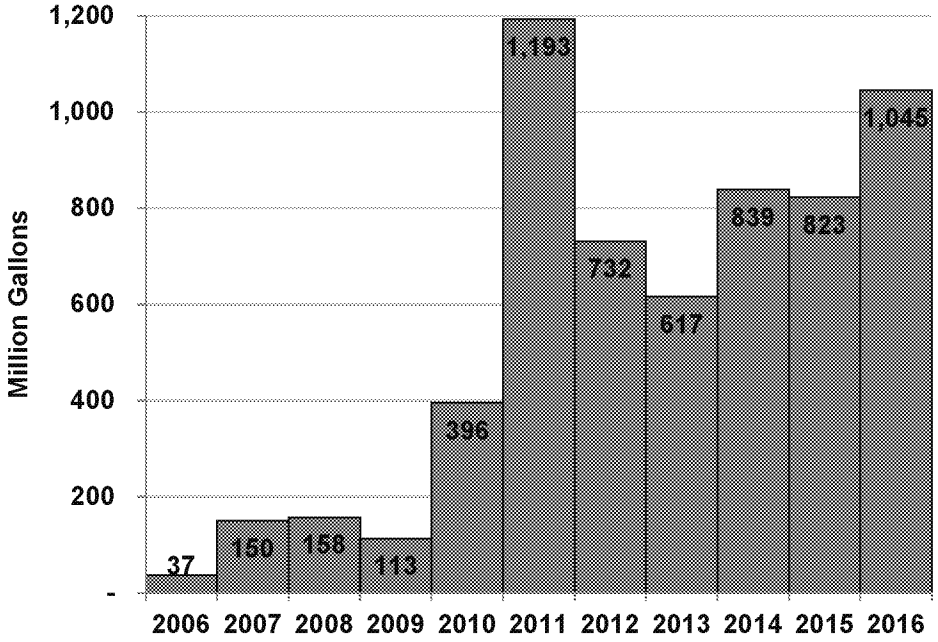
2016 U.S. ETHANOL EXPORTS

RFA RENEWABLE FUELS ASSOCIATION

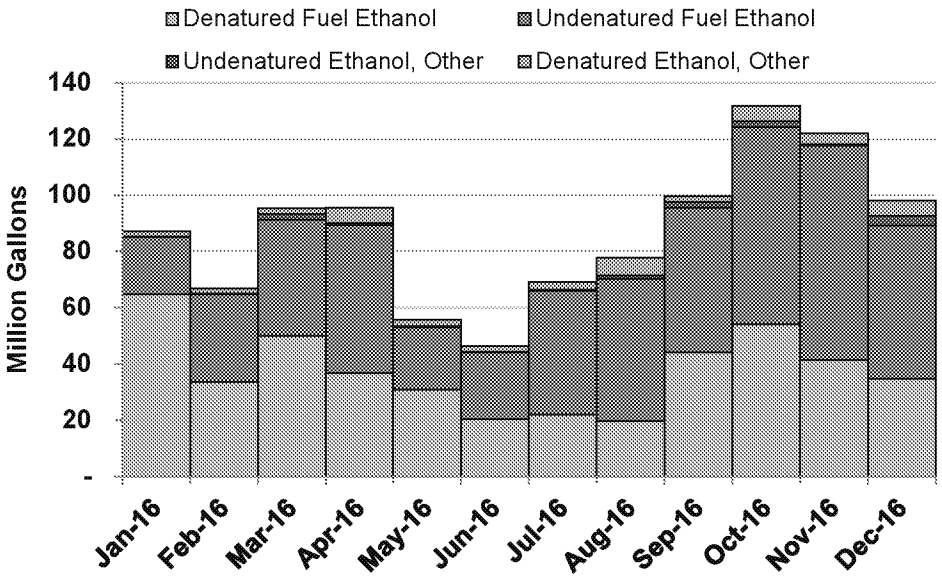
U.S. Ethanol Exports, 2006-2016



In 2016, the U.S. exported **1.05 billion gallons** of ethanol—the second-highest annual total on record. In 2016, American-made ethanol was exported to **more than 50 countries** on all six inhabited continents around the world.

2016 Monthly Ethanol Exports, by Type

Undenatured ethanol for fuel use accounted for **51%** of total exports in 2016, overtaking denatured fuel ethanol as the leading ethanol export product for the first time ever. Meanwhile, denatured ethanol for fuel use made up **43%**. Denatured and undenatured ethanol for industrial uses totaled **5%**.

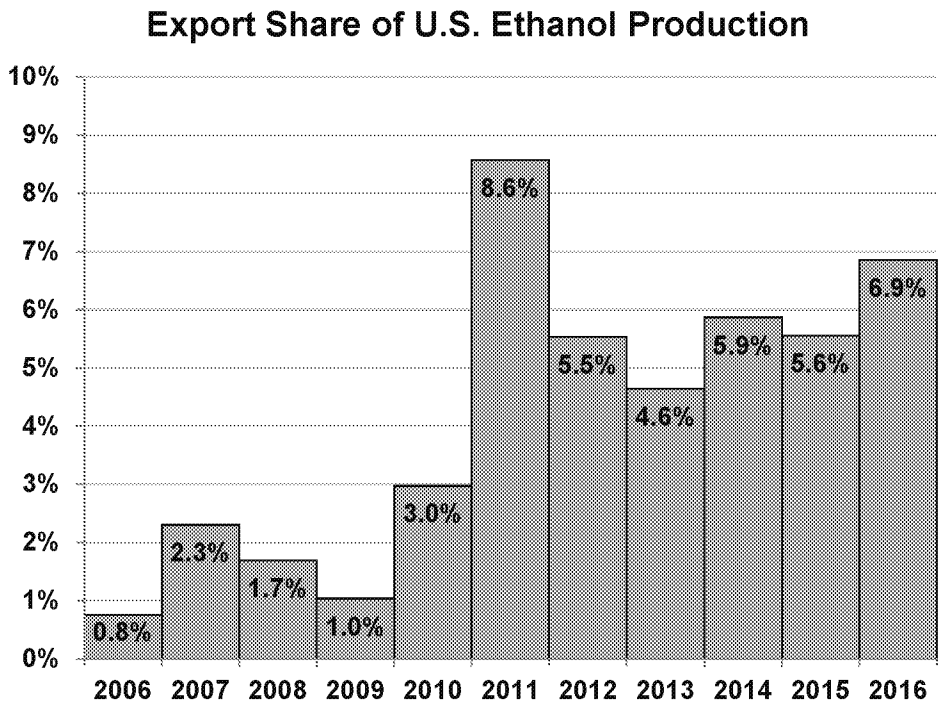


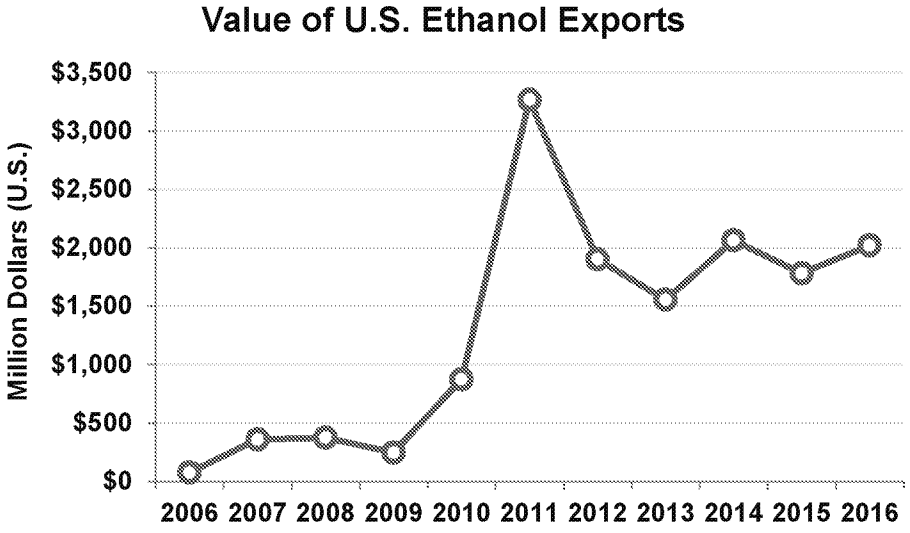
Sources: U.S. Census Bureau, Department of Commerce, and Department of Agriculture

2016 U.S. ETHANOL EXPORTS

RFA RENEWABLE FUELS ASSOCIATION

An estimated **6.9%** of total U.S. ethanol production was exported in 2016, the second-highest share in history and highest in five years.





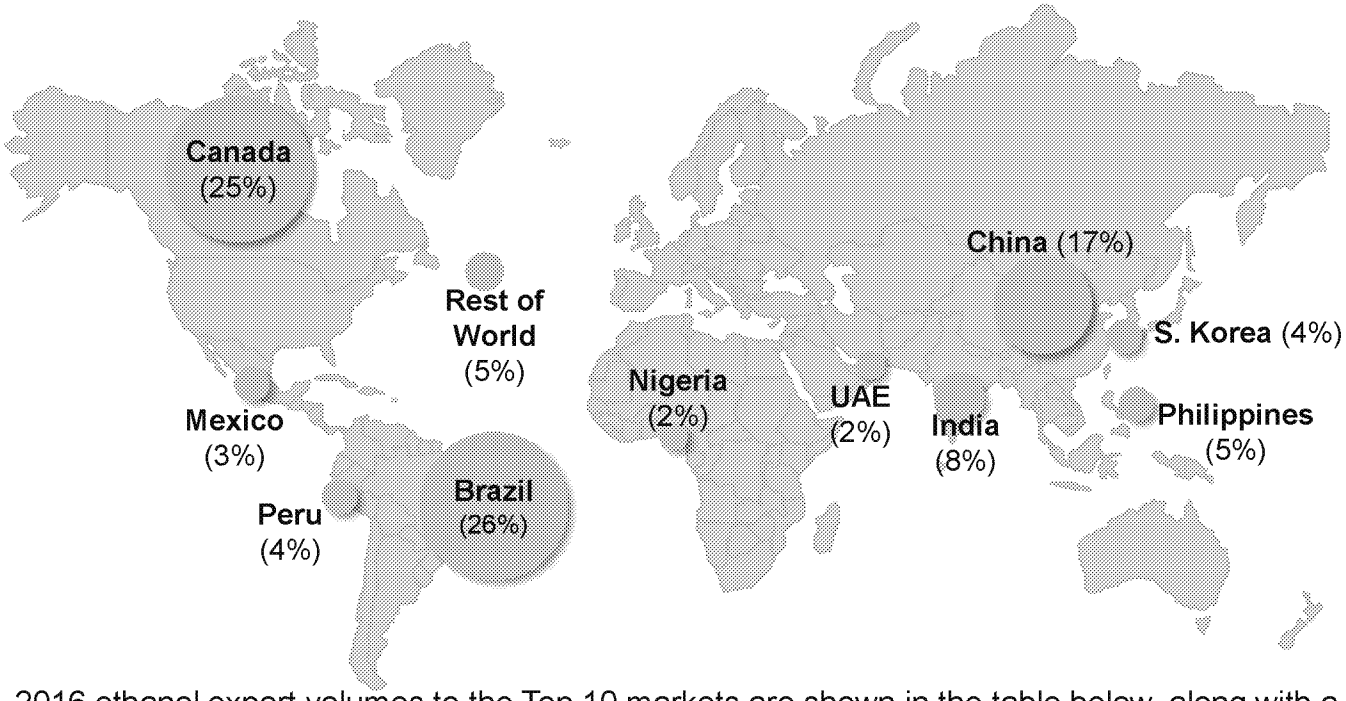
U.S. ethanol exports were valued at **$2.02 billion** in 2016, up 13% from 2015 and the third-highest on record.

Sources: U.S. Census Bureau, Department of Commerce, and Department of Agriculture

2016 ETHANOL EXPORTS: TOP MARKETS

RFA RENEWABLE FUELS ASSOCIATION

Top markets for U.S. ethanol exports in 2016



2016 ethanol export volumes to the Top 10 markets are shown in the table below, along with a comparison to 2015 volumes. All figures shown in millions of gallons, unless otherwise noted.

Country	Den. Fuel	Und. Fuel	Den. Other	Und. Other	2016 Total	2015 Total	Change
Brazil	21.2	245.8	-	0.1	**267.0**	**112.6**	**+137%**
Canada	235.5	-	23.6	0.2	**259.3**	**251.3**	**+3%**
China	144.2	34.8	-	0.1	**179.1**	**73.9**	**+142%**
India	-	83.2	-	0.4	**83.6**	**37.2**	**+125%**
Philippines	-	54.1	-	0.2	**54.3**	**73.0**	**-26%**
Peru	21.6	20.5	-	-	**42.1**	**27.5**	**+53%**
South Korea	7.2	25.5	0.1	6.7	**39.5**	**55.1**	**-28%**
Mexico	-	26.3	0.5	2.2	**29.0**	**33.7**	**-14%**
Nigeria	3.6	2.7	15.8	-	**22.1**	**6.7**	**+230%**
U. Arab Emir	8.1	12.0	-	-	**20.2**	**28.6**	**-29%**

Sources: U.S. Census Bureau, Department of Commerce, and Department of Agriculture

U.S. ETHANOL EXPORTS: SHIFTING MARKETS

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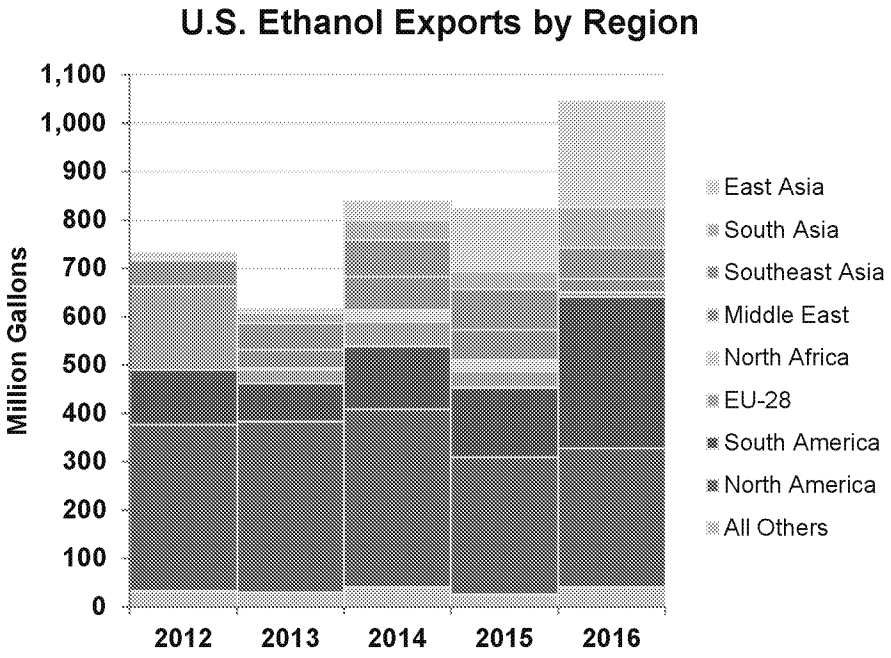
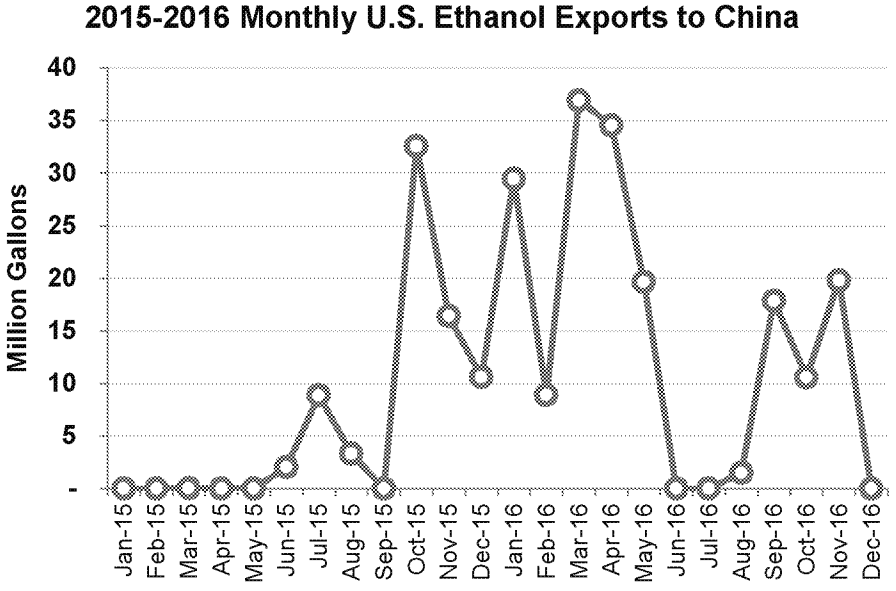
Exports to **South America** and **East Asia** boomed in 2016, growing 118% and 69%, respectively, over 2015 levels. Meanwhile, exports to **Southeast Asia**, the **Middle East**, and **North Africa** slumped. After importing 174 million gallons in 2012, the **EU-28** brought in just 10 million gallons in 2016.





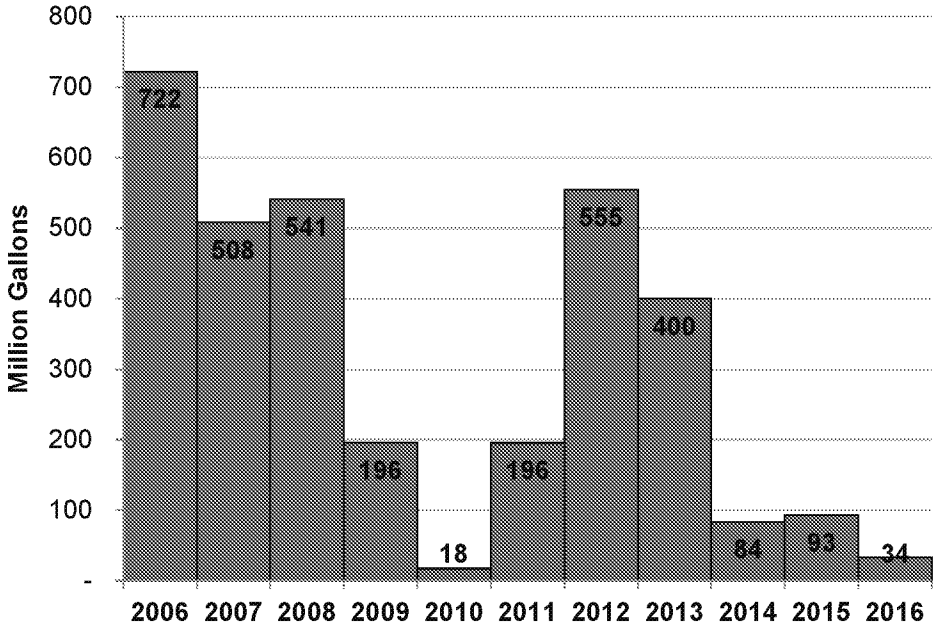
U.S. ethanol exports to China remained **highly volatile** in 2016. China imported 110 million gallons in the first four months of the year, dropped out of the market in June and July, returned in the fall, then exited again in December.

Sources: U.S. Census Bureau, Department of Commerce, and Department of Agriculture

2016 U.S. ETHANOL IMPORTS

RFA RENEWABLE FUELS ASSOCIATION

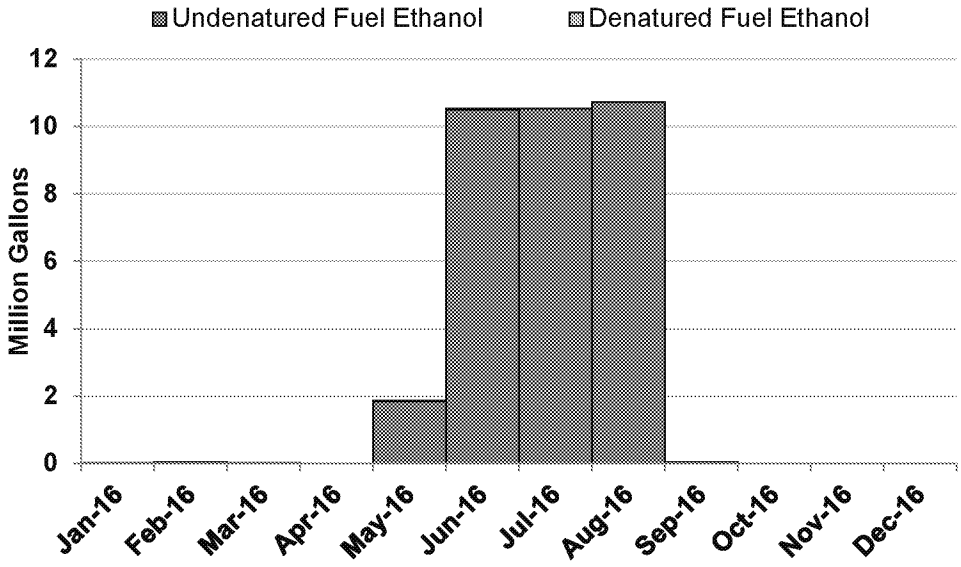
U.S. Fuel Ethanol Imports, 2006-2016



In 2016, the U.S. imported just **34 million gallons** of fuel ethanol, down **64%** from 2015 and the lowest annual total in six years. U.S. ethanol imports have averaged just **70 million gallons** annually over the past three years.

2016 Monthly Ethanol Imports, by Type

Undenatured ethanol for fuel use accounted for **more than 99%** of total imports in 2016, while denatured ethanol for fuel use made up less than **1%**. More than 99% of 2016 imports were received in the May-August period.



Sources: U.S. Census Bureau, Department of Commerce, and Department of Agriculture

2016 U.S. ETHANOL IMPORTS

RFA RENEWABLE FUELS ASSOCIATION

Top Suppliers of U.S. Ethanol Imports
(million gallons)

Country	2016 Total	2015 Total
Brazil	31.8	85.4
Netherlands	-	3.2
Spain	-	1.9
Guatemala	1.8	1.8
All Others	0.1	0.9
TOTAL	**33.7**	**93.2**

Brazil saw its shipments to the U.S. **fall by 63%** in 2016, but it remained as the leading source of U.S. fuel ethanol imports. Guatemala was the only other supplier to register meaningful volumes in 2016. Top suppliers of U.S. fuel ethanol imports are shown in the table at left, along with a comparison to 2015 volumes.

California ports received **99.7%** of U.S. fuel ethanol imports in 2016, compared to just **38%** in 2015. The share of imports received through the port of New York fell from 13% in 2015 to less than 1% in 2016. Historical import hubs like Miami, Tampa, and Houston recorded no fuel ethanol imports in 2016.

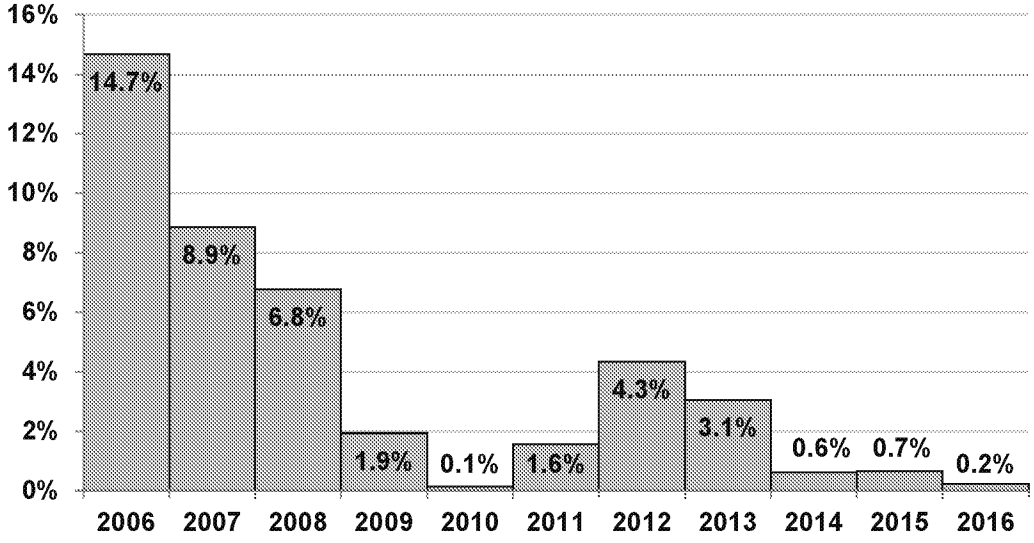
Top Ports of Entry for 2016 U.S. Ethanol Imports

Sources: U.S. Census Bureau, Department of Commerce, Department of Agriculture, and U.S. International Trade Commission

IMPORTS RELATIVE TO USE & NET EXPORTS

RFA RENEWABLE FUELS ASSOCIATION

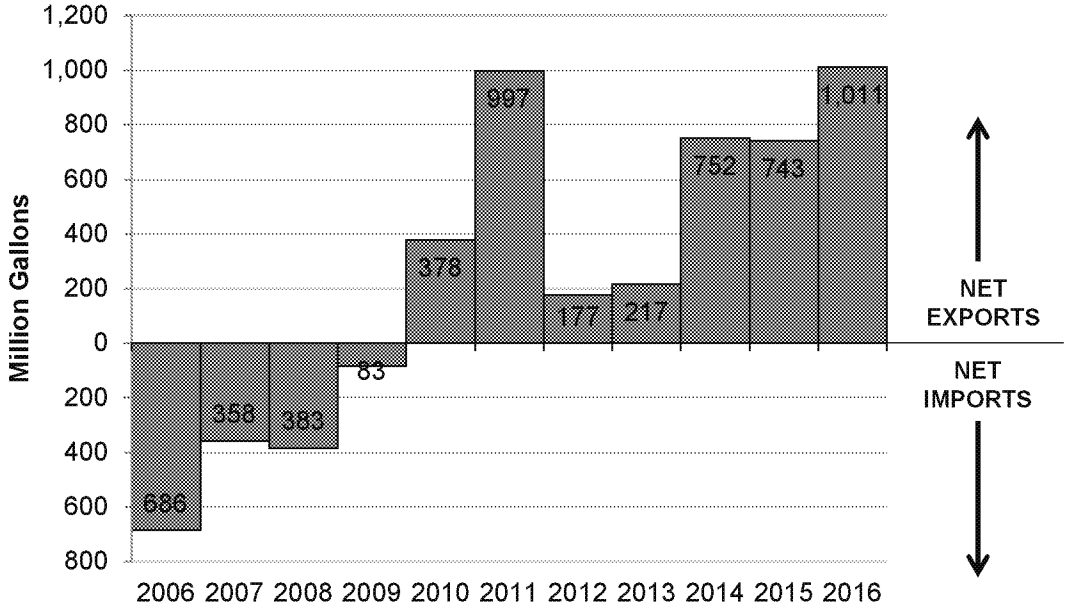
U.S. Ethanol Imports: Share of Total U.S. Ethanol Consumption



Imports accounted for **far less than 1%** of U.S. ethanol consumption in for the third year in a row. Ethanol import reliance is down dramatically from the 2005-2008 timeframe.

U.S. Net Ethanol Imports/Exports, 2005-2015

The U.S. set a **new record for net exports in 2016**, barely edging out 2011's total. The U.S. extended its streak as a net exporter of ethanol to seven years.



Sources: U.S. Census Bureau, Department of Commerce, Department of Agriculture, and U.S. Energy Information Administration

ABOUT THE DATA IN THIS REPORT

RFA RENEWABLE FUELS ASSOCIATION

U.S. Ethanol Export Data

- The export data in this report includes exports classified under the following Harmonized Tariff Schedule (HTS) codes:
    - **2207200010**: Ethyl alcohol and other spirits, denatured, of any strength: For fuel use
    - **2207106010**: Undenatured ethyl alcohol of an alcoholic strength by volume of 80 percent vol. or higher: For non-beverage purposes: For fuel use
    - **2207200090**: Ethyl alcohol and other spirits, denatured, of any strength: Other
    - **2207106090**: Undenatured ethyl alcohol of an alcoholic strength by volume of 80 percent vol. or higher: For non-beverage purposes: Other
- 2207200090 and 2207106090 are included in this report because there is some anecdotal evidence that exports of ethanol intended for fuel use are sometimes classified under these codes. In any case, ethanol classified under these codes represented just 5% of the 2016 U.S. exports discussed in this report.

U.S. Ethanol Import Data

- The import data in this report includes imports classified under the following Harmonized Tariff Schedule (HTS) codes:
    - **2207200010**: Ethyl alcohol and other spirits, denatured, of any strength: For fuel use
    - **2207106010**: Undenatured ethyl alcohol of an alcoholic strength by volume of 80 percent vol. or higher: For non-beverage purposes: For fuel use

Sources

- All data in this report comes from the U.S. Census Bureau, U.S. Department of Commerce, U.S. Department of Agriculture, U.S. International Trade Commission, and U.S. Energy Information Administration

The Renewable Fuels Association publishes **monthly** summaries of export and import data for ethanol and distillers dried grains on its award-winning E-Blog.

This report was prepared by Geoff Cooper, who may be contacted at gcooper@ethanolrfa.org or 636.594.2284.

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Draft

Outline of RFS Treatment of Renewable Fuel Exports

Two primary goals of the RFS: (1) promote renewable fuels in the United States and (2) U.S. energy security.

Statutory Background

- RFS1 mandated that EPA ensure that "gasoline sold or introduced into commerce in the United States" contained specific volumes of renewable fuel.
- RFS2 mandates that EPA ensure that "transportation fuel sold or introduced into commerce in the United States" contains at least amounts specified in the statute.
- "Transportation fuel" means fuel for use in motor vehicles and engines.
- Nearly all ethanol produced in the U.S. is fuel for use in motor vehicles or engines; EPA acknowledged this 2006 RFS rulemaking.
- All ethanol produced in the U.S. is "introduced into commerce in the United States."

Current Regulations on Exported Renewable Fuel

- The current regulations are designed to use renewable fuel production as a surrogate for ensuring that gasoline contained renewable fuel (or consumption). Thus, regulations cancelled out any RINs generated for exported renewable fuel by creating a separate RVO that applies to exported renewable fuel.

  > RINs would represent proof of production which is then taken as proof of consumption as well, since all renewable fuel produced or imported will be either consumed as fuel or exported. 71 FR 55562
  >
  > Once renewable fuels are produced or imported, there is very high confidence they will in fact be blended into gasoline or otherwise used as motor vehicle fuels, except for exports. 71 FR 55576
  >
  > Production volumes of renewable fuels intended for blending into gasoline are an accurate surrogate for volumes actually blended into gasoline. In addition, production volumes of renewable fuels capture those renewable fuels used as motor vehicle fuel in their neat (unblended) form. Thus, we believe that this approach would allow us to account for all renewable fuels consumed in the U.S. because renewable fuels always end up being used as fuel in the U.S. or exported. 71 FR 55577
  >
  > By tracking the amount of renewable fuel produced or imported, and subtracting the amount exported, we will have an accurate accounting of the renewable fuel actually consumed as motor vehicle fuel in the U.S.71 FR 55577

- Under RFS2, the mandate differs in that it only requires that transportation fuel introduced into U.S. commerce contain renewable fuel. Nearly all renewable fuel produced in the U.S. is introduced into commerce in the U.S., including exported renewable fuel. The statute does not require that EPA ensure that it is contained in gasoline or consumed in the U.S.; thus, RINS for renewable fuel that is exported should be available for compliance with the RVO.

In promulgating rules under RFS2, EPA incorrectly assumed that the statute continued to require consumption and thus, EPA continued to cancel out the RINs for exported renewable fuel:

> By acquiring RINs and applying them to their RVOs, obligated parties are deemed to have satisfied their obligation to cause the renewable fuel represented by the RINs to be consumed as transportation fuel in highway or nonroad vehicles or engines. Obligated parties are not required to physically blend the renewable fuel into gasoline or diesel fuel themselves. 75 FR 14721

The statute only requires that EPA ensure that renewable fuel is introduced into commerce. All renewable fuel produced in the U.S. should be assigned RINs and exporting renewable fuel should not incur an RVO but should count toward compliance with the RVO.

Regulatory Changes Needed

- Delete all of 40 CFR § 80.1430 (RVO for exports)

  § 80.1430 Requirements for exporters of renewable fuels.
  (a) Any exporter of renewable fuel, whether in its neat form or blended shall acquire sufficient RINs to comply with all applicable Renewable Volume Obligations under paragraphs (b) through (e) of this section representing the exported renewable fuel. No provision of this section applies to renewable fuel purchased directly from the renewable fuel producer and for which the exporter can demonstrate that no RINs were generated through the recordkeeping requirements of § 80.1454(a)(6).

- Delete the export compliance provisions in § 80.1427(c).

- Delete recordkeeping for RINless exported renewable fuel: § 80.1454(a)(6)

  (6) For exported renewable fuel, invoices, bills of lading and other documents describing the exported renewable fuel.

  (i) For exporters of renewable fuel for which no RINs were generated, an affidavit signed by the producer of the exported renewable fuel affirming that no RINs were generated for that volume of renewable fuel.

- Delete the definition of "exporter of renewable fuel"

- Define "denatured" to include any ethanol that is produced for use as a transportation fuel for export

  > **Renewable fuel** means a fuel which meets all of the requirements of paragraph (1) of this definition:
  >
  > (1)(i) Fuel that is produced from renewable biomass.

(ii) Fuel that is used to replace or reduce the quantity of fossil fuel present in a transportation fuel, heating oil, or jet fuel.

(iii) Has lifecycle greenhouse gas emissions that are at least 20 percent less than baseline lifecycle greenhouse gas emissions, unless the fuel is exempt from this requirement pursuant to §80.1403.

(2) Ethanol covered by this definition shall be **denatured** as required and defined in 27 CFR parts 19 through 21. Any volume of denaturant added to the undenatured ethanol by a producer or importer in excess of 2 volume percent shall not be included in the volume of ethanol for purposes of determining compliance with the requirements under this subpart.

§80.1415 How are equivalence values assigned to renewable fuel?
(a)(1) Each gallon of a renewable fuel, or gallon equivalent pursuant to paragraph (b)(5) or (b)(6) of this section, shall be assigned an equivalence value by the producer or importer pursuant to paragraph (b) or (c) of this section.

(2) The equivalence value is a number that is used to determine how many gallon-RINs can be generated for a gallon of renewable fuel according to §80.1426.

(b) Equivalence values shall be assigned for certain renewable fuels as follows:

(1) Ethanol which is **denatured** shall have an equivalence value of 1.0.

Effect of Change

- All renewable fuel produced or imported into the U.S. will be treated equally – all will be assigned RINs and all renewable fuel produced in the U.S. can be used for compliance with the RVO.
- U.S. exported over 1 billion gallons of ethanol in 2016 and over 800 million gallons each year in 2014 and 2015; About 84 million gallons of biodiesel was exported each year in 2014, 2015 and 2016.
- Use of the 1 billion gallons of ethanol for RVO compliance means that ethanol in gasoline need only be 9.7%.
- To use the waiver, EPA cited to exports as a constraint on supply in the U.S.; using exports for compliance eliminates exports as a constraint, providing substantial relief to the RIN market.
- These volumes of ethanol exports are greater than the amounts waived by EPA.
- Renewable fuel producers will benefit from RINs on exported renewable fuel and market opportunities for exports.

- Ethanol producers that export will hold separated RINs that they can sell in the RIN market.
- Domestic biodiesel producers will have additional markets that should improve their competitiveness with foreign biodiesel imports.

- Obligated parties would benefit from additional RINs in the market.

2017 Ethanol Industry Outlook- RFA

- Export Stats
  - **Growing exports of both ethanol and co-products are helping to not only reduce the U.S. trade deficit, but also support jobs and income levels in the domestic economy.**
  - 14,940 direct, indirect, and induced jobs
  - $3B contribution to GDP.
  - $4B reduction to U.S. trade deficit.
  - U.S. ethanol exports rose to more than one billion gallons in 2016.
  - Canada and Brazil remained the top two export customers, receiving roughly half of the total ethanol exports.

Ethanol Exports Help Corn Market

- The United States exported more than a billion gallons of ethanol and 11.5 million metric tons of distiller's dried grains with solubles. Exports alone supported 14,940 direct, indirect and induced jobs.

2017 Iowa Economic Impact Study

- "As pointed out earlier, U.S. ethanol exports have expanded significantly over the last decade and are projected to near 1.1 billion gallons for all of 2016 with an export value of $2.2 billion. Exportable supplies of ethanol have grown over the past seven years as production exceeded domestic use. Moreover, the ethanol industry is generating a trade surplus and helping to reduce the nation's trade deficit. Exports are estimated to generate $331 million of GDP for the U.S. and support 4,471 jobs. Iowa's share of this amounts to nearly $88 million of GDP and 1,185 jobs."

TESLA

1

E

Message

From: Dimitri.Karakitsos@hklaw.com [Dimitri.Karakitsos@hklaw.com]
Sent: 6/22/2017 2:22:56 AM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: RE: Meeting Next Week

Thanks - Alex please let me know what you need from me.

Look forward to seeing you as well!

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone 202.469.5132 | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

Add to address book | View professional biography

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Wednesday, June 21, 2017 10:19 PM
To: Karakitsos, Dimitrios J (WAS - X75132) <Dimitri.Karakitsos@hklaw.com>
Cc: Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: Re: Meeting Next Week

Tuesday at 11 am would work. I'm CC'ing Alex who can Help work out the rest of the logistics.

Look forward to seeing you soon!
Mandy
Sent from my iPhone

On Jun 21, 2017, at 6:36 PM, "Dimitri.Karakitsos@hklaw.com" <Dimitri.Karakitsos@hklaw.com> wrote:

> Mandy,
>
> Scott and I wanted to see if you had some time next week for us to bring in our client Neste. Tuesday is pretty wide open and we could find some time late Monday afternoon as well if that works better.
>
> Happy to work around your schedule so let me know if there are some times that are better for you than others.
>
> Thanks,
>
> Dimitri
>
> **Dimitrios Karakitsos | Holland & Knight**
> Partner
> Holland & Knight LLP

800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone 202.469.5132 | Fax 202.955.5564
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Message

From: Deeley, Blake [Blake.Deeley@mail.house.gov]
Sent: 6/22/2017 9:04:32 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Hey!

Hey Mandy! Hope all is well.

Any chance you have a couple of minutes tomorrow for a very brief phone call?

Yesterday, an RFS issue was brought to my boss' attention that I want to talk to you about.

-Blake

Blake Deeley| *Policy Advisor*
Congressman David B. McKinley (WV-1)
2239 Rayburn House Office Building
Washington, DC 20515
(202) 225-4172

Message

From: Robert Riley [rgrileyjr@feedenergy.com]
Sent: 6/23/2017 9:10:31 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: Corn Oil One meeting with EPA on June 21

Ms. Gunasekara:

Thank you for taking the meeting with us on June 21 about Corn Oil one.

To summarize our discussion:

- Corn Oil 1 refines crude distiller's corn oil (DCO) from ethanol plants and wants to send it to biodiesel plants.
- EPA arbitrarily classified Corn Oil 1 as a bio-intermediary, shutting us out of the RFS2 bio-diesel market. This has harmed Corn Oil 1 substantially, putting us on the brink of bankruptcy.
- Soybean oil and Canola oil are approved as biodiesel feedstock by RFS2. Their production pathway is identical to ours, and therefore Corn Oil 1 should be treated identically by the regulations.
- The EPA needs to immediately certify Corn Oil 1 as a valid feedstock to the biodiesel sector, under the original RFS2 designation, and able to generate D-4 and D-5 RIN's.

Again, thank you for your time. Your commitment to give us an initial signal of the EPA timeline in 7-10 days is appreciated. You expressed the sentiment that the EPA should not be an impediment to the success of this business. I sincerely hope you will carry that thought forward in the discussions you have with the EPA career staff.

I would be happy to visit with you if you need additional background or information.

Robert G. Riley, Jr
Riley Resource Group
(Feed Energy, Corn Oil 1, Riverhead Resources, Decision Innovation Solutions)
4400 E. University Ave.
Pleasant Hill, Iowa 50327
515-344-4406 (O)
515-229-9100 (C)
rgrileyjr@rileyresourcegroup.com
www.RileyResourceGroup.com

Effective and efficient. The latter is useless if the former is lacking.

Message

From: joanna.foust@daimler.com [joanna.foust@daimler.com]
Sent: 6/26/2017 8:11:49 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Daimler Meeting Request

Hi Mandy-
Hope all is well with you. We were slated to host your boss in a week or so over at our Mercedes-Benz USI plant in Alabama, but unfortunately the scheduling kind of unraveled and it's a no-go. Hopefully we find another date down the road!

In the meantime, I was wondering if you might have some time to meet with me and my colleague, Bill Craven who handles regulatory affairs? Bill is really the point person here in DC for Mercedes-Benz on all things GHG, Mid-Term Review-related. Was wondering if you have some time over the next week or so for a meeting? I know Bill would like to meet you and give you an update on our views related to GHG/CAFE issues.

Thanks Mandy for your consideration.

Joanna Foust
General Manager--Federal Affairs
Daimler North America Corp.
1717 Pennsylvania Avenue, NW Suite 825
Washington, DC 20006
ph: 202-649-4506
cell: 202-281-9109

If you are not the addressee, please inform us immediately that you have received this e-mail by mistake, and delete it. We thank you for your support.

Message

From: Kyle Harris [kharris@corn.org]
Sent: 6/23/2017 3:16:42 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Biogenic CO2

Mandy,

We are looking forward to our meeting on Tuesday 6/27. This week Max Williamson (counsel to the Biogenic CO2 Coalition) sent your Attorneys our draft proposed resolution (it's a document approx. 30 pages) that we feel lays a path forward. I just wanted to make sure you knew that, and hope that they have shared it with you ahead of our meeting.

Have a great weekend!

Best,

Kyle

Kyle A. Harris, Esq.
Manager, Environmental Affairs/ Workplace Safety
Corn Refiners Association
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1701 Pennsylvania Ave NW
Suite 950, Washington, DC 20006
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From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Thursday, June 15, 2017 1:03 PM
To: Kyle Harris <kharris@corn.org>
Cc: David M. (Max) Williamson <maxwilliamson@williamsonlawpolicy.com>; Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: RE: Biogenic CO2

Kyle,

Thank you for the update and I look forward to meeting again soon. I've cc'd Alex Dominguez who can help organize the logistics.

Best,
Mandy

From: Kyle Harris [mailto:kharris@corn.org]
Sent: Tuesday, June 13, 2017 3:03 PM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Cc: David M. (Max) Williamson <maxwilliamson@williamsonlawpolicy.com>
Subject: RE: Biogenic CO2
Importance: High

Mandy,

Your lawyers, the Department of Justice, have contacted us regarding our challenge to the Aircraft Rule, as a status report on our abeyance order is due to the DC Circuit June 28th. This presents a perfect opportunity to sit down and pick back up our conversation regarding the biogenic issue, and share with you our proposed resolution.

We would like to schedule a meeting at your convenience ahead of this June 28th deadline.

Best Regards,

Kyle

Kyle A. Harris, Esq.
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From: Kyle Harris
Sent: Tuesday, May 30, 2017 4:52 PM
To: 'Gunasekara, Mandy' <Gunasekara.Mandy@epa.gov>
Cc: David M. (Max) Williamson <maxwilliamson@williamsonlawpolicy.com>
Subject: RE: Biogenic CO2

Mandy,

I hope you found time to enjoy Memorial Day Weekend. I wanted to follow-up to see if there is anything else I can provide you with to resolve the biogenic issue. Again, we are hopeful for a prompt and permanent resolution to this matter without extended rulemaking and also end all litigation over the Aircraft Rule. We believe the strategy and vehicle discussed in our May 2nd meeting will be the most effective way of accomplishing this.

We would like to schedule a follow up meeting/call at your earliest convenience to further discuss. Additionally, please let me know when may be the most appropriate time to request a meeting between Biogenic CO2 Coalition member CEOs and Administrator Pruitt.

Best Regards,

Kyle

Kyle A. Harris, Esq.
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From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Monday, May 08, 2017 4:53 PM
To: Kyle Harris <kharris@corn.org>
Cc: David M. (Max) Williamson <maxwilliamson@williamsonlawpolicy.com>
Subject: RE: Biogenic CO2

Thank you, Kyle. Appreciate the follow-up.
Best,
Mandy

From: Kyle Harris [mailto:kharris@corn.org]
Sent: Monday, May 8, 2017 4:50 PM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Cc: David M. (Max) Williamson <maxwilliamson@williamsonlawpolicy.com>
Subject: RE: Biogenic CO2

Mandy,

I wanted to follow up and confirm that you received the case studies that I sent last week. I can understand how busy you are- and just wanted to make sure they didn't fall unnoticed to the bottom of your email inbox! Attached here should be everything that I have sent your way (or handed in person) regarding Biogenic CO2. Additionally, please find our comments on the proposed significance rule, as it's our most thorough exposition of the legal arguments surrounding this issue.

Attached you will find:

- Letter sent to Administrator Pruitt upon his confirmation
- One-page overview of the Ag-based Biogenic CO2 issue
- Case Studies developed to frame permitting issues we face
- Comments filed on the Proposed Significance Rule
- Slide deck highlighting EPA Actions/Concerns

I hope you find this information helpful, please don't hesitate to reach out should you have any questions or concerns. Again, we look forward to maintaining an open dialogue and we hope to meet with you regarding next steps in the very near future.

Best Regards,

Kyle

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From: Kyle Harris
Sent: Tuesday, May 02, 2017 4:29 PM
To: 'Gunasekara, Mandy' <Gunasekara.Mandy@epa.gov>
Subject: Biogenic CO2

Mandy,

Thank you for meeting with us today. Per our discussion, I wanted to forward you some 'case studies' that we have developed that put a story behind some of the permitting issues that the members of my association, and others in the coalition, have dealt with on a consistent basis.

I look forward to maintaining a dialogue moving forward- please do not hesitate to reach out should you need any further information. We look forward to next steps in getting this issue resolved.

Best Regards,

Kyle

Kyle A. Harris, Esq.
Manager, Environmental Affairs/ Workplace Safety
Corn Refiners Association
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Message

From: Crystal Coon [crystal@glenncoffee.com]
Sent: 6/19/2017 8:02:36 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: Re: Meet Wednesday?

Thank you!
On Jun 19, 2017, at 3:00 PM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

Great. Alex Dominguez (cc'd) can escort you when you get here. His cell is Personal Phone / Ex. 6. Any questions just let him know.

Mandy

-----Original Message-----
From: Crystal Coon [mailto:crystal@glenncoffee.com]
Sent: Monday, June 19, 2017 3:54 PM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: Re: Meet Wednesday?

Escort up would be great.

CLC
On Jun 19, 2017, at 2:49 PM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

Great - will you be in the building or need an escort up?

-----Original Message-----
From: Crystal Coon [mailto:crystal@glenncoffee.com]
Sent: Monday, June 19, 2017 3:48 PM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: Re: Meet Wednesday?

Thanks so much, Mandy!

Let's shoot for 9:30 a.m. Looking forward to it.

Crystal
On Jun 19, 2017, at 2:46 PM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

Yes - I've heard a lot of great things about you and looking forward to meeting in person. Wednesday, I have time at 9:15 am, 9:30 am or 1:30 pm. Will any of those work? I'm in 3315 A (across from Sarah Greenwalt, if you've been to her office).

-----Original Message-----
From: Crystal Coon [mailto:crystal@glenncoffee.com]
Sent: Monday, June 19, 2017 10:35 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: Meet Wednesday?

Hi Mandy,

You and I have not officially met yet, but I hear great things about all the work and leadership you're bringing to the team. I believe you met my partner Glenn Coffee at a recent NATSO meeting. We are going to be in town this Wednesday and have several meetings at EPA. Would there be time for us to stop by and say hi for 10-15 minutes on Wednesday? I head out Thursday morning after breakfast with Pruitt, so was hopeful I could introduce myself before we leave.

Thanks so much for your time in advance!

Crystal L. Coon
Crystal@glenncoffee.com
405-410-7668

Crystal L. Coon
Crystal@glenncoffee.com
405-410-7668

Crystal L. Coon
Crystal@glenncoffee.com
405-410-7668

Crystal L. Coon
Crystal@glenncoffee.com
405-410-7668

Message

From: Joseph Mendelson [jmendelson@tesla.com]
Sent: 6/22/2017 8:01:49 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: Thanks

Mandy,

Thanks for meeting with me yesterday. It was nice to catch up.

Always happy to give you or Brittany our perspective on things like the fuel economy and GHG vehicle standards.

Congrats on snagging such a nice office too!

My best,
Joe

Joseph Mendelson | Senior Counsel | Policy and Business Development
601 13th Street, NW, 9th Fl. N. | Washington, DC 20005
c 703.244.1724 | e jmendelson@tesla.com

TESLA

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Please consider the environment before printing this email.

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Tuesday, June 06, 2017 12:59 PM
To: Joseph Mendelson (SolarCity)
Cc: Dominguez, Alexander
Subject: Re: Hello & Touching Base

Hi Joe,
Great to hear from you. Late next week would likely work. I've CC'd Alex who can help work out the specifics.
Look forward to catching up soon.
Best,
Mandy
Sent from my iPhone

On Jun 6, 2017, at 6:51 PM, Joseph Mendelson <jmendelsoniii@solarcity.com> wrote:

Hi Mandy,

I hope this finds you doing well and settled in to your new role. Always good to see EPW alumni in top positions!

I was hoping I could set up a time to meet to catch up and discuss a few things Tesla. Would you be available sometime next week?

My best,
Joe

Joseph Mendelson | Senior Counsel | Policy and Business Development

601 13th Street, NW, 9th Fl. N. | Washington, DC 20005

c 703.244.1724 | e jmendelson@tesla.com

<image001.png>

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<image002.png> <image003.png> <image004.png>

Please consider the environment before printing this email.

Message

From: Joseph Riley - Cornoil1 [jpriley@cornoilone.com]
Sent: 6/23/2017 8:09:41 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Kovarik, Kurt (Grassley) [Kurt_Kovarik@grassley.senate.gov]; Mogler, Devin (Ernst) [Devin_Mogler@ernst.senate.gov]; Moore, Andrew [Andrew.Moore@mail.house.gov]; Markowitz, Kenneth [kmarkowitz@akingump.com]; Andrews, Joshua L. [Joshua.Andrews@FaegreBD.com]; Robert Riley [rgrileyjr@feedenergy.com]; Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: Corn Oil One Follow Up
Attachments: Corn Oil One EPA Request_06-23-17.pdf

Dear Ms. Gunasekara:

I appreciate the time you gave us on June 21st to discuss the issues Corn Oil 1 has had with EPA for the last 2-1/2 years.

The conflict between Corn Oil 1 and EPA can be boiled down to one action: The EPA arbitrarily and wrongfully misapplied their regulatory authority.

The attached slide deck explains our situation in a concise, easy to read, format. This provides the essential information you need to question the EPA staff about their past actions.

The congressional staff, my father Bob Riley and I look forward to hearing from you soon about your initial conversations with EPA career staff.

Thank you again for your time and attention to this matter. If there is anything else that I can do to help in your process, please don't hesitate to let me know.

Best regards,

Joe Riley
General Manager
Corn Oil One
515-537-4000

CORN OIL one1®

Joe Riley, General Manager, Corn Oil One

6/23/17

Initial R&D Work

R&D began for CO1
4/30/2010

1st Patent Issued
6/5/2012

Pilot of CO1 Begins
7/2/2012

Due Diligence Business Build-out

EPA Letter leads us to believe CO1 is compliant
10/23/2013

Eco Engineers validates CO1 compliance with RFS2
5/9/2014

First CO1 process is completed
6/1/2014

CO1 Shocked by EPA Ruling

Eco Engineers asks EPA if CO1 minor product qualifies for RFS2
1/14/2015

EPA (Jason Wilcox) initial letter that ALL CO1 products are NOT qualified
1/29/2015

EPA (Aaron Levy) Verbal Decision CO1 doesn't fit pathway
2/24/2015

EPA (Robert Anderson, et al) call – "Bio intermediary Rule was needed"
3/9/2015

CO1 $14.7m Plant Completed
5/1/2015

CO1 Refuses to Accept the Arbitrary Decision

OMB EPA meeting discussing CO1 and Rulemaking
8/30/2016

Unofficial rule released for guidance on Bio Intermediary
10/3/2016

Eco Determines CO1 is not a Bio Intermediary
11/11/2016

EPA Proposes Official Bio Intermediary Rule
11/16/2016

EPA Extends Rule Comment Period
12/27/2016

Eco Engineers Stands by their interpretation
"CO1 is not a Bio Intermediary"
12/31/2016

A New Hope

Trump Inauguration
1/20/2017

CO1 Submits Comments on Rule
2/16/2017

CO1 Meets with EPA (Trump Administration)
6/21/2017

2010 | 2013 | 2015 | 2016 | 2017

$2.7 million spent

$14.7 million spent

$17.9 million spent
889 days in an EPA regulatory nightmare

CORN OIL one1

Questions You May Have

- What does Corn Oil 1 (CO1) do?
- What is a bio-intermediary?
- Why does CO1 feel they have been treated unfairly?

CORN OIL one 1

What does CO1 do?

Distillers Corn Oil → Degum & Refine → CORN OIL one1 Refined Corn Oil

Corn Oil 1 compared to other oil refining

Crude Corn Oil → Refine & Degum → Refined Corn Oil

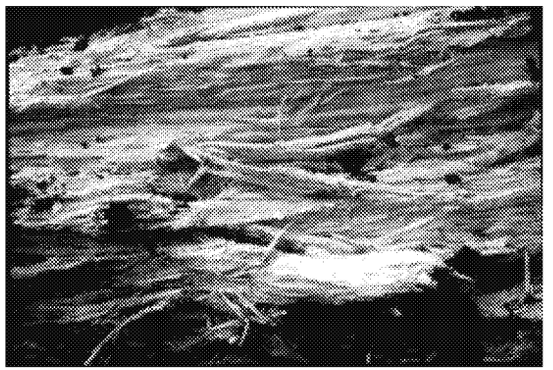
EPA Does *NOT* Allow

Soybean Oil → Degum & Refine → Refined Soy Oil

EPA Allows

What is a Bio Intermediary?

A bio-intermediary is a process that substantially changes a raw material to an intermediate product before converted to a bio-fuel.



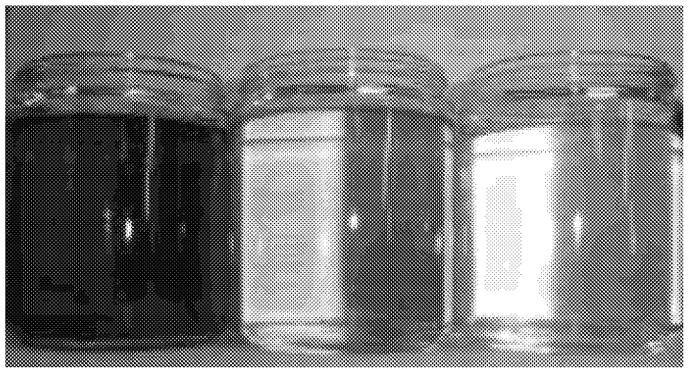
→

Wood chemically and physically processed into Sugar, then alcohol
= Substantially Changing Form = **Bio Intermediary**

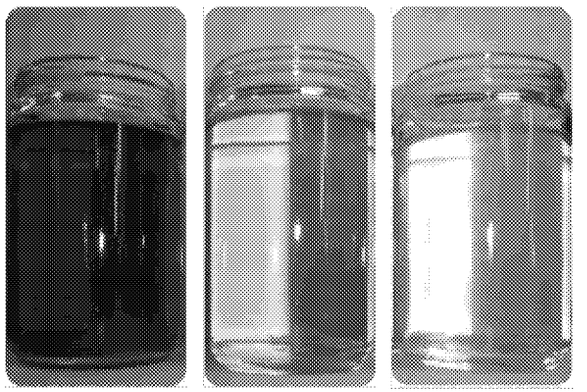
The EPA does not allow products from a bio-intermediary to receive RIN's.

Why does CO1 feel they have been treated unfairly?

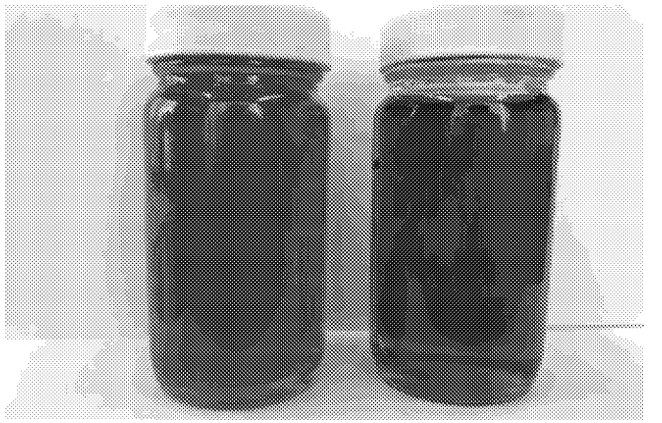
- The EPA Allows Soy and Canola Oil Refiners to qualify for RFS2
- They do not allow CO1 to qualify, saying "CO1 is a bio intermediary"
- Yet CO1 does not substantially change the form of its raw material
- CO1 is no different than the Soy and Canola Oil Refiners



Crude Soy → Refined Soy



Crude Canola Oil → Refined Canola Oil



Crude Distillers Corn Oil → CO1

What we are asking

Official letter from the EPA

EPA needs to immediately certify, as the law intended, that Corn Oil 1 is the same as other vegetable oils, under the original RFS2 designation of non-food grade corn oil, and can generate D-4 and D-5 RIN's.

CORN OIL one 1

Why?

- 139 Jobs to be created
- 14 current Jobs Saved
- $83,000,000.00 economic investment in plants and people alone
- More efficient market
- Increased competition in the market for corn oil
- STEM Jobs
- USA Innovation and Technology

It's the right thing to do

Joe Riley, General Manager

jpriley@cornoilone.com

515-537-4000

Message

From: Dawn Carlson [Dawn@PMCoflowa.com]
Sent: 6/21/2017 6:07:25 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Energy Conference | Administrator Pruitt Invitation to Speak

Hello Mandy,

We had the pleasure of meeting last month when I was with Michael Whitney and David Fialkov with the National Association of Truckstop Operators (NATSO). I had mentioned to you a national ENERGY CONFERENCE we are hosting in September.

It would be an honor to have **Administrator Pruitt speak to our audience on Tuesday, September 12, 2017 in Des Moines, IA.** Would you be able to direct me to the appropriate individual(s) to discuss this opportunity? The Conference has been a great venue for bringing policymakers and industry together to discuss real-world opportunities for success. With 200+ attendees each of the last two years.... From 27 states and 4 different countries... the feedback has been very positive and valuable for participants.

On **September 11-13, 2017, energy leaders from across the U.S. will unite in Des Moines, Iowa** for a national Energy Conference to discuss energy policy and to network in order to create profit-driven opportunities that accomplish the **goals of an energy independent future for America.**

PMCI is a non-profit trade association representing fuel interests. We are leaders in energy policy across the country. Through RINAlliance, Inc., we serve clients all across the U.S. with renewable fuels compliance and energy credit brokering that promotes more sales and usage of renewable fuels. We are leaders in renewable fuel compliance and policy development. The Energy Conference we are hosting unites all levels of the energy chain... from oil companies to biofuel manufacturers and the fuel distributors in between. We are building and sustaining U.S. energy independence through intelligent and industry friendly government policy development.

The audience will include some of the country's largest fuel forward-thinking truck stops and distributors, both petroleum based and alternative fuel based, all seeking opportunities for the future through clean, energy independent fuel options. The speaking agenda includes progressive companies that are assisting distributors with regulatory compliance and risk management as well as financial opportunity venues that have been created by the Renewable Fuels Standard and other energy policies.

Thank you for your assistance and for the meeting in May to discuss the RFS Point of Obligation petition.

Dawn M. Carlson, CAE
President & CEO | PMCI – Serving Neighbors with Fuel & Convenience | PMCI Trust | RINAlliance, Inc.®
10430 New York Ave, Ste F, Urbandale, IA 50322 | o. 515.421.4045 | m. 515.238.9819 | e. Dawn@PMCoflowa.com
Join us at the Energy Conference | September 11-13, 2017 | Des Moines, Iowa

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Message

From: Clint Woods [cwoods@csg.org]
Sent: 6/21/2017 10:02:25 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: SIP/Exceptional Events Examples

Despite the fact that the Agency revised its ground-level ozone standard in 2015, EPA has not yet issued final action on many of the state plan revisions for the 1997 and 2008 ozone standards.

For a state like Florida, EPA has not issued final action on required state plan revisions submitted a decade ago to implement the 1997 ozone standard, which has been revised twice since that time. (https://www3.epa.gov/airquality/urbanair/sipstatus/reports/fl_infrabypoll.html)

From: Clint Woods
Sent: Wednesday, June 21, 2017 2:42 PM
To: 'Gunasekara.Mandy@epa.gov'
Subject: SIP/Exceptional Events Examples

Texas Commission on Environmental Quality, "IMPLEMENTATION OF THE 2015 OZONE NAAQS: State Deliverables and Information Needs," 2015 (this memo was provided to EPA/OIRA ahead of them finalizing the revised NAAQS): "The TCEQ has estimated that the agency's level of effort required to develop an attainment demonstration and reasonable further progress SIP revision for a moderate nonattainment area is 45,000 to 55,000 hours of staff time, with an estimated cost of over $1 million dollars."

Arizona DEQ, March 2017 presentation: Between 2011 and today, Arizona Department of Environmental Quality has submitted more than 55 Exceptional Events Demonstrations. EPA has approved 17 of them, disapproved none, and not acted on the remainder.

Wyoming DEQ, 2015 testimony to House Science Committee: "So far, we are the only agency in the nation that has received concurrence for a stratospheric intrusion event. Based on this experience, each demonstration took between four and eight months to produce. The effort to produce those demonstrations used internal staff with meteorological expertise as well as assistance from the EPA's stratospheric ozone intrusion workgroup, a group of state regulators, Federal regulators, and academics focused on researching and diagnosing stratospheric ozone intrusions.
While the DEQ has not produced a demonstration to show a clear causal relationship between a wildfire and ozone exceedance, the DEQ is familiar with the demonstrations that the EPA has posted as examples for wildfire impacts and ozone. The DEQ has concluded that it would require 15 months and contractor assistance of $150,000 to produce one of these demonstrations and any future demonstrations will require comparable resource commitments."

May 2011 letter to EPA from its Local Government Advisory Committee on Exceptional Events backlog.

William Yeatman, Competitive Enterprise Institute, on limits of EPA's commitment to SIP backlog reform in an August 2016 report: "In this manner, hundreds of new deadlines to review SIPs will come due during the period – October 1, 2013 to December 31, 2017- when the agency is working on the 'old' deadlines in the backlog."

Message

From: Williams, Brendan [Brendan.Williams@pbfenergy.com]
Sent: 6/19/2017 3:00:50 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Quick Question

Mandy-

I hope all is well. I was wondering if you had 10 minutes today to chat about some RFS data I put together relating to how things are looking for this year's compliance. Please let me know if there is a good time to give you a ring whenever you get a chance and thanks in advance for your consideration.

Regards,

Brendan Williams
Government Relations
PBF Energy
601 Pennsylvania Avenue, NW
Suite 900 South
Washington, DC 20004
O: (202) 434-8254
M: (703) 863-6825
brendan.williams@pbfenergy.com
www.pbfenergy.com

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Message

From: Lynn L. Bergeson [lbergeson@lawbc.com]
Sent: 6/23/2017 2:25:21 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Urgent Matter

Mandy,

Congratulations on getting the rules and scoping docs out. No small feat!

Any time for a conversation?

LYNN L. BERGESON
MANAGING PARTNER
BERGESON & CAMPBELL PC
2200 Pennsylvania Avenue, N.W. Suite 100W | Washington, D.C. 20037
T: 202-557-3801 | F: 202-557-3836 | M: 202-257-2872 | lawbc.com

---

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Friday, June 16, 2017 9:24 AM
To: Lynn L. Bergeson
Subject: RE: Urgent Matter

Hi Lynn,

Is this a TSCA related matter?

From: Lynn L. Bergeson [mailto:lbergeson@lawbc.com]
Sent: Friday, June 16, 2017 9:13 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: RE: Urgent Matter

Hi Mandy,

Traveling today so 202.257-2872.

LYNN L. BERGESON
MANAGING PARTNER
BERGESON & CAMPBELL PC
2200 Pennsylvania Avenue, N.W. Suite 100W | Washington, D.C. 20037
T: 202-557-3801 | F: 202-557-3836 | M: 202-257-2872 | lawbc.com

---

From: Lynn L. Bergeson
Sent: Thursday, June 15, 2017 9:46 AM
To: Gunasekara.Mandy@epa.gov
Subject: Urgent Matter

Hi Mandy,

I met you when NACD visited with Administrator Pruitt a few weeks ago. We work with Jennifer, Lucinda, and Eric on a variety of topics, including TSCA. Would you have any time, at any time, for a short call?

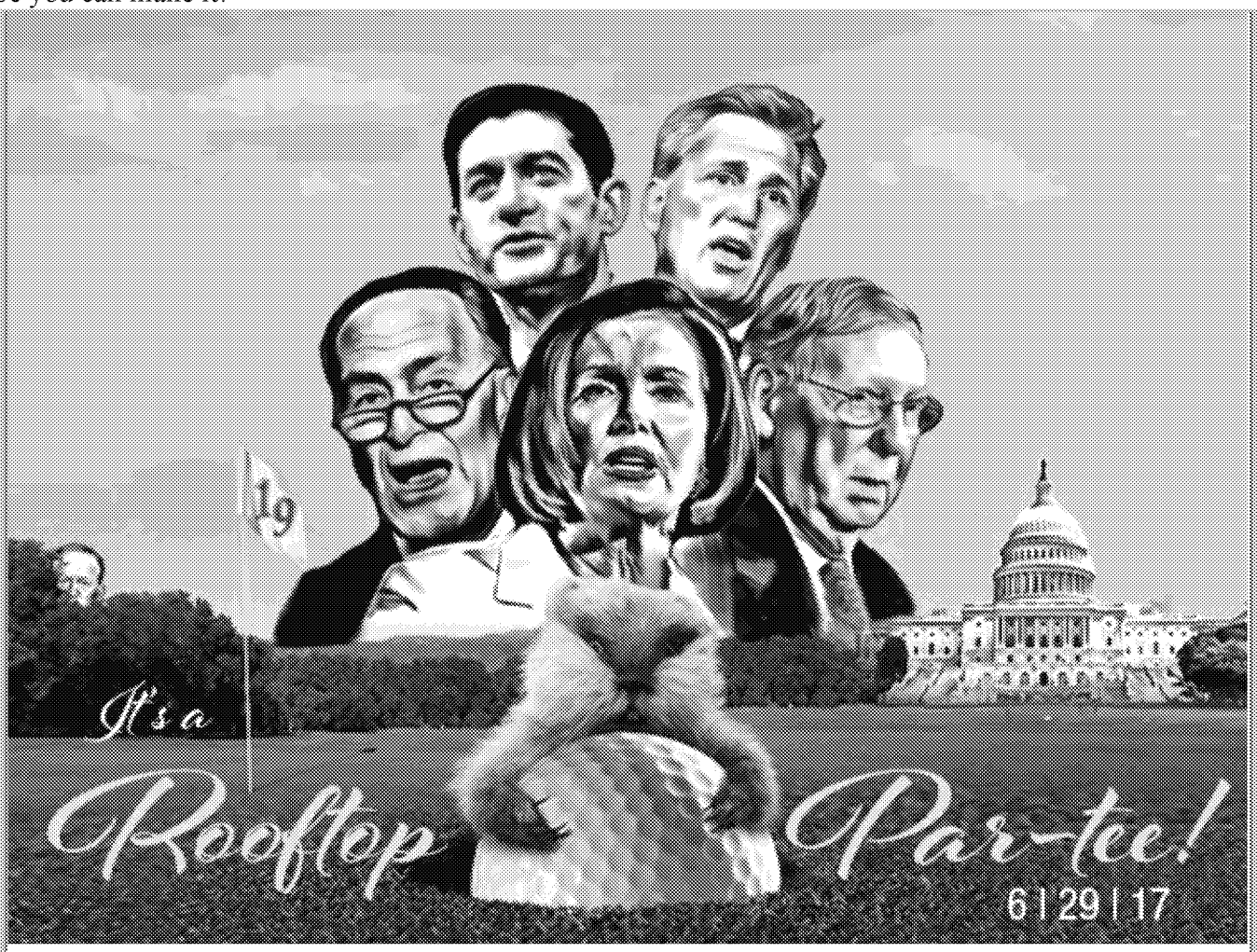
LYNN L. BERGESON
MANAGING PARTNER

BERGESON & CAMPBELL PC
2200 Pennsylvania Avenue, N.W. Suite 100W | Washington, D.C. 20037
T: 202-557-3801 | F: 202-557-3836 | M: 202-257-2872 | lawbc.com

Message

From: Scott.Mason@hklaw.com [Scott.Mason@hklaw.com]
Sent: 6/21/2017 9:11:29 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Come Join Holland & Knight at the 19th Hole for a Rooftop Par-tee

Hope you can make it!



Cannonball! Cannonball, comin' through, Cannonball!

D.C. greenskeepers have found the latest round of congressional golfers on the 19th hole, scoring their own way to success by dodging bunkers and maintaining their composure in the face of adversity.

Cut through the heat of D.C. and tee up with members of Holland & Knight's Public Policy & Regulation Group for a memorable Rooftop Par-tee. Enjoy a great summer evening with friends and colleagues sharing riveting conversations, food and a couple of Arnold Palmers while overlooking the fairways of D.C.

We look forward to seeing you at the annual Rooftop Deck Caucus celebration. This is sure to be a Cinderella story. Well, we're waiting.

DATE/TIME: **Thursday, June 29, 2017**
5:30 – 9:00 p.m.

WHERE: Holland & Knight
800 17th Street N.W.

Suite 1100
Washington, DC 20006

PLEASE NOTE: Holland & Knight has consulted with the House and Senate Ethics Committees regarding this event's compliance with applicable House and Senate rules.

This invitation is nontransferable.

RSVP:

Space is limited. Please register here to attend by June 27.

CONNECT WITH US:

Holland & Knight

The information provided herein presents general information and should not be relied on as legal advice when analyzing and resolving a specific legal issue. If you have specific questions regarding a particular fact situation, please consult with competent legal counsel about the facts and laws that apply.

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Sr Policy Advisor
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800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone 202.469.5330 | Fax 202.955.5564
scott.mason@hklaw.com | www.hklaw.com

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Message

From: Sal Pagano Personal Email / Ex. 6
Sent: 6/19/2017 7:48:51 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Randy Hughes (rhughes@indepmo.org) [rhughes@indepmo.org]; Personal Email / Ex. 6 Personal Email / Ex. 6
Subject: Popular Deceptions, the Book
Attachments: Popular Deceptions Executive Summary with graphs--UPDATED FINAL.docx

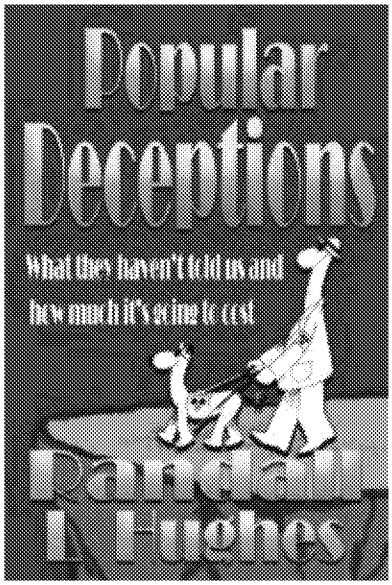
Good Afternoon Mandy –

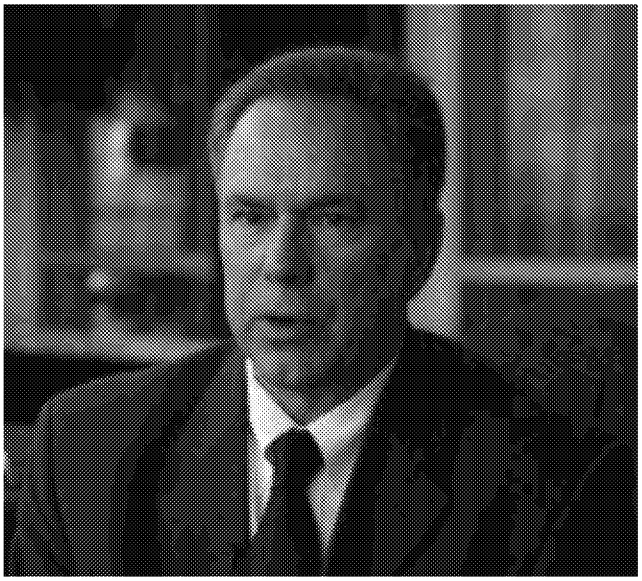
By way of introduction, my name is Sal Pagano and I'm a longtime friend of Randall Hughes, author of "Popular Deceptions". I live in Midland, Texas and am a semi-retired engineer, having spent my entire career in various capacities in the oil and gas industry. I've taken a genuine interest in Randall's book to the point where I assisted him in developing a "Cliff's Notes" condensed version. I have attached it for your review and use -- it can be read in about an hour or so. I had hoped that the condensed version of the book would allow us to reach a number of people, who are in positions of importance that are directly dealing with these issues, much faster than the book itself.

Industry in the U.S. is hit with a myriad of regulations – I believe some are worthy and some are a matter government overreach that are politically motivated. When I read about Popular Deceptions, I was particularly impressed by the fact that it was an objective look at both sides of the global warming argument. I strongly advocate a review of the regulations from a viewpoint on their effectiveness as supported by scientific evidence. This book would be a great resource in that effort. The book has over 300 references to mostly scientific reports that refute the concept that man is the major cause for recent warming trends.

Nearly all scientists on both sides of the fence agree that the globe is warming and man is contributing. But science has determined that 95+% of the cause is mother nature – not man induced! We never hear about this from the press. Scientific evidence should prevail over political agendas and this book, with all its references, can be considered a **handbook** for those researching and responding to the often inaccurate and incomplete "green" claims. I believe that the extraordinary amount of money spent by government and industry on trying to control emissions that are doomed to Mother Nature's upper hand would be better invested on improving the human life experience. In the process, we should be able to bring some jobs back to the U.S. I'm hopeful that this administration will take a responsible approach using science as the guiding force for making decisions in changing policy, and will maintain those regulations that are genuinely beneficial.

I hope the attached is of some help to you. I wish this administration much success in properly educating the public on this very important matter.....Best Regards.....Sal Pagano – Midland, TX





"POPULAR DECEPTIONS"

"WHAT THEY HAVEN'T TOLD US AND HOW MUCH IT'S GOING TO COST"

BY RANDALL L. HUGHES

Biography, video links, and contact information are at the end of this summary.

EXECUTIVE SUMMARY

PART 1 – THE ELEMENTS OF DECEPTION

"All I know is just what I read in the papers, and that's an alibi for my ignorance." – Will Rodgers

Chapter 1 – Facts Are Facts *(References to 6 sources)*

"You can fool all of the people some of the time, and some of the people all of the time, but you cannot fool all of the people all of the time". – Abraham Lincoln

By definition, facts are true, but all facts are not created equal. Statistics are the most often misused, misapplied, and misinterpreted types of facts. They can be easily biased by cherry picking data to emphasize a particular point and to tell the desired story—whether or not that story is true. Despite knowing the dangers of statistics, we continue to allow these "facts" to exert a powerful influence on our beliefs. Beyond statistics, the *missing* facts are often the most critical—a theme that is proven throughout the remainder of the book. Numerous examples support the widespread use of faulty statistics, missing facts, and half-truths for the expressed purpose of shaping public opinion. These deceptions often grow to become popular beliefs. Far too often, the deceptions involve today's most critical health, environmental, and fiscal policies.

Chapter 2 – Science Sells *(References to 12 sources)*

"If we knew what it was we were doing, it would not be called research, would it?" – Albert Einstein

It's hard to argue against science. Therefore, claims supported by independent science are extremely persuasive. Like facts, however, not all science is created equal, not all independent science is truly independent or unbiased, and not all scientific findings are correct. If the results of an independent study match the politics of news editors, the media is quick to sensationalize the findings; often despite glaring weaknesses or obvious biases contained in the research. Consequently, our beliefs can, and are, easily manipulated. Today's science is often for sale.

Chapter 3 – Autism, Science, and the Media *(References to 5 sources)*

"It's the most appalling catalog and litany of some of the most terrible behavior in any research…" – Dr. Richard Horton, editor of The Lancet

Chapter 4 – Silent Spring and DDT *(References to 6 sources)*

"… [Silent Spring is] the most important chronicle of the century for the human race." – US Supreme Court Justice, William O. Douglas

These two chapters relate some history behind popular environmental beliefs reported by the mainstream media and supported by "independence scientific studies." In each case, the science failed to tell the whole story.

PART 2 – SURPRISING DECEPTIONS AND DECEIVERS

"Ultimately, a trend toward abandoning science objectivity in favor of political agendas forced me to leave Greenpeace." – Dr. Patrick Moore, former Director at Greenpeace.

Chapter 5 – Asthma and the Best Kept Secret *(References to 26 sources)*

"… indoor levels of pollutants may be 2 to 5 times – and occasionally more than 100 times – higher than outdoor pollutant levels." – US EPA

According to the EPA, a growing body of scientific evidence has indicated that the air within our homes and other buildings can be more polluted than outdoor air in even the largest and most industrialized cities. Other research indicated that people spend approximately 90% of their time indoors. Thus, for many people, the risks to health are far greater indoors than outdoors.

We're told that increased use of fossil fuels is responsible for the 75% increase in asthma over the last several decades. However, none of today's medical theories regarding asthma point to outdoor air pollution as causing this increase. According to EPA data, between 1970 & 2010, we reduced the amount of asthma-causing pollution by 68%! During this same period, the US population increased 52%, the economy tripled, energy consumption increased 48%, and we nearly tripled the amount of coal burned annually. Given the reduction in pollution, there can be no cause and effect relationship between fossil

fuel use and increased asthma. The truth tells the opposite story we've heard from the mainstream media and the environmental lobby since 1970.

We can't blame industrial pollution for the increase in asthma, yet we continue to attack industry because that's the easy target—society has been trained from childhood to mistrust for-profit corporations. New, tougher EPA regulations are costing more and accomplishing less than previous regulations. They also address the wrong health risk—they ignore indoor air quality. Korea provides a tangible, real world demonstration reinforcing this controversial claim (see the next chapter).

Chapter 6 – Lessons from Korea *(References to 15 sources)*

"… economic growth-development and inexpensive energy drive worldwide improvements in health and longevity. Unnecessarily stringent regulation tends to depress economic growth and standard of living, leading to negative health effects." – The Annapolis Center for Science-Based Public Policy.

Prior to 1948, Korea was one country. The culture and the people of Korea were united. After 1948, the country split and developed radically different economies, energy infrastructures, and sources of pollution. The South Korean economy thrived while North Korea's economy crashed. Today, South Koreans burn 135 times more oil, 34 billion cubic feet more natural gas, and 100 million more tons of coal per year than North Korea. Without the burden of costly US regulations, air quality in the South is the "deadliest" among the world's 30 most developed nations. South Korean CO2 emissions are nearly 7 times that of North Korea. Despite such devastating environmental news, South Koreans live thirteen years longer than North Koreans and outlive Americans and the British. South Koreans also enjoy a far superior quality of life, higher standards of living, and far greater health than their relatives in the North. There is a lot more that goes into human health than air pollution.

Medical studies, the media, and the environmental lobby ignore the negative health impacts of lost jobs and a slowing economy. When it comes to air pollution, North Korea is an environmentalist's utopia. Given all these facts, where would you prefer to live?

Chapter 7 – Irrational Environmentalism *(References to 13 sources)*

"Ultimately, a trend toward abandoning science objectivity in favor of political agendas forced me to leave Greenpeace." – Dr. Patrick Moore, former director of Greenpeace

When it comes to critical issues related to energy, health, and the environment, we seldom hear all the facts. More often than not, what we do hear is sensationalized beyond reason and often hides the fundamental truth. Topics such as Golden Rice (GMOs that prevent blindness and premature death for thousands of children annually), the Mojave Ground Squirrel (blocking solar energy installations), Kansas Prairie Chickens (stopping wind turbine installations), Lizards (stopping oil and gas drilling), and hog Farms (animal feed operations producing renewable energy) are all discussed illustrating the irrational environmental opposition to projects that would immensely benefit the general population with minimal to no negative environmental impacts.

Chapter 8 – The Employment Prevention Agency *(References to 46 sources)*

"It costs $1 Billion more per factory for me to build, equip, and operate a semiconductor manufacturing facility in the United States [than to build and operate the same plant overseas]" – Paul Otellini, CEO of Intel

While regulations are vital to health, safety, and environmental protection, the benefits of new environmental regulations continue to shrink while the cost of implementation continues to escalate. In the first four years of the Obama Administration, the EPA unleashed an unprecedented level of new regulations targeting industry, energy, and ultimately jobs. The new regulations were so intense that Congress requested a report to address the potential negative impacts. Upon receiving the report, some members of Congress threatened to withhold EPA funding if the agency continued to pursue their "Regulatory Cliff". These regulations earned the EPA a nickname: "The Employment Prevention Agency". Just 7 of the 37 most significant and controversial rules are projected to reduce the US GDP by $38 billion/year and reduce the US disposable income by $29 billion/year. These same seven rules are projected to increase electrical costs by $15 billion/year and threaten over 800,000 jobs per year for 20 years. These estimated costs and job losses are the total impact after including the additional green jobs required to meet the new regulations.

Conversely, the message we've been given is that these new regulations will not only improve our health, they'll also drive economic expansion and create jobs. EPA appointees are non-elected bureaucrats who work as an agency fully independent from an elected Congress. They have directly ignored the wishes of Congress to implement their own political agenda. These actions equate to taxation without representation. Between the all-powerful EPA and a lawsuit-happy environmental lobby, the US has lost jobs to other countries and will continue to do so. Before the Regulatory Cliff, green regulations in California resulted in rising energy costs and a significantly slower economy. Jobs left the state in record numbers. This was at a time when the rest of the nation was enjoying robust job growth. California presents a clear example of the potential economic harm and increased job losses if we continue to pursue the EPA's extreme environmental agenda.

PART 3 – THE IMMACULATE DECEPTION

"Everybody talks about the weather but nobody does anything about it." – Mark Twain

Chapter 9 – What We Know and Might Not Know About Global Warming *(References to 18 sources)*

"Scientists … say they have confirmed beyond doubt that climate change is being caused by human activity." – February 18, 2005 ABC News Online

Global warming is real – the planet is getting hotter. No one disputes that fact. The debate deals with two issues. First – Is the warming abnormal? Second – Are humans the primary cause? Before answering these questions, we should also ask ourselves if the science is complete.

This chapter exposes the massive weaknesses of all computer simulation models; effectively demonstrates how easily these models can be manipulated to provide the desired answer; and explains why computer models are never accepted as scientific proof—unless, of course, the media and powerful special interests don't provide all the facts.

The chapter also points out that only a handful of the roughly 5,000 scientists working on the United Nations climate studies actually evaluated the potential causes of today's warming. Additionally, the final reports are edited and re-written by another small team of government appointees.

Next, the chapter reveals a few critical facts that have not been reported. Examples are listed below.

- Historically, temperatures have always changed before levels of atmospheric CO2 changed – it's never worked the other way around.
- Today's level of atmospheric CO2 is quite low by long-term historic standards. CO2 concentrations have been up to twenty-five times higher than today's levels without causing unstoppable global warming. Those high levels of CO2 also failed to prevent ice ages from subsequently occurring.
- In their first assessment report, the UNIPCC showed graphs indicating that today's temperatures are below Earth's average temperature over the last 10,000 years—and we know that CO2 levels were lower during these recent hot periods (See Graph #1 in the Appendix.).
- **While humans emit 90 million tons of CO2 every day, Mother Nature is emitting over 1.8 billion tons: more than 95% of all CO2 emissions.**
- When asked about past climate changes, the UNIPCC indicated that over the majority of the last 500 million years, Earth was much warmer than today and most likely completely free of glaciers and polar ice. (How high were ocean levels back then?)
- Because our planet still has permanent ice sheets and glaciers, scientists agree that Earth is currently in an ice age that began one million years ago. We happen to be lucky enough to be living in one of many short and *highly beneficial* warm periods of this ice age.
- "Recorded history" for average global temperatures began at the precise time historians tell us the Little Ice Age was ending. The UNIPCC agrees: "It is clear that the period of instrumental (temperature) record began during one of the cooler periods of the past millennium." **If we started recording temperature at the end of an ice age, shouldn't we expect today's temperatures to be the highest ever recorded?**
- NASA satellites indicate that nearby planets are warming in similar fashion to Earth.
- The high court in the UK ruled that Al Gore's Nobel Prize winning documentary film, *An Inconvenient Truth,* could not be shown in UK classrooms unless teachers first identify the film as a political work, not a work of science. Teachers are also required to read a laundry list of false claims made in the film that are not supported by science.

These well-established bullet points have received little attention from the media, environmentalists, and others. That's because the debate generally ends with the "scientific consensus" where we're told that 97% of all expert scientists agree with the popular theory that humans cause global warming. Debate over, right?

That depends. If you explore the details behind those surveys developing this high percentage consensus, you'll find they were all performed by environmentalists and they all suffer similar flaws. For example, a 2013 survey was published in the proceedings of the National Academy of Science – so we know it's a legitimate survey. The media told us this survey reviewed 12,000 climate studies and found a 97%

consensus. The media didn't do their homework. They didn't tell us: 1) That only 4,000 of the studies surveyed (34%) evaluated the "cause(s)" of today's warming; 2) That only 1,400 scientists responded to the survey; 3) That only 1,358 of these 1,400 scientists agreed that humans "contribute" to today's warming; or 4) That the survey never asked if humans are the "significant" driver of today's warming. I'm no scientist, but I have no doubt that we "contribute" to warming. So why didn't the 1,400 responding scientists have 100% agreement? The finally tally of this survey was 1,358 opinions out of 12,000 studies—less than a 12% consensus.

Those promoting belief in human-caused global warming (a.k.a., "Believers") are publishing only what they want you to hear and believe. Simply stated, we haven't been told the whole story.

Chapter 10 – History Repeats Itself *(References to 19 sources)*

"Formerly the earth produced all sorts of fruit, plants, and roots. But now almost nothing grows...Frost and cold torment people. The good years are rare...Only a few take care of the miserables."
– Olafur Einarsson (Iceland, 1573-1659)

This chapter demonstrates that today's climate change is not unusual, the change is not occurring more rapidly than past climate changes, and we can compare today's changes to those of the past. It's also apparent that past climate changes have impacted the entire planet, not just one hemisphere. Since the beginning of the industrial revolution, which started about 150 years ago, we've had warming and cooling periods. In 1922, dire warnings were written about unheard-of high temperatures in the Arctic. This was happening despite lower levels of CO2. In fact, Earth warmed faster prior to the 1930's than it is warming today. From the early 1940's to the mid-1970's our planet cooled dramatically despite rapidly increasing levels of CO2. The 1970's media buzz focused on the coming ice age. Simply put, Earth's climate has changed repeatedly over the last 150 years and for all of Earth's history.

Scientists routinely indicate that these past climate changes were caused by a combination of changing volcanic activity, changing solar activity, and regular changes in Earth's orbit around the sun. Levels of greenhouse gases have also changed throughout Earth's history. The question is whether greenhouse gases or other natural events played the major role in causing past climate changes. The UNIPCC cited two recent warming events when temperatures were higher than today, yet CO2 levels were lower than today. In other words, some natural climate drivers other than CO2 caused Earth's two most recent warm periods. Are we to believe these climate drivers stopped working when humans discovered fire? There is one thing we know about the occurrence of long-ago warm periods – human activities were not the cause.

Chapter 11 – Weather Proof *(References to 11 sources)*

"[Al] Gore points out the increase in wildfires, the melting glaciers and gradual drying up of all continents as proof of global warming." – Good Morning America

Numerous examples are provided to show that today's extreme weather is not unique, abnormal, or any more dangerous than the extreme weather events of the past – despite sensational headlines to the contrary. Such events have occurred during periods of higher and lower global temperatures. Simply put, media stories sensationalizing today's weather could have been written for practically any year in Earth's history.

The UNIPCC, environmentalists, and the media are moving away from the term *global warming*, and are starting to use the term *climate change*. Despite their "undeniable proof", they can't guarantee that warming is the only change we'll experience over the coming decades and centuries. With this simple change in terminology, Believers can blame human activities for any and all changes in the weather.

Chapter 12 – Simple things *(References to 20 sources)*

"If the facts don't fit the theory, change the facts." – Albert Einstein

The simplest portion of evaluating climate change has to be comparing today's temperature readings to averages over the past 150 years. This not an apples-to-apples comparison and it's not as simple as imagined. Historic temperature records are plagued by changes in technology, thermometer locations and thermometer exposure to the elements. In the late 1800's, there were as many as 1,000 thermometers primarily located across Western Europe. The number of "official" recording stations grew to over 6,000 in the 1970's and 1980's but has since declined to only 2,400 sites today. The lack of worldwide data prior to the 1940's and the constantly changing number and location of official readings introduce uncertainties and the potential for errors and bias in the historic record. "Recorded temperature history" is filled with assumptions and conjecture. It is highly imprecise, yet we're worried about recent new record highs—highs that are within 100ths of a degree warmer than past *records*.

It's worth noting that warming since 1998 is far below the most optimistic computer projections from the UNIPCC—It seems apparent that the UN's computer models—the foundations of *proof*—are wrong.

Chapter 13 – Pants on Fire *(References to 10 sources)*

"People will believe a big lie sooner than a little one and if you repeat it frequently enough, people will sooner or later believe it." – Walter Langer, Creator of the FBI's Behavior Analysis Science

The Holy Grail of global warming is the 2006 documentary film, An Inconvenient Truth. It presented the concept that humans are the main cause of global warming. Upon closer examination, the film's "strongest evidence" *proving* this theory was shown in two graphs – historic temperatures vs time and CO2 levels vs time (See Graphs #'s 2 & 3 in the Appendix). The conclusion in the film was that CO2 drives changes in temperature. However, if you overlay these graphs and zoom in, it can easily be seen that temperatures have always increased before CO2 increased and have always declined before CO2 declined!! You'll also find that temperatures began to fall when CO2 levels were rising and temperatures began to increase when CO2 levels were declining. The film's "strongest proof" actually demonstrates that something other than CO2 has always caused temperature to change first.

The message in this film was clearly deceptive and the deception was intentional. It was also easily accomplished. By showing 650,000 years of data, the audience could not see the details to show what was actually occurring. This and several other false claims in the film led the Supreme Court in the UK to force teachers to read a disclaimer before the film can be shown in UK classrooms. Simply stated, the film is a political work – an environmental infomercial – not a scientific work. It presents a biased, prejudicial,

and completely one-sided view of global warming – and the mainstream media is an accomplice in the deception by failing to properly investigate the facts behind the film.

Chapter 14 – Carbon Gate *(References to 17 sources)*

"You can observe a lot by watching." – Yogi Berra

Prior to the rise of the global warming issue, there was little news related to CO2. That's because CO2 is not a pollutant. It may be a heat-trapping greenhouse gas, but it occurs naturally and it is as essential for life on this planet as water and oxygen. It does not cause dirty air, smog, asthma, lung disease, heart disease, cancer, or any other health-related problems. That's clearly not how we define a pollutant. It's also the exact opposite of the perceptions we're given regarding CO2.

While humans emit 90 million tons of CO2 daily, Mother Nature is emitting 1.8 billion tons; over 95% of all CO2 *pollution*. On a pound for pound basis, CO2 has the lowest global warming impact of the more than 30 greenhouse gases studied by the UNIPCC. Water vapor is responsible for some 95% of the greenhouse effect. When we combine the impact of water vapor and other greenhouse gases, human CO2 emissions are responsible for less than 0.5% of the greenhouse effect.

Developing countries emit over half of all human related greenhouse gases compared to developed countries. Surprisingly, the UN's 1997 plan to save the planet from CO2 (the Kyoto Protocol) ignored developing countries and only required developed nations to reduce CO2 emissions. Scientists unanimously agree that today's 400 ppm level of atmospheric CO2 is very low by long-term historic standards – 150 million years ago it was 8 times greater than today. Furthermore, science indicates that over Earth's history, ice ages have occurred during periods of high CO2 levels. This strongly suggests that CO2 could not have been the principal driver of past climate changes. Believers argue, without proof, that even the small amount of human CO2 emissions upset Earth's natural balance. However, history demonstrates that natural forces have caused far greater changes in Earth's balance of CO2. The media's refusal to report all the facts has incorrectly molded our perception of CO2 as an environmental evil.

Chapter 15 – Meeting the Skeptics *(References to 13 sources)*

"I think that those people [global warming Skeptics] are in such a tiny, tiny minority now with their point of view. They're almost like the ones who still believe that the moon landing was staged in a movie lot in Arizona and those who believe the Earth is flat." – Al Gore (2008)

Skeptics have been reviled and discredited from day one. They've been accused of spreading disinformation, no matter how strong their scientific arguments. There are several misconceptions about Skeptics that should be clarified:

- Skeptics agree that global warming is real.
- Skeptics don't oppose environmentalism—most have spent their entire careers supporting environmental causes.
- Skeptics agree that human CO2 emissions contribute to global warming, but believe CO2 plays an insignificant role compared to other natural climate drivers.

- Skeptics know that severe weather, melting ice caps, rising oceans and other warming-related events demonstrate the *effects* of global warming, but prove nothing about the *cause* of global warming.

The work of the UNIPCC failed to heed observed history and ignored natural causes that have demonstrated their role in causing climate change. A noted Skeptic, Dr. Bjorn Lomborg, argues that the UNIPCC's proposal to reduce greenhouse gases will have no meaningful impact on climate change while wasting trillions of dollars that could otherwise provide tremendous improvements in health and standards of living. When Canada began implementing CO2 reductions to meet the terms of the Kyoto Protocol, sixty scientists from around the world sent an open letter to the Canadian Prime Minister protesting the need for CO2 curbs. They were emphatic about three main points: 1) There is no scientific consensus regarding the cause of global warming; 2) Computer models are not accurate and are of little use for predicting climate – other than creating alarmist headlines; and 3) efforts to reduce greenhouse gas emissions won't have a measurable impact on Earth's climate. Many other scientists have joined in large numbers to sign similar letters objecting to the work and the conclusions of the UNIPCC. One of the most telling of these objections was written by Dr. Paul Reiter, a former UNIPCC scientist. He revealed in court testimony that the UNIPCC's final reports are written and edited by a small group of non-scientists (environmental activists) who often reversed the conclusions of the participating scientists! A growing number of UNIPCC's scientists are joining the ranks of this former UNIPCC scientist.

Chapter 16 – Flares, Tilt, Wobble, and Whirl *(References to 12 sources)*

"What we've got here is a failure to communicate." – Cool Hand Luke

Solar activity has a pronounced effect on Earth's climate. Historical records show a remarkable correlation between global cooling/warming and solar activity. The sun has an eleven-year sunspot cycle and other repeating cycles lasting 22 years, 1,500 years, 11,000 years, and 100,000 years. There are changes in the Sun's position inside our solar system every 179 years. Our planet has a wobble that causes Earth's tilt to change over a repeating 41,000 year cycle. Earth's orbit around the sun is oblong, not circular, and it has a repeating 22,000 year cycle that places it closer to the Sun at different times of the year. Cold water from the Ocean depths routinely circulates to the surface creating significant changes in temperature, pressure and wind patterns. These ocean oscillations have a 30-year cycle and are linked to the warming and cooling periods experienced over the last 150 years. When we combine Earth's repeating cycles with recurring changes in solar activity and ocean oscillations, we get enormous changes in climate that are driven by natural events other than CO2. Despite this evidence, the UNIPCC insists that CO2 is the lone guilty party causing global warming. Can we trust the UNIPCC?

Chapter 17 – Marketing Trumps the Truth *(References to 2 sources)*

"Human-caused global warming is like a brand that can be sold. This is the course we must follow to change the public's beliefs and behaviors." – Paraphrased: The Institute for Public Policy Research (IPPR)

Like all big businesses, environmental organizations hire their own marketing experts to help promote their side of key issues, especially an issue as important as global warming. A few of the recommendations

from marketing reports prepared for environmental groups by the Institute for Public Policy Research and by EcoAmerica are shown below:

- Our task is not to persuade by rational argument, but to work in more clever ways.
- Always insist that the argument has been won.
- Tell your audience that the only remaining Skeptics are paid experts.
- Treat the facts as such a given, "… they (the facts) need not be spoken."
- Myth can be a powerful tool of persuasion.
- Talk about human values including clean air, energy independence, and creating new jobs, but don't discuss specifics because that can level the playing field.
- Don't talk about cap-and-trade, but talk about a "pollution reduction fund" or "cap and cash back"
- Avoid discussing the costs—that hurts or position.
- Don't differentiate various forms of pollution (link CO2 to all forms of pollution).
- Alarmism can be a good thing if your audience knows solutions are available. Sell the concept that tiny actions can save the planet.

These sound marketing recommendations don't lead to presenting the fundamental facts. Environmentalists are instructed to ignore the facts, the costs, and rational argument, and instead use creative word choices that target the value systems of voters. This is the marketing we might expect from Big Business, not our trusted environmental organizations. We've been deceived and the deceptions are intentional.

Chapter 18 – Means, Motive and Opportunity *(References to 14 sources)*

"You never want to let a good crisis to go to waste." – Rahm Emanuel, Former White House chief of staff

If you want to induce mass behavior change, a good old fashioned crisis is the best way to accomplish your goal. Global warming represent the perfect crisis—the end of an inhabitable planet. The UN is leading the charge to rectify this "crisis". However, the UN is by definition the most political organization on the planet. Just as important, undeveloped nations form the majority of UN members.

Consequently, one of the UN's primary goals and objectives is to speed development of Third World countries through partnerships with developed nations. The UN and the World Health Organization specifically cite access to affordable energy as the key for achieving these goals. Under the guise of saving the planet, the UN orchestrated a plan (the Kyoto Protocol) where the funding to install affordable energy in undeveloped countries would come from developed countries. At the same time, the UN's plan placed limits on greenhouse gas emissions from developed nations but only asked for voluntary reductions (which are not enforceable) from Third World countries – even though they were emitting 20% more greenhouse gases than developed countries. The plan had little to do with saving the planet and everything to do with speeding development in Third World countries.

Enforcing the UN's plan will increase energy costs in developed countries while providing low cost energy to undeveloped nations. This provides a distinct competitive advantage for attracting jobs. Of particular interest is that China and India are considered undeveloped nations even though China was already the world's largest emitter of CO2. The US participation in the UN's plan allows these two countries to install

affordable energy at our expense, despite their large economies. Their motives for promoting the global warming crisis are very clear. The motives of climatologists (government grants for climate studies), Al Gore (fame and fortune), Wall Street (profits from cap-and-trade speculation), government (another tax), and the media (advertising sales) are also very clear. One might be inclined to believe a conspiracy is underway . . .

Chapter 19 – Vapor Proof *(References to 8 sources)*

Only an insignificant fraction of scientists deny the global warming crisis. The time for debater is over. The science is settled." – Al Gore (1992)

The UNIPCC's "proof" for global warming ultimately relies on computer models. It has already been noted that accurately predicting future climate is virtually impossible because of all the variables, some known and some unknown. Emails from noted UNIPCC scientists were hacked in 2009 and in 2011 and made public in what was called Climategate. Those emails reflected a biased selection of data by UNIPCC scientists and the exclusion of data that didn't support the UN's desired story. It would seem that these emails are more than newsworthy, but instead of becoming the scandal of the century, Climategate quickly faded from public view. The media gave the UN and their scientists a free pass. We still haven't been told the whole story behind Climategate. We should never underestimate the power and influence of the environmental lobby. The motives of the UN should not be forgotten. The media's ability to influence our beliefs should terrify us all.

PART 4 – WE'RE FROM THE GOVERNMENT, WE'RE HERE TO HELP

"Any man who thinks he can be happy and prosperous by letting the Government take care of him; better take a closer look at the American Indian." – Henry Ford

Chapter 20 – Energy, the Final Frontier *(References to 34 sources)*

"Energy cannot be created or destroyed." – The First Law of Thermodynamics

Humans require food, water, and shelter for survival. Energy is likely the next priority on our list of basic survival needs. There are reasons fossil fuels are the dominate form of energy in use today—they are abundant, readily available, affordable, and provide cost effective electricity and transportation. The big objection to fossil fuels is that they are not "clean" or sustainable (ignoring the fact that we've cleaned the air despite increased use of fossil fuels and world reserves of fossil fuels are at all-time highs). Wind and solar energy are preferred because they are clean and sustainable.

But these renewable sources remain more expensive and have their own limitations. They don't generate when the sun doesn't shine or the wind doesn't blow—and effective energy storage is decades away. If it wasn't for government subsidies, solar and wind energy would not be economically feasible. Nuclear energy and newer forms of renewable energy such as biofuels, fuel cells, bacteria, and others have their own set of challenges. These include poor economics, low availability, and (surprisingly) negative environmental impacts. Fossil fuels are the best available and most affordable source of energy for consumers, taxpayers, job seekers and future generations. Ignoring this fact, the environmentalists' objective is to achieve a total ban on fossil fuels by 2050. A tremendous amount of research, testing, and

expense will be required between now and then if we are to achieve this goal without devastating the economy.

Chapter 21 – We're from the Government; We're here to Help *(References to 4 sources)*

***"We have to pass the bill so you can find out what's in* it." —Nancy Pelosi, US House of Representatives**

Washington is broken. When Congress finally manages to pass legislation, lawmakers can't explain what it means, how it will work, or how much it's going to cost. In 2009, climate legislation entitled The American Clean Energy and Security Act of 2009 passed the House but not the Senate. It never became law. What's troubling is that Al Gore was asked to address the committee charged with finalizing the bill's language. At the same time, some committee members requested that Lord Monckton of the UK also be allowed to address the committee. He was one of the many experts who testified against the use of An Inconvenient Truth (Gore's work) in UK classrooms. He was refused and the committee only heard from Gore. Like the media, this House committee wanted no part of a legitimate debate.

Chapter 22 – What it All Means

"Our greatest responsibility is to be good ancestors" – Jonas Salk

It is our responsibility to protect the environment for future generations, but there's a point of diminishing returns – a point where our exuberance for environmental perfection slows economic activity, lowers standards of living, and ultimately harms human health. The resulting damage carries forward into the future, harming the opportunities and prospects available to our children and their children. Environmental stewardship requires that science, not political agendas, drive our public policy. The environmentalists oppose the things that have always improved human standards of living, increased longevity, and improved human health. The environmental lobby is no longer our friend or our benevolent protector.

To be clear, "green" organizations are filled with honest citizens who are sincerely fighting for their cause based on the information they've been given; information that seldom tells the whole story. It's the leadership in these organizations that have become the enemies of truth. Their ultimate goal is a world that operates more like North Korea than South Korea – a goal none of us should find appealing.

The media's coverage of global warming and practically every topic related to health, energy, and the environment has been grossly misleading. The media's bias is unconscionable and it's an obscene abuse of their power and influence. Human-caused global warming is a myth; it's the lie that went too far. The only catastrophes linked to climate change are the unfolding economic destruction tied to mandated restrictions of CO2 emissions and the media's obsession with presenting only those facts that match their view of how we should live our lives. It is vital that we protect the environment, but striving for environmental perfection is not the answer with the energy alternatives we have at this point. Allowing free markets to determine our path forward will benefit humanity and the environment well into the future.

Author Biography and References to More Information

Randall L. Hughes has spent over 30 years as an energy engineer focused on environmental compliance and long term planning for our energy future. Randall has worked with the EPA, the Sierra Club, and Congress to find energy solutions that blend our need to protect nature with our need for affordable energy. With this background, he keenly understands the urgent battle we face to protect our planet, but he also understands the pitfalls associated with many battles we're currently waging.

You can contact Randall at PopularDeceptions@Yahoo.com. You may also want to visit the website, www.PopularDeceptions.com. Phone: (816) 719-9711. Finally, Randall can be available to make a presentation to your group.

Here are two YouTube videos:
https://www.youtube.com/watch?v=sriUBoJjce0 and
https://www.youtube.com/watch?v=0wnNZmgqRmw

The book is listed on Amazon: https://www.amazon.com/Popular-Deceptions-What-havent-going-ebook/dp/B00IOXGGQC

ADDENDUM:
PROOF THAT WE'VE BEEN FOOLED—
HUMANS DON'T CAUSE CLIMATE CHANGE!

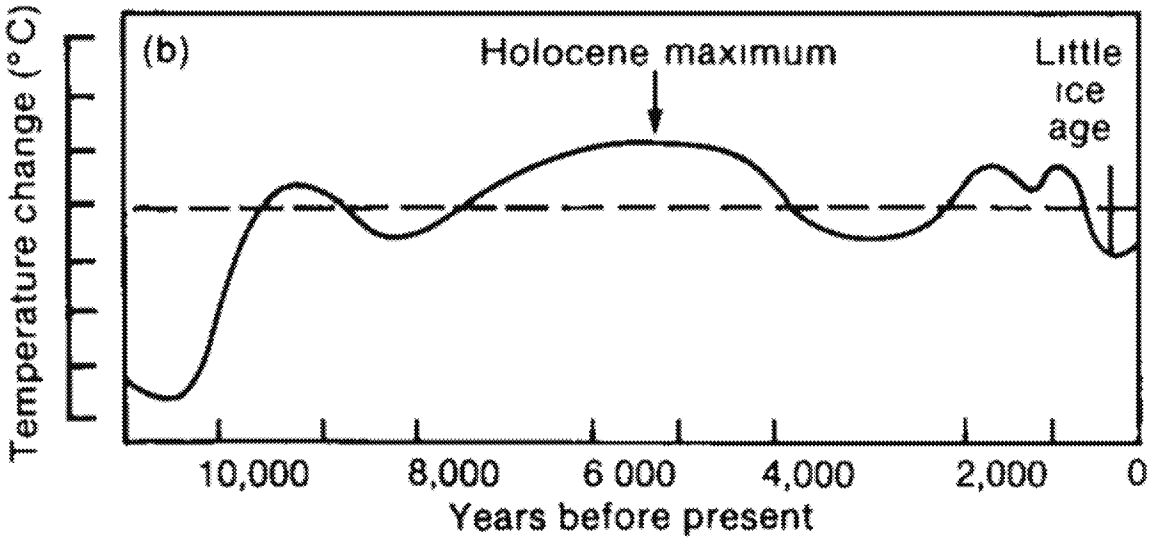
To be clear, no one denies that Earth is warming and no one denies that human CO2 emissions contribute to the warming. The question is the extent of our impact. Does CO2 play a major role, a minor role, or an insignificant role? The hidden science and Earth's history demonstrate that CO2 has always played an insignificant role.

Today's Temperatures: "The Highest Ever Recorded!"

This is a true and frightening fact, but it ignores the far more critical fact. According to the acknowledged climate experts, the United Nations' Intergovernmental Panel on Climate Change (UNIPCC), today's temperatures are **below** Earth's average temperature over the last 10,000 years. This well-hidden information can be found in the report titled "The UNIPCC Scientific Assessment (1990)". The graph below is from Figure 7-1 on page 202 in Chapter 7, "Observed Climate Variations and Change." You can see Chapter 7 for yourself at:

http://ipcc.ch/ipccreports/far/wg_I/ipcc_far_wg_I_chapter_07.pdf.

UNIPCC: 10,000 Years of Temperature[1]



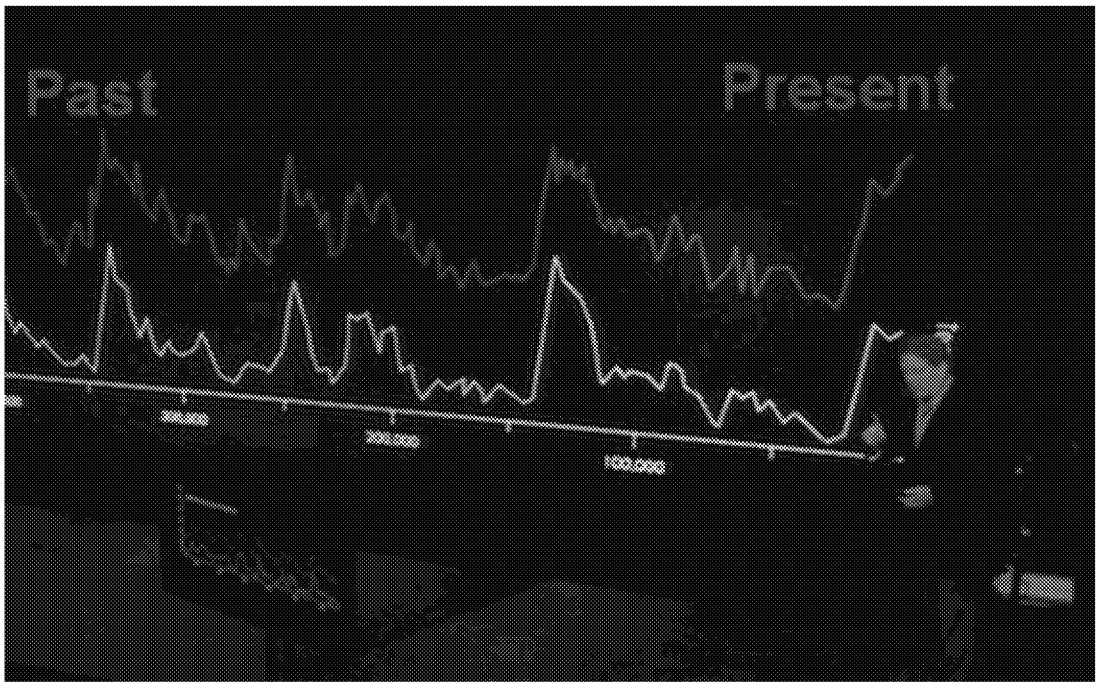
When CO2 levels were lower than today, Earth was much hotter. Obviously something other than CO2 caused these past warm periods. Scientists simply cannot ignore this information—yet that's exactly what the UNIPCC, the media, and environmentalists have done.

[1] J.T. Houghton, G.J. Jenkins, and J.J. Ephraurms (eds.) "Report prepared for the Intergovernmental Panel on Climate Change by Working Group I," Cambridge University Press, Cambridge, Great Britain, New York, NY, UNIPCC first assessment report, 410, "Climate Change: The IPCC Scientific Assessment (1990)"; Chapter 7, "Observed Climate Variations and Change," Figure 7.1, 202, USA, Melbourne, Australia, 202

An Inconvenient Truth

The Holy Grail of human-caused climate change is Al Gore's 2006 Nobel Prize winning documentary film, *An Inconvenient Truth*. In that film, the "strongest proof" that CO2 drives temperatures was shown in a graph (see below). As shown in this graph, it appears obvious: over the last 650,000 years, every time CO2 changed, temperatures changed. Appearances can be (intentionally) deceiving, as we'll see in the third graph farther below.

650,000 Years of Past Temperatures and CO2 levels



The Actual Scientific Data

If we zoom-in on ANY 5,000 year period of time in this graph and move the lines for CO2 and temperature together, we see the real inconvenient truth—**Temperatures have always changed before CO2 changed.** In 650,000 years, it has never worked the other way around! [2, 3, 4] After hearing science from both sides of the global warming debate in 2007, the Supreme Court of the UK agreed that this is what science actually proves.

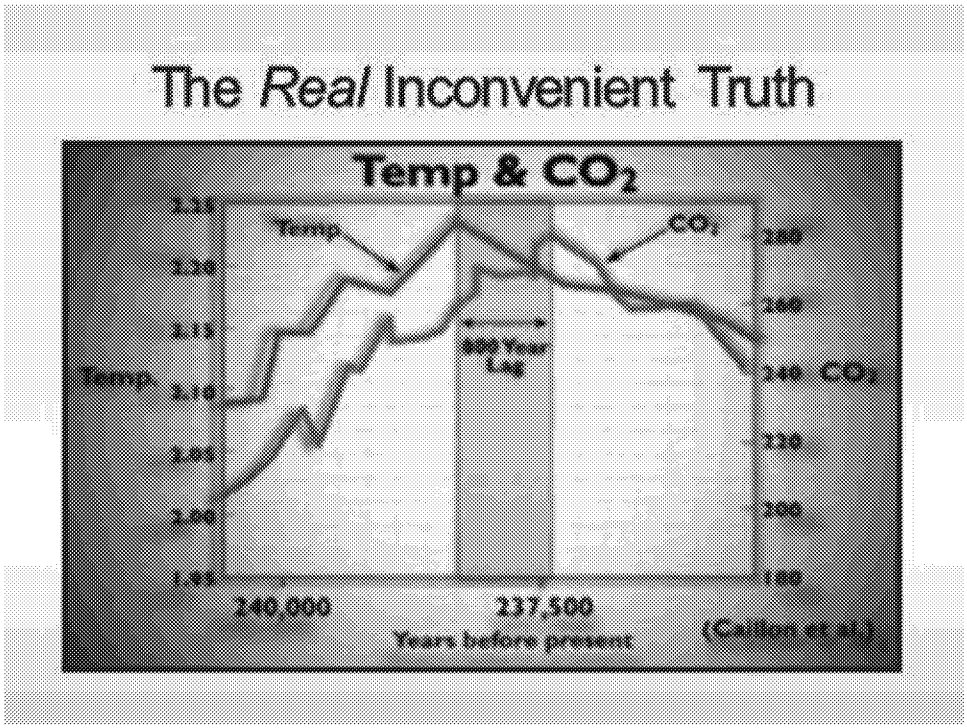
---

[2] Fischer, H., Wahlen, M., Smith, J., Mastroianni, D. and Deck, B. (1999), "Ice core records of atmospheric CO2 around the last three glacial terminations," Science, 12 March 1999: Vol. 283 no. 5408, 1712-1714.

[3] . Petit, J.R., Jouzel, J., Raynaud, D.,Barkov, N.I., Barnola, J.-M., Basile, I., Bender, M., Chappellaz, J., Davis, M., Delaygue, G., Delmotte, M., Kotlyakov, V.M., Legrand, M., Lipenkov, V.Y., Lorius, C., Pepin, L., Ritz, C., Saltzman, E. and Stievenard, M., (1999); "Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica," Nature 399: 429-436.

[4] Staufer, B., Blunier, T., Dallenbach, A., Indermuhle, A., Schwander, J., Stocker, T.F., Tschumi, J., Chappellaz, J., Raynaud, D., Hammer, C.U. and Clausen, H.B. 1998, "Atmospheric CO2 concentrations and millennial-scale climate change during the last glacial period," Nature 392: 59-62.

What the Hidden Science Actually Tells Us

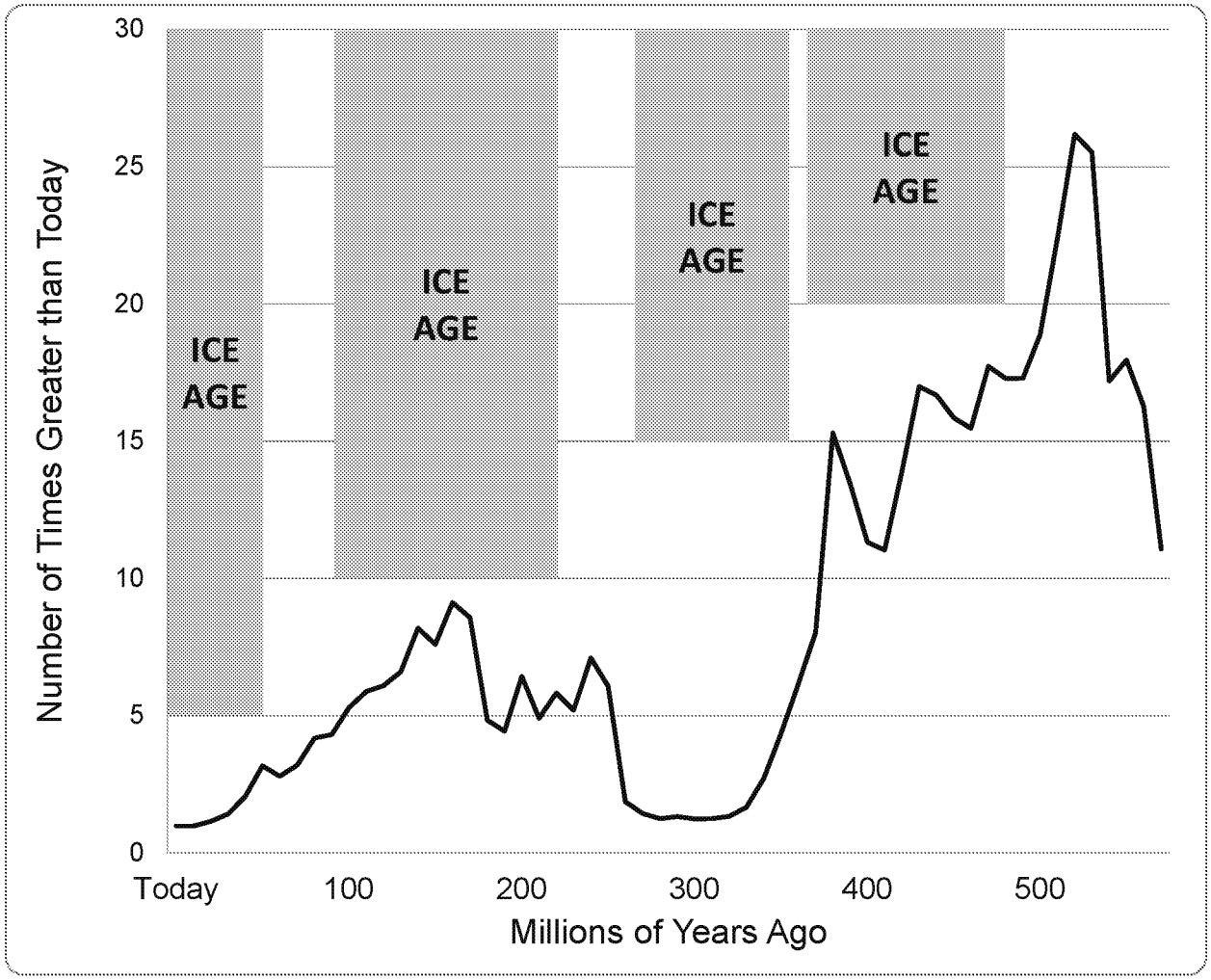


The Scientific data used to "prove" that human CO2 emissions are the primary driver of climate actually demonstrate that CO2 is a temperature follower, not a driver. There are numerous well-known physical laws of nature that explain why this is expected.

What is Earth's Natural Balance of CO2?

There is no doubt human contributions are helping to increase atmospheric levels of CO2. However, science tells us that natural forces drive changes that far exceed the worst case increase that human activities could ever achieve. This fact is demonstrated in a series of NASA funded research efforts, called the GeoCarb Studies. These studies identified Earth's long-term historic levels of atmospheric CO2. The results are shown in the graph on the following page.

NASA: GeoCarb Study Results



The Ice Age timelines are provided by the website, *The History of the Universe*; and sourced from the Geological Society of America, *GSA Today*.[5] Additional sources document the same ice age timelines.

Additional Facts You'll Find in *Popular Deceptions*

- There is no 97% scientific consensus
- Computer models prove nothing…and every scientist knows this
- NASA satellites indicate planets in our solar system are warming like Earth
- Solar activity has steadily increased over the past 100-years
- The UN has powerful motives for promoting human-caused climate change
- Society has been deceived and the deceptions don't stop with global warming.

[5] http://historyoftheuniverse.com/?p=iceage.htm. *Shaviv 2003*

Climate Change, Driver Shaviv, N. and Veizer, J. (2003) Celestial driver of Phanerozoic climate? *GSA Today* July 2003, 4-10. *GSA Today* is a publication of the Geological Society of America.

Message

From: Nolan, Robert M [robert.m.nolan@exxonmobil.com]
Sent: 6/20/2017 11:17:15 AM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: FYI Only - ExxonMobil Technology Announcement

Thought you may find this of interest:

- Algae strain developed and modified by Synthetic Genomics more than doubled oil production
- Additional research and testing required before commercial application
- Results published in peer-reviewed journal *Nature Biotechnology*

For more information, please find a link below to view ExxonMobil media Info.

http://news.exxonmobil.com/press-release/exxonmobil-and-synthetic-genomics-report-breakthrough-algae-biofuel-research

Regard, Robert

202-862-0203 (Office)
Personal Phone / Ex. 6 (Cell)

Message

From: Moore, James D [Jamie.D.Moore@tsocorp.com]
Sent: 6/19/2017 7:45:04 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Following up...

Hey Mandy. Thanks again for your time last Friday. Was touching base. Did you have any luck touching base with regional folks on the west coast? Thanks.

JDM

Message

From: Kathleen Sgamma [ksgamma@westernenergyalliance.org]
Sent: 6/21/2017 9:01:12 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Question on the Quad Oa Comments

Hi Mandy,

I have a question about the recently opened comment period for Quad Oa. Could you give me a call? Thank you.

Kathleen Sgamma
President
Western Energy Alliance
1775 Sherman St., Suite 2700
Denver, CO 80203
(303) 501-1059 direct
(303) 623-0987 main
ksgamma@westernenergyalliance.org
westernenergyalliance.org
@KathleenSgamma

****
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Message

From: Williams, Brendan [Brendan.Williams@pbfenergy.com]
Sent: 6/20/2017 2:22:48 AM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Re: Quick Question

Hey! No worries. Would 2:30pm or 4:30pm work? I have a 3:30pm on the Hill. Please let me know when you get a chance.

Thanks!
Brendan

Sent from my Verizon LG Smartphone

------ Original message------
From: Gunasekara, Mandy
Date: Mon, Jun 19, 2017 9:55 PM
To: Williams, Brendan;
Cc:
Subject:RE: Quick Question

Hey Brendan,
Sorry I missed this today. Would 3:30 pm work? If so please call 202-564-2314.
Best,
Mandy

From: Williams, Brendan [mailto:Brendan.Williams@pbfenergy.com]
Sent: Monday, June 19, 2017 11:01 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: Quick Question

Mandy-

I hope all is well. I was wondering if you had 10 minutes today to chat about some RFS data I put together relating to how things are looking for this year's compliance. Please let me know if there is a good time to give you a ring whenever you get a chance and thanks in advance for your consideration.

Regards,

Brendan Williams
Government Relations
PBF Energy
601 Pennsylvania Avenue, NW
Suite 900 South
Washington, DC 20004
O: (202) 434-8254
M: (703) 863-6825
brendan.williams@pbfenergy.com
www.pbfenergy.com

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Message

From: Randy Hughes [rhughes@indepmo.org]
Sent: 6/16/2017 7:02:56 PM
To: Sal Pagano Personal Email / Ex. 6
CC: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: EPA

If something with a group gets planned while you're in St. L. let me know. I don't get out that way often enough these days. Always good to catch up with the Brothers.

Mandy's email address is Gunasekara.Mandy@epa.gov

Good idea on both the Exec Summary and that list of References (still need to do that!). FYI: I emailed some items to her earlier today and don't want to be a pest, so I'll hold off for now. However, if you were inclined to send her your background and how you viewed the book (and the effort you put in to develop the Exec Summary), that couldn't hurt. I sent the email under the Subject: "Popular Deceptions, the Book."

Randy Hughes
Manager, Planning and Rates
Independence Power & Light
17221 E. 23rd St. S.
Independence, MO 64057
Office: (816) 325-7497
rhughes@indepmo.org

From: Sal Pagano Personal Email / Ex. 6
Sent: Friday, June 16, 2017 1:55 PM
To: Randy Hughes
Subject: RE: EPA

Yes – We expect to be in StL August 18 thru Sept 3.

Did you get Mandy's email address? Maybe the executive summary would be somewhat helpful to her for rapidly getting the essence of the book out to those in her email groups. Also, do you think that gathering the hard copies of the references in the book would enhance this process for you and them?? Just a couple of thoughts…….

From: Randy Hughes [mailto:rhughes@indepmo.org]
Sent: Friday, June 16, 2017 9:22 AM
To: Sal Pagano Personal Email / Ex. 6
Subject: RE: EPA

As you might guess, I was pretty pumped when I got the call. First ,because a call was far better than getting a letter. Second, because Mandy talked at length and seemed genuinely interested and motivated to continue the dialog.

Like you, I'm holding my breath on what may or may not come next.

Have a great weekend.

PS. Your coming to St. Louis in August, right?

Randy Hughes
Manager, Planning and Rates
Independence Power & Light
17221 E. 23rd St. S.
Independence, MO 64057
Office: (816) 325-7497
rhughes@indepmo.org

From: Sal Pagano Personal Email / Ex. 6
Sent: Friday, June 16, 2017 9:02 AM
To: Randy Hughes
Subject: RE: EPA

WOW!! That is awesome!! Patience and perseverance just might eventually win out. It might be early for congratulations so I'll hold off to avoid jinxing what you've done so far. I'm keeping my fingers crossed.

From: Randy Hughes [mailto:rhughes@indepmo.org]
Sent: Thursday, June 15, 2017 5:08 PM
To: sp Personal Email / Ex. 6 'randy-hughes@comcast.net' Personal Email / Ex. 6
Subject: EPA

Just got a call from Mandy Gunasekara, Senior Policy Advisor for Scott Pruitt. Administrator Pruitt got may letter & copies of the book. She indicated they were impressed by my approach and would be diving into the book soon.

They like the approach of addressing "all" the science in a way the public will believe it. They are working on plans and she indicated they would like to stay in contact during the process. Very encouraging!!

I hope for some positive interactions…stay tuned.

Randy Hughes
Manager, Planning and Rates
Independence Power & Light
17221 E. 23rd St. S.
Independence, MO 64057
Office: (816) 325-7497
rhughes@indepmo.org

Message

From: Plus Tower Hotel Bologna [comunicazione.hnh.it@qualitando.com]
Sent: 6/20/2017 6:28:44 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Your opinion about Tower Hotel Bologna

Tower HOTEL BOLOGNA

[italiano | english]

Your opinion about Tower Hotel Bologna 20/06/2017

Dear Guest,

by dedicating a few seconds to complete our quality questionnaire, you will allow us to stay constantly informed about our customers' wishes and expectations and to monitor and improve, day after day, the service we provide.

Your feedback is invaluable to us!

Please fill in the Questionnaire

Thank you for your time!

La Sua opinione sul Tower Hotel Bologna 20/06/2017

Gentile Ospite,

grazie per averci scelto! Le chiediamo di dedicarci qualche minuto del suo tempo per condividere con noi la sua esperienza presso il nostro Hotel. Ogni sua osservazione sarà valutata con la massima cura ed attenzione.

La Sua opinione, per noi, è preziosa!

Compili il Questionario

Grazie per il tempo dedicatoci!

Plus Tower Hotel Bologna

Terms | Privacy | Unsubscribe

Message

From: Tomassi, Chris (Appropriations) [Chris_Tomassi@appro.senate.gov]
Sent: 6/26/2017 6:22:59 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Alaska Letter
Attachments: Comments on EO 13777.pdf

Here's the letter I referenced.

From: Tomassi, Chris (Appropriations)
Sent: Monday, June 26, 2017 2:22 PM
To: 'gunasekara.mandy@epa.gov' <gunasekara.mandy@epa.gov>
Subject: Alaska Letter

Chris Tomassi
Professional Staff
Senate Appropriations Committee
Subcommittee on Interior, Environment, and Related Agencies
Chris_Tomassi@appro.senate.gov

Tanana Chiefs Conference

122 1ST Ave. Suite 600
Fairbanks, AK 99701
907-452-8251

Office of Policy Regulatory Reform
U.S. Environmental Protection Agency
Mail Code 1803A
1200 Pennsylvania Ave NW
Washington, DC 20460

RE: Comments from Tanana Chiefs Office of Policy Regulatory Reform
U.S. Environmental Protection Agency
Mail Code 1803A
1200 Pennsylvania Ave NW
Washington, DC 20460

RE: Comments from Tanana Chiefs Conference regarding Docket ID # EPA-HQ-OA-2017-0190, EPA's Regulatory Reform in accordance with Executive Order 13777, "Enforcing the Regulatory Reform Agenda."

On behalf of the Tanana Chiefs Conference, the inter-tribal organization for 37 federally recognized tribes (nearly 7% of all federally recognized tribes) across the Arctic and Subarctic regions of interior Alaska, I write to provide the U.S. Environmental Protection Agency (EPA) with comments regarding EPA's proposed regulatory reform in accordance with Executive Order 13777, "Enforcing the Regulatory Reform Agenda."

Interior Alaskan tribes have called some of the harshest climates on earth home for tens of thousands of years. Only in the last 50 years did our rural tribal communities begin to electrify homes, schools and businesses across rural Alaska. Temperatures in our tribal communities can reach -70 F during the winter and many communities have fuel for generators brought in only by DC-6 aircraft that were last produced during the Korean War. This creates a very tenuous supply chain to connect life in our villages with electricity and heat for water plants, clinics and schools.

In July of 2016, the EPA sought to provide clarity to the definition of Rural Alaska and relax requirements for Tier 4 generator sets in Rural Alaska. This provided some degree of regulatory relief for our villages, however under CFR **§ 60.4216** Alaska tribes are still required to install complex, highly unreliable Diesel Particulate Filters on newly installed Tier 3 marine engines. Tanana Chiefs Conference, on behalf of all 37 of our tribes is requesting this requirement be eliminated from EPA regulations so that Rural Alaskan tribes and communities who are already struggling to provide modern services year round in some of the harshest conditions on the planet, are not further burdened with a requirement for unreliable equipment.

Proof of the unreliability of Tier 4 generator sets and Diesel Particulate Filters (DPF) can be found in the fact that marine vessels were not required to install DPF units on their vessels because they could and do have a high failure rate and it was deemed an unacceptable risk to the security of the maritime industry to require these complicated and unreliable units. Unfortunately Rural Alaska was not at the table during these negotiations and our concerns were not addressed. When a DPF fails in Rural Alaska, the engine shuts down and the community has no power. The only way to "clear" a DPF is to bring in a factory trained technician with engine dealer specific software from urban center. This can be a delay of days, not hours. These communities can be without power at temperatures reaching -60 F for days. As a result of

Tanana Chiefs Conference

122 1ST Ave. Suite 600
Fairbanks, AK 99701
907-452-8251

this rule many Alaskan villages are hanging on longer to old generators that avoid the rule. These regulations in Rural Alaska are ineffective. Simply put, they impose costs that exceed benefits.

Specific Language, which needs to **be eliminated from CFR 60.4216 is here**:

> "the owner or operator of any such engine that was not certified as meeting Tier 4 PM standards, must meet the applicable requirements for PM in §§ 60.4201 and 60.4204 or install a PM emission control device that achieves PM emission reductions of 85percent, or 60 percent for engines with a displacement of greater than or equal to 30 liters per cylinder, compared to engine-out emissions."

Executive Order 13777 gives the EPA and the federal government the opportunity to rescind these burdensome requirements and strengthen the ability of Rural Alaska to fend for themselves.

The Tanana Chiefs Conference is pleased to provide EPA with the aforementioned comments regarding EPA's Regulatory Reform in accordance with Executive Order 13777, "Enforcing the Regulatory Reform Agenda." Thank you for your time and consideration. Please feel free to contact T.C.C. Rural Energy Coordinator Dave Messier with any comments or questions regarding regulatory relief for our tribes, dave.pm@tananachiefs.org and 907-452-8251 ext 3479.

Ana Basee' (Thank you),

Tanana Chiefs Conference

Victor Joseph
President and Chief

Message

From: John McKnight [jmcknight@nmma.org]
Sent: 6/21/2017 4:58:22 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: thanks for listening to us

Amanda:

Thank you for taking the time to meet with our recreational marine engine manufacturers yesterday. It was great to meet you and please let me know if you can help us on anything we discussed, especially that SNAP and IMO issue.

It was awesome to have the Administrator Pruitt stop by. That knocked it out of the park for me and our members. Any way I look forward to continuing our dialogue and hope our meeting was helpful for you too.

John McKnight
Senior Vice-President Government Affairs
National Marine Manufacturers Association
650 Massachusetts Ave Suite 520
Washington DC 20001
202-257-3754
jmcknight@nmma.org

Message

From: Williams, Brendan [Brendan.Williams@pbfenergy.com]
Sent: 6/20/2017 6:14:53 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: A few more D5 points

A few more relevant points on D5.

2016 Domestic generation was 63.6 so assuming some growth, the 74.6 number from my previous note is very reasonable.

2016 total including imports was 97 million. Based on this reality, nobody right now thinks we are going to get to the 969 requirement this year or some higher number next year, which is why D5 rins are at 1.10.

Let me know if you have any questions. Thanks!

Sent from my Verizon LG Smartphone

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Message

From: Courtney Trusty [info@amplitudesocial.com]
Sent: 6/20/2017 5:59:44 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Have Amplitude Social Manage Your Professional LinkedIn Account

Hello Amanda,

I'm Courtney, owner of Amplitude Social. I would like to gauge your interest in having us manage your professional LinkedIn account. If you're not aware LinkedIn has been considered the most widely used platform in the government work place for many years. In addition to managing your professional LinkedIn page, we can also develop company pages for your agency or program to share the work you do more widely

With your approval, and with the review/approval of any appropriate contacts, we would do the following:

- create a profile if you don't have one already,
- use it to make connections with relevant industry executives and thought leaders,
- develop and post content 7 days a week / 365 days per year, and
- engage with other government and industry influencers.

The benefit of establishing a presence on LinkedIn is the opportunity for you and your program/agency to be viewed as industry thought leaders. Through your profiles, we will be able to reach a wide range of industry decision makers. LinkedIn reaches more professionals than any other social media network. In fact many of our clients have received speaking engagements, opportunities to collaborate on high profile partnerships, media coverage and more...all because of their robust LinkedIn profile.

The cost is $60 per month or $720 annually.

If this is something you're interested in, please don't hesitate to contact us. We're available to meet with you as well to go over the details before moving forward.

Thanks!

Courtney Trusty
Owner
Amplitude Social
info@amplitudesocial.com

410-929-3824

Message

From: Ward, Erin H. [erin.ward@hoganlovells.com]
Sent: 6/26/2017 6:03:53 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Savage, Justin A. [justin.savage@hoganlovells.com]
Subject: Materials from OTAQ Meeting
Attachments: Questions from OTAQ.docx; Follow-Up Questions from June 19 Meeting with EPA.docx

Mandy,

Please find attached the materials related to our meeting with OTAQ. The Questions from OTAQ document includes questions received from OTAQ prior to the meeting. The Follow-Up Questions were homework for the company.

Best,
Erin

Erin Ward
Associate

Hogan Lovells US LLP
Columbia Square
555 Thirteenth Street, NW
Washington, DC 20004

Tel: +1 202 637 5600
Direct: +1 202 637 5756
Fax: +1 202 637 5910
Email: erin.ward@hoganlovells.com
www.hoganlovells.com

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Follow-up Questions
OTAQ Meeting
June 19, 2017

1. Who breaks bulk?
    a. Tracking company's customers to end point – who are they? Where did they buy?
    b. Focus on trucking, barges, railroad, small parties, and other parties that own product immediately before it is sold over the rack
2. Fuel prices vs. cost of RINs
    a. OPIS and Platts daily prices back to 2012
    b. Company sales prices
    c. Additional data and analysis regarding pass-through of RIN costs
3. How are long-term contracts priced?
    a. How is it priced?
    b. Does it include RINs?
    c. What is the term of the contracts?
4. Who is a "blender" under the statute?
    a. From a legal perspective, what is EPA's discretionary authority to classify a party as a blender?
    b. Can EPA designate someone as a blender who does not already blend?
5. How to handle small parties not captured by the big categories that sell over the rack?
    a. As a policy matter, should any parties be exempted?
    b. If exempt, how will the number and volume of these parties change?
    c. How to prevent abuse of exemption?
    d. If not exempt, how does EPA identify them and what is the compliance impact?
6. How does EPA address year-to-year variability in obligated parties?
7. How many parties would be obligated under alternate points of obligation?
8. Support for anecdotes about speculation and market manipulation
9. Pros and cons of quarterly or monthly RINs reporting of volumes
10. Pros and cons of limiting number of RIN trades (like benzene and sulfur credits)
11. Pros and cons of government-imposed RIN price cap
12. Written answers to prior questions from EPA on June 16

Questions from EPA OTAQ Regarding Changing Point of Obligation

1) The Association of American Railroads (AAR) and the American Trucking Association (ATA) both commented in opposition to moving the point of obligation arguing that their members (railroads and trucking fleets) were position holders but not fuel blenders. Do you believe it would be problematic if railroads and trucking fleets were to become obligated parties by virtue of being position holders? Does the answer change if there are a small number of entities brought into the program (e.g., 5 to 10) or a large number (e.g., several hundred)?

2) If it turns out that some end users are position holders (like trucking fleets), would it be acceptable if a new Point of Obligation regulation exempted end-users from the program? For example, if EPA exempted position holders that do not sell the fuel to another party but instead consume the fuel in their own businesses?

3) Do you consider it possible or even likely that the number of position holders or types of entities that choose to be position holders will change if position holders become obligated under the RFS program? If you do expect a change, can you describe the change you anticipate? If you do not expect a change, could you explain why not?

4) Would you suggest that EPA exempt position holders that do not blend fuel at or below the rack from an RFS obligation? If so, do you believe it would be likely that such exemptions would lead to a change in the number or types of entities engaged in such blending, and would you view such changes as acceptable/desirable?

5) Would you agree that EPA's authority to set a renewable volume obligation is constrained by *42 USC 7545 (o)(3)(B)(ii) Required elements The renewable fuel obligation determined for a calendar year under clause (i) shall -- (I) be applicable to refineries, blenders, and importers, as appropriate*? Do you believe that EPA can conclude that trucking fleets that do not blend fuel, and consume the fuel that they own above the rack, are "blenders" by virtue of their being position holders? If so, on what basis? Would the answer be different for fuel marketers (e.g., marinas) that do not blend fuels?

6) The IRS requires that terminal operators report the volumes of fuel held by position holders to validate the position holders own reporting to the IRS. Do you believe it would be necessary and appropriate for EPA to create a similar scheme to ensure position holders are reporting their obligation to EPA accurately?

Message

From: Williams, Brendan [Brendan.Williams@pbfenergy.com]
Sent: 6/20/2017 5:15:03 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: D5 Info
Attachments: 20170616 D5 RIN Estimates.xlsx

Importance: High

Mandy-

As mentioned, see the attached spreadsheet. Here's a breakdown of the tabs:

- **Average:** This tab takes the average non-BBD D5 RIN generation to date and used that number for every other month for the rest of the year. **This method yields 86.445 million RINs in total.**
- **Trend:** This method just extends the trend line based on increases in production per month to date. **It yields 157.516 million gallons.**
- **Domestic Production Average:** This subtracts foreign D5 ethanol consumed to date (8.455 million gallons) from the total to date, then averages it and uses that "average-minus-foreign" number for every month the rest of the year. **This yields only 74.608 million gallons.**
    - This is actually reasonable to assume, since there are currently no Brazilian ethanol cargoes scheduled for delivery.

In summary, we are only looking at between 74.6 and 157.5 million gallons of non-BBD D5 RIN generation for the year. A LONG way from the 1.28 billion needed above and beyond the BBD mandate.

<u>What about Biodiesel?</u>

See the last sentence paragraph of the OPIS article below. It highlights that EIA says the domestic biodiesel industry is only on track to produce 1.59 billion gallons of biodiesel this year (104,000 b/d X 42 gallons per barrel X 365 days). The mandate is 2.1 billion, so we will be dependent on over 500 million gallons of foreign biodiesel just to meet this year's mandate.

Additionally, the STEO indicates gasoline demand this year will be about 144 billion gallons, meaning the 10 percent blendwall is 14.4 billion gallons, 600 million short of the 15 billion gallons required for this year. The industry will likely need to compensate for this gap through 400 million gallons of biodiesel (which gets 1.5 RINs per gallon).

This means that even in the complete absence of a D5 advanced mandate category, given both the biodiesel mandate of 2.1 billion gallons and the need to compensate for the blendwall by using biodiesel, there is almost a guarantee that we will consume 2.5 billion gallons of biomass based diesel (2.1 billion BBD requirement plus the extra 400 million to compensate for the blendwall), which is nearly one billion gallons more than the domestic biodiesel is positioned to produce.

In other words, given the meager amount of non-BBD D5 RIN generation, the extra 1.28 billion gallons of advanced biofuel required for this year, above and beyond the 2.1 billion BBD mandate and the cellulosic production, is essentially just a foreign biodiesel mandate.

Not having a D5 requirement that appreciably exceeds the BBD mandate plus whatever cellulosic is would at least send a less bullish signal to the market, potentially lessening refining costs somewhat without sacrificing one drop of domestic BBD.

Let me know if you have any questions.

Here's the OPIS article referenced above:

2017-06-06 01:02:59 EDT
***EIA Raises Forecast for 2017, 2018 Ethanol Consumption in June STEO

The U.S. Energy Information Administration (EIA) in its June Short-Term Energy Outlook (STEO) released Tuesday raised its 2017 domestic ethanol consumption projection to about 942,000 b/d from the 941,000 b/d it had forecast in its May report.

The agency estimated 2016 ethanol consumption averaged about 937,000 b/d.

In the June report, EIA also raised its forecast for 2018 U.S. ethanol consumption to 943,000 b/d from the 942,000 b/d it projected in May.

EIA said it expects ethanol production in 2017 to average about 1.03 million b/d, unchanged from its May STEO projection. For 2018, EIA projected that ethanol production will average about 1.02 million b/d, unchanged from the previous month's report. EIA said ethanol production in 2016 averaged 1 million b/d.

Ethanol blended into gasoline for 2016 came in at 944,000 b/d, a level the agency is maintaining for 2017 and 2018. That number is unchanged from what EIA projected in its April and May STEO.

Motor gasoline consumption is forecast by EIA to average 9.34 million b/d in 2017 and 9.37 million b/d in 2018, an increase from the 9.33 million b/d and 9.36 million b/d, respectively, it said in the May STEO report. The agency said 9.33 million b/d was consumed in 2016.

The agency raised its forecast of estimated consumption of biomass-based diesel to 153,000 b/d for 2017, from 149,000 b/d in May, and 165,000 b/d for 2018, from its projection of 160,000 b/d last month, but maintained its estimate of 2016 consumption at 148,000 b/d.

The agency, which said U.S. biodiesel production averaged 101,000 b/d in 2016, increased its 2017 projection to an average of 104,000 b/d (from 100,000 b/d in May) and its 2018 forecast to 109,000 b/d (from 104,000 b/d in the prior month's report).

--Molly White, mwhite@opisnet.com

Brendan Williams
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January	5,692,281		
February	5,384,870	Average	7,203,820
March	4,588,049		
April	7,016,783		
May	13,337,119		
June	7,203,820		
July	7,203,820		
August	7,203,820		
September	7,203,820		
October	7,203,820		
November	7,203,820		
December	7,203,820		
	86,445,845		

January	5,692,281
February	5,384,870
March	4,588,049
April	7,016,783
May	13,337,119
June	12,280,297
July	13,972,456
August	15,664,615
September	17,356,774
October	19,048,933
November	20,741,092
December	22,433,251
	157,516,519

January	5,692,281
February	5,384,870
March	4,588,049
April	7,016,783
May	13,337,119
June	5,512,751
July	5,512,751
August	5,512,751
September	5,512,751
October	5,512,751
November	5,512,751
December	5,512,751
	74,608,360

Avg. Minus Foreign 5,512,751

Message

From: Matt Ogren [MOgren@insightwebpoll.com]
Sent: 6/23/2017 12:38:54 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Still time to participate

Hello Amanda Gunasekara,

There is still time to share your perspectives in APCO's 4th annual TradeMarks Study examining perceptions of trade association public policy effectiveness.

In 2016, more than 300 people shared their insights, including 150 people who work in Congress or the executive branch.

Please click on the link below to be taken to this 15-minute survey:

START NOW

Alternatively, you can copy and paste the following URL into your internet browser:
http://www.insightwebpoll.com/association2017&p=E4754

By completing the survey, **you will receive an advance copy of the study's executive summary** when the study is finished. Additionally, you will help to determine where $5,000 in charitable contributions to charities will be going.

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

Thank you in advance for your participation.

Matt Ogren
Study Director

5086 List Drive, Colorado Springs, CO 80919
Unsubscribe

Message

From: Lynn L. Bergeson [lbergeson@lawbc.com]
Sent: 6/19/2017 6:12:08 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Urgent Matter

Hi Mandy,

I am generally around M-W this week.

LYNN L. BERGESON
MANAGING PARTNER
BERGESON & CAMPBELL PC
2200 Pennsylvania Avenue, N.W. Suite 100W | Washington, D.C. 20037
T: 202-557-3801 | F: 202-557-3836 | M: 202-257-2872 | lawbc.com

---

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Friday, June 16, 2017 9:24 AM
To: Lynn L. Bergeson
Subject: RE: Urgent Matter

Hi Lynn,

Is this a TSCA related matter?

From: Lynn L. Bergeson [mailto:lbergeson@lawbc.com]
Sent: Friday, June 16, 2017 9:13 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: RE: Urgent Matter

Hi Mandy,

Traveling today so 202.257-2872.

LYNN L. BERGESON
MANAGING PARTNER
BERGESON & CAMPBELL PC
2200 Pennsylvania Avenue, N.W. Suite 100W | Washington, D.C. 20037
T: 202-557-3801 | F: 202-557-3836 | M: 202-257-2872 | lawbc.com

---

From: Lynn L. Bergeson
Sent: Thursday, June 15, 2017 9:46 AM
To: Gunasekara.Mandy@epa.gov
Subject: Urgent Matter

Hi Mandy,

I met you when NACD visited with Administrator Pruitt a few weeks ago. We work with Jennifer, Lucinda, and Eric on a variety of topics, including TSCA. Would you have any time, at any time, for a short call?

LYNN L. BERGESON
MANAGING PARTNER
BERGESON & CAMPBELL PC
2200 Pennsylvania Avenue, N.W. Suite 100W | Washington, D.C. 20037
T: 202-557-3801 | F: 202-557-3836 | M: 202-257-2872 | lawbc.com

Message

From: Messner, Kevin [KMessner@AHAM.org]
Sent: 6/20/2017 4:35:36 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]; Dravis, Samantha [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ece53f0610054e669d9dffe0b3a842df-Dravis, Sam]
CC: Cleary, Jennifer [jcleary@AHAM.org]
Subject: Hearing Questions

I wanted to let you both know we are working to try to get the following questions asked to Administrator Pruitt during his Senate appropriations hearing next week. You also may see a question or a similar one in the QFR's from the House Interior/Environment Subcommittee. I wanted to be sure you had a heads up in case it (or a version of it) is asked so the Administrator can be prepared.

Question: ENERGY STAR
The FY18 Budget Request proposes to eliminate the ENERGY STAR program from EPA's budget and states these types of programs can be administered by the private sector. Privatizing the program would increase the cost and scope of the program and reduce its credibility to the public. For example, multiple organizations could manage the brand for differing products and have differing objectives. These private organizations also would not be cost conscious because there would be no competition. They could force manufacturers to pay high fees and require burdensome and expensive testing. For home appliances, ENERGY STAR is effectively mandatory in the marketplace. Instead of privatizing the program, we should reform it, right size it and make it more efficient. The first way you can do this is to move home appliances, which are regulated by DOE for the minimum energy standards, back to DOE for the ENERGY STAR program. DOE has historically managed most of the ENERGY STAR program for home appliances because this agency has the expertise and knowledge of the products. However, in 2009 the ENERGY STAR program for home appliances were transferred from DOE to EPA to be managed, while DOE continued to manage the test procedures.

Will you work with the committee on this matter and commit to moving the entire ENERGY STAR program home appliances to DOE immediately?

Question: Refrigerator Refrigerant Charge Size
On December 20, 2011, EPA's Significant New Alternatives Policy (SNAP) program allowed the use of Isobutane (R-600a) in household refrigerators (Fed. Reg. 78832). The final rule included a use condition that limits the refrigerant charge to 57 grams (2.0 ounces) or less for each sealed refrigeration system (i.e., compressor, condenser, evaporator, and refrigerant piping). The charge size is the amount of refrigerant that is allowed in each sealed refrigerant system within a refrigerator. The SNAP rule based the charge size amount on the Underwriters Laboratories (UL) safety standard (UL-250) for household refrigeration end-use, which limited the quantity of the refrigerant (*i.e.,* "charge size") in a refrigerator or freezer to 57 grams. In EPA's final rule, the agency stated that they do not have sufficient information to support a charge size limit different from one based on UL 250, such as the 150-gram limit in IEC 60335–2–24. The final rule stated EPA understands that the limit in UL 250 may change in the future. If that occurs, and if the appropriate safety testing data is submitted to EPA supporting safe use of a larger charge, EPA stated it would consider modifying the use conditions.

Based on testing and lengthy analysis, on April 28, 2017, the maximum charge size allowance in the UL standard was changed and increased from 57 grams to 150 grams. During the approval process of this update, the Consumer Product Safety Commission (CPSC) staff stated that they do not oppose the proposal to increase the maximum flammable refrigerant charge size in household refrigerators to 150 grams from 57 grams. They stated that standards in Latin America, Europe, and other countries allow household refrigerators to use up to 150 grams of flammable refrigerant.

It is my understanding that EPA has sent the rule to OMB to update the SNAP use condition to increase the allowable charge size to match the most recent safety standard, which is 150 grams. I am appreciative of your quick action on this important matter; however, we need to make sure it gets out of OMB quickly. I wanted to be sure that you were aware of the importance of this matter to expedite this technical change. Appliance manufacturers need certainty in this area to start planning and designing their products to meet the EPA required date of 2021 when HFCs are banned for use in refrigerators. Can you please continue to make sure this is a high priority action for OMB to complete?

Kevin Messner
Senior Vice President, Policy & Government Relations
Association of Home Appliance Manufacturers
1512 Willow Lane, Davis, CA 95616
1111 19th Street NW, Suite 402, Washington, DC 20036
t 202.872.5955 ext. 353 *m* 530.309.5629 *f* 202.872.9354 *e* kmessner@aham.org

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ASSOCIATION OF HOME APPLIANCE MANUFACTURERS

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Message

From: Andrew Wright [andy.wright@wrightstrategies.us]
Sent: 6/16/2017 6:39:37 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Re: Olin Corporation Superfund White Paper

Dear Mandy,

That is wonderful. Thank you very much. Olin has a very experienced Superfund team from engineers to lawyers who would be more than happy to work with your folks. Please let me know how we might be of help.

And thank you again for your responsiveness. It is extremely nice to have you at EPA!

Andy

Sent from my iPhone

On Jun 16, 2017, at 1:38 PM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

Hi Andy,

Thank you for the note and I apologize for the delay in response to your voicemail. We have an entire team working on the superfund issue. If it's okay with you, I will forward along your below note, the White Paper and your contact information so that you can connect directly with them.

Please let me know if I can do anything else.
Best,
Mandy

From: Andy Wright **Personal Email / Ex. 6**
Sent: Friday, June 16, 2017 10:29 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: Olin Corporation Superfund White Paper

Dear Mandy,

You and I met while you were with the Committee on Environment and Public Works, and again on May 2 of this year when you addressed the Industrial Energy Consumers of America (IECA) meeting in Arlington. You were kind enough to give me your direct line. I left you a message recently, but I am sure you are inundated with calls.

I am reaching out because my company, Olin Corporation, has prepared a White Paper in response to Administrator Pruitt's recent memo regarding Superfund. Olin has considerable experience cleaning up legacy site. I am confident that the suggestions included in the paper have merit and could be useful as EPA prepares to reform and improve the program. I have attached a copy of the White Paper below.

I am hopeful that you can advise me as to how I can most effectively deliver these thought to the appropriate person at EPA. I would sincerely appreciate your help. Please feel free to call me at (202) 360-9209.

Andy

Andrew Wright
Acting Director, Government Affairs
Olin Corporation
andy.wright@WrightStrategies.us
(202) 360-9209

Message

From: Walker, Ryan [RYAN.WALKER@bp.com]
Sent: 6/23/2017 5:53:29 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Quick Call

Mandy:

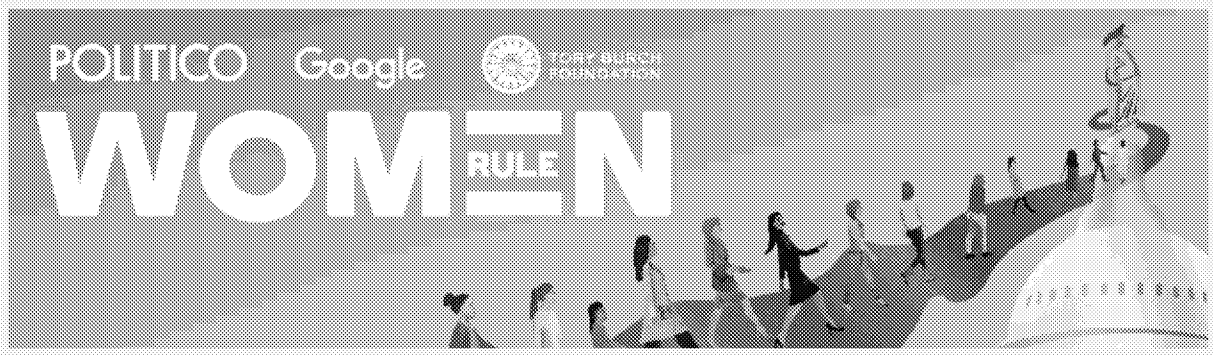
Do you have 5 minutes for a quick phone call?

Ryan

Ryan P. Walker
Senior Director, Federal Gov't Affairs
BP America, Inc.
Sent from my iPhone

Message

From: Women Rule [networkingwework@eventmail.eventfarm.com]
Sent: 6/16/2017 6:31:59 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Registration Confirmation | Women Rule Investigation Launch



Thank you for registering for the Women Rule Investigation Launch. Full details below:

When: Tuesday, June 20 6:00 to 8:00 PM
Where: WeWork - White House Offices - 1440 G Street NW

Women Rule is produced by POLITICO in partnership with Google and the Tory Burch Foundation

Should you have any questions, please direct them to WomenRule@politico.com

Join the conversation using #WomenRule

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This email was sent to gunasekara.mandy@epa.gov

Unsubscribe

Message

From: Women Rule [womenrule@politico.com]
Sent: 6/16/2017 6:21:06 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RSVP Today | A Special Women Rule Investigation Launch

Dear Mandy,

By now you should have received the below invitation to our upcoming Women Rule event on June 20th. Please note space is limited, confirm your spot today: RSVP.

To explore our inaugural Women Rule investigation please click here.

Best,

Women Rule

Dear Mandy,

On behalf of POLITICO, Google and the Tory Burch Foundation, we invite you to join us on June 20th for a special event and conversation marking the launch of a major POLITICO investigation exploring women's political leadership. Please find the official invitation below.

We do hope you can join us on the 20th. Kindly RSVP to the event here.

Best,

Women Rule

Women Rule is produced by POLITICO in partnership with Google and the Tory Burch Foundation. To learn more about Women Rule, please visit www.politico.com/WomenRule.

POLITICO Google TORY BURCH FOUNDATION

invite you to join

WOMEN RULE

for a special event and conversation marking the launch of a major POLITICO investigation exploring women's political leadership

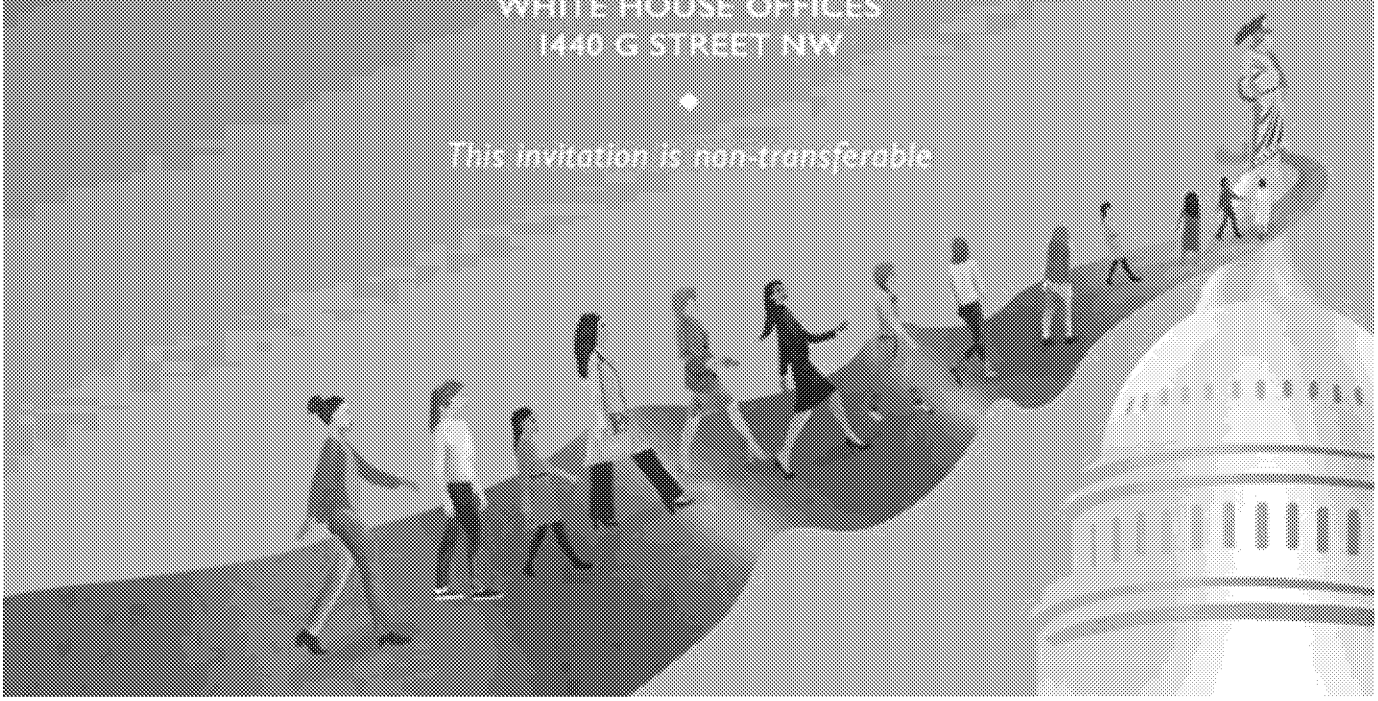
Networking, wine and hors d'oeuvres to follow

TUESDAY, JUNE 20 | 6:00 - 8:00 PM

wework

WHITE HOUSE OFFICES
1440 G STREET NW

This invitation is non-transferable



Message

From: Women Rule [womenrule@politico.com]
Sent: 6/20/2017 3:25:18 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: See You Tonight | A Special Women Rule Investigation Launch

Hi Mandy,

We look forward to seeing you tonight at 6:00 PM for our Women Rule Investigation Launch at the White House WeWork offices – 1440 G Street NW. If you have any questions, please contact WomenRule@politico.com.

Best,

Women Rule

Women Rule is produced by POLITICO in partnership with Google and the Tory Burch Foundation. To learn more about Women Rule, please visit www.politico.com/WomenRule.

POLITICO Google TORY BURCH FOUNDATION

invite you to join

WOMEN RULE

for a special event and conversation marking the launch of a major POLITICO investigation exploring women's political leadership

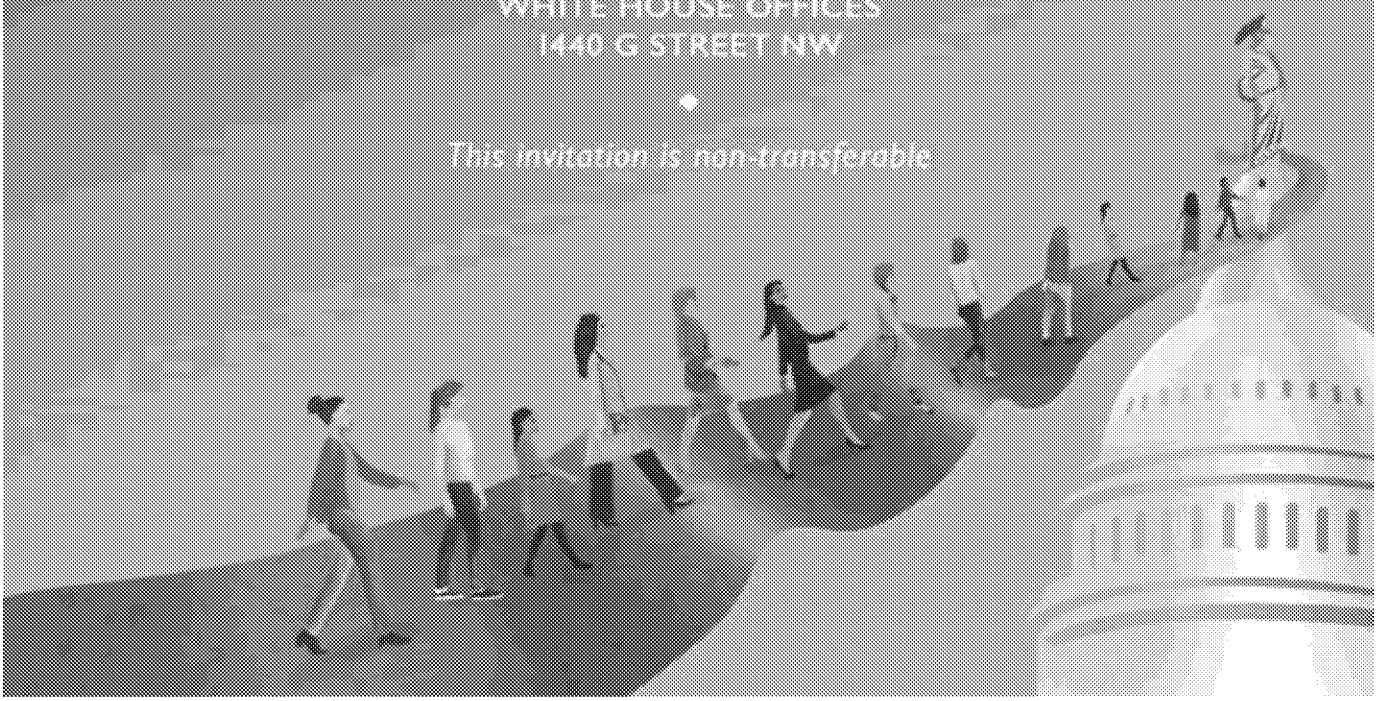
Networking, wine and hors d'oeuvres to follow

TUESDAY, JUNE 20 | 6:00 - 8:00 PM

wework

WHITE HOUSE OFFICES
1440 G STREET NW

This invitation is non-transferable



Message

From: Braniff, Mimi P [mimi.braniff@delta.com]
Sent: 6/22/2017 5:40:56 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RFS point of obligation language

Hi Mandy. I know you guys are taking another look at the 2018 proposed rule. As we discussed, we know the point of obligation rulemaking is not a part of the proposed rule. However, we would love to see language (such as the below language) that indicates EPA continues to look at the issue. We believe this would help keep RIN prices from skyrocketing. Thanks for your consideration. Happy to answer any questions you or team members may have. Best, Mimi

"EPA continues to evaluate the comments submitted on the point of obligation. We will consider all information in the docket as we determine whether to grant the petitions to initiate the rulemaking process on this important issue."

Mimi Braniff | DELTA | Managing Director--Government Affairs
P: 202.243.3580 | 1212 New York Ave NW Ste 200 Washington, DC 20005

Message

From: Riddle, Ken [Ken.Riddle@lakelandelectric.com]
Sent: 6/22/2017 5:25:21 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Board of Scientific Counselors

Mandy,

An associate nominated me for the board. Wish me luck. I have no clue how a decision is made.

Ken Riddle
Supervisor of Chemical Processes
Lakeland Electric
3030 East Lake Parker Drive
Lakeland, FL 33805
(863)-834-5639 Office
(863)-660-3626 Mobile

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Message

From: Williams, Brendan [Brendan.Williams@pbfenergy.com]
Sent: 6/20/2017 3:17:22 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: 10 mins

No worries. Thanks!

Best # is my cell: **Personal Phone / Ex. 6**

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Tuesday, June 20, 2017 11:17 AM
To: Williams, Brendan
Subject: 10 mins

Hey Brendan,
I'm running a bit late and will call in 10 mins. 11:25

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Message

From: Stephen Aaron [saaron@mercuryllc.com]
Sent: 6/21/2017 3:52:04 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Follow Up

Mandy,

Just wanted to follow up with you, Cabot received their letter and we are very appreciative of yalls efforts and attention.

I did want to check in with you and see if there was any clarity on when relief may be granted and for how long. Also if y'all have any idea what standards were going to be for others coming into compliance.

Hope you're well and talk soon.

Stephen

Mercury.

Stephen Aaron
Senior Vice President
300 Tingey Street SE | Suite 202
Washington, DC | 20003
www.mercuryllc.com

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Message

From: Smith, Robert L. [RLSmithII@Venable.com]
Sent: 6/21/2017 3:34:57 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Two Things

Thanks for getting back to me. It's my understanding that EPA is providing waivers to the Puerto Rico Electric Power Authority (PREPA) because they don't have the capital to make upgrades to bring themselves in line with emissions standards. Does that sound familiar? Thanks again.

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Tuesday, June 20, 2017 6:38 PM
To: Smith, Robert L. <RLSmithII@Venable.com>
Subject: RE: Two Things

Hey Rob,

There are a couple folks working on Puerto Rico. It depends on the issue. For example, they have some significant water quality problems and our water expert is spearheading those efforts. Ultimately, we must work with Region 2 (New York) as they have jurisdiction over the PR issues, but I'm happy to first connect you with the most relevant political to get things started.

What is the specific issue?

Best,
Mandy

From: Smith, Robert L. [mailto:RLSmithII@Venable.com]
Sent: Monday, June 19, 2017 12:28 PM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: Two Things

1. I spoke with your brother's company (David) and will follow-up with them once we're in OXMS.

2. Lots of issues going on with Puerto Rico right now and I believe EPA is involved with some of them. Do you have a colleague who has been designated to work on the Island's issues? Or is that a Region matter?

Thanks!

Rob Smith | Venable LLP
t 202.344.4077 | f 202.344.8300 | m 202.258.5486
600 Massachusetts Ave, NW, Washington , DC 20001

rlsmith@venable.com | www.Venable.com

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transmission and delete the message without copying or disclosing it.
****

****
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****

Message

From: Moore, James D [Jamie.D.Moore@tsocorp.com]
Sent: 6/20/2017 3:06:52 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: permit question

Ok. I understand Matt Lakin may sign in Elizabeth's absence.

Is there anything else we can do on our end to ensure we don't encounter any further delay?

Thanks.

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Tuesday, June 20, 2017 10:41 AM
To: Moore, James D
Subject: Re: permit question

Yes- I sent an email. I got bounce backs that both are out of town. I'll call a few folks later

Sent from my iPhone

On Jun 20, 2017, at 10:11 AM, Moore, James D <Jamie.D.Moore@tsocorp.com> wrote:

> Hey Mandy. Good morning. Following up again. Was just curious if you had any luck connecting with region 9 folks? Thanks.
>
> Jamie
>
> ---
>
> **From:** Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
> **Sent:** Wednesday, June 07, 2017 6:31 PM
> **To:** Moore, James D
> **Cc:** Dominguez, Alexander
> **Subject:** Re: permit question
>
> James,
> I'd be happy to chat but am in Italy until Tuesday. Would it work to touch base some time next week?
> I've CC'd Alex who can help arrange a good time.
> Best,
> Mandy
>
> Sent from my iPhone
>
> On Jun 7, 2017, at 8:39 PM, Moore, James D <Jamie.D.Moore@tsocorp.com> wrote:
>
>> Hi Mandy. Hope all is well your way. Would you have a couple mins to chat? Had a permit question and wanted to get some direction and guidance from you. Thanks in advance.
>>
>> Jamie D. Moore
>> Director Federal Government Affairs

Tesoro Companies, Inc.
601 Pennsylvania Avenue N.W.
Suite 850
Washington, D.C. 20004
(202) 803 5960 office
(202) 821 6900 cell

COOPERATIVE FEDERALISM 2.0:

Achieving and *Maintaining* a Clean Environment and *Protecting* Public Health

JUNE 2017

ECOS

Introduction

The Environmental Council of the States (ECOS) is the national nonprofit, nonpartisan association of state and territorial environmental agency leaders. Its purpose is to improve the capability of state environmental agencies and their leaders to protect and improve human health and the environment of our nation.

The following document was produced through a consensus-based process among the members of ECOS. It is respectfully shared by ECOS with all who desire to participate in a conversation related to these matters. Please feel free to direct questions or comments to ECOS Executive Director and General Counsel Alexandra Dunn at adunn@ecos.org or 202.266.4929, or to any of the undersigned officers.

JOHN LINC STINE

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ECOS

COOPERATIVE FEDERALISM 2.0:

Achieving and *Maintaining* a Clean Environment and *Protecting* Public Health

A national conversation is underway as to the best and highest purpose for state and federal environmental regulators from 2017 forward. We are convinced a recalibration of state and federal roles can lead to more effective environmental management at lower cost — that this is a call for a Cooperative Federalism 2.0. The purpose of this paper is to stimulate and advance this important national conversation. We have an opportunity to engage the Administration, Congress, and all other parties and interests in how states and the U.S. Environmental Protection Agency (U.S. EPA) can put the "meat on the bone" and more fully define what we mean by Cooperative Federalism 2.0 from a policy, operational, and fiscal standpoint that ensures effective public health and environmental protections. We believe that through this concept we can build on the foundations of national statutes, learn from the innovations and successes of state programs, and confidently meet the challenge of providing 21st century environmental protection with the best of 21st century methods and relationships.

As states evaluate the future of environmental protection, we believe each of the key roles and functions laid out in this document is crucial for high quality, nimble, reliable, and transparent environmental and public health protection across the nation. We look forward to engaging others on how they see this important relationship.

Background

When the foundation of environmental protection was established in the United States in the late 1960s and early 1970s, a key, constitutionally based tenet was cooperative federalism. Under this tenet, the U.S. Congress establishes the law, the federal government implements the law through national minimum standards for the media/pollutant in question, and states can seek authorization or delegation to implement the programs needed to achieve these standards. Generally, states may develop programs to go beyond these standards if a state chooses to do so.

Initially, when states first began to implement programs delegated to them in the 1970s and 1980s, many state programs benefitted not only from federal funding, but also from significant U.S. EPA oversight. Over the last 45 years, states have become the primary implementers of these environmental statutes, such that today, states have assumed more than 96 percent of the delegable authorities under federal law. These state programs have now matured, and states have undertaken many continuous improvement efforts to address new environmental challenges and to modernize and streamline decision-making processes. Indeed, from the first fledgling state programs to those we implement today, we have always sought out ways to be better and inspire public confidence in our efforts. States are a critical part of achieving our nation's environmental and public health goals and mandated responsibilities in an effective and efficient way.

Document Structure

This document contains two parts. Part I enumerates, as principles, the roles and functions of states and U.S. EPA in cooperative federalism. The state and U.S. EPA principles we lay out here must be taken together; the principles reflect corollary responsibilities. These principles, which are laid out in the following table, are derived from a deep reflection on the current tenor and functioning of state/EPA relationships. Part II then documents 2.0 an initial list of important policy-neutral issues where the application of Cooperative Federalism could be focused.

Part I: Principles of the Roles and Functions of States and U.S. EPA in Cooperative Federalism

	Principles of the States' Role and Function in Cooperative Federalism	Principles of the Federal Role and Function in Cooperative Federalism
1	States should be engaged, as key partners with the federal government, in the development of national minimum standards to protect human health and the environment, and in any federal requirements regarding implementation of those standards. States bring experience in identifying and understanding evolving science and emerging environmental challenges, and in developing effective programmatic options and alternatives. In particular, states have first-hand knowledge of how to ensure successful implementation of programs designed to meet these standards including experience communicating with the regulated community and the public.	U.S. EPA should continue to lead in setting and adopting national minimum standards to protect public health and the environment.
2	States are the preferred implementing entities for national environmental regulatory programs for which federal statutes authorize their delegation. Only where states elect not to pursue delegated federal authority, do not provide the resources necessary to meet national regulatory minimum standards, or have a documented history of failure to make progress toward meeting national standards, should U.S. EPA implement these environmental programs.	U.S. EPA should be the lead implementer of national environmental regulatory programs in those instances where states decline to assume this role, where the states fail to appropriately implement such programs, or where federal statutes establish that role for the federal government.
3	States should have flexibility to determine the best way for their programs to achieve national minimum standards that enables them to incorporate and integrate their unique geophysical, ecological, social, and economic conditions.	U.S. EPA should involve states as partners early and often in developing federal environmental and public health policy, and should specifically seek state and other stakeholder input on the efficacy of new or changed standards or program requirements.
4	States should engage local governments, regulated entities, tribes, and the public, as well as recognize community and equity concerns, in implementation of national environmental regulatory programs, policies, and standards.	U.S. EPA should ensure appropriate federal consultation with Native American tribes in the implementation of federal environmental and public health policies, programs, and standards.
5	States should be the primary enforcement authority for programs delegated to the states and have the ability access federal enforcement authorities when federal enforcement is needed or appropriate.	U.S. EPA should respect the states' role as the primary implementer of national environmental regulatory programs and not review individual state implementation decisions, including enforcement, on a routine or recurring basis unless programmatic audits identify this need or particular circumstances compel federal action.

	Principles of the States' Role and Function in Cooperative Federalism	Principles of the Federal Role and Function in Cooperative Federalism
6	States should gather, maintain, and share information transparently with U.S. EPA and the public on how human health and the environment are protected, based on nationally agreed upon measures and metrics, through the activities states conduct and the environmental outcomes states achieve for federally delegated programs.	U.S. EPA should periodically and routinely audit state implementation programs authorized or delegated to achieve national minimum standards (including adequacy of state implementing authorities and resources). These audits should be based on criteria mutually developed by states and U.S. EPA in light of federal regulations and grant requirements. When a state is not adequately achieving standards, U.S. EPA should be able to take appropriate action to ensure that a state will make consistent progress. Ultimately, if a state is not making sufficient progress, U.S. EPA should be able to reassume a lead implementation role.
7	Consistent with Constitutional principles, states should be encouraged through flexible federal requirements to develop, pursue, and implement state innovations to effectively and efficiently achieve desired environmental outcomes. States should generally have the ability to set standards that are more stringent or that are broader in scope than federal standards.	U.S. EPA has a role as a convener and facilitator in important pollutant-related interstate issues to efficiently support multi-state solutions and in some cases, to ensure final decision-making. States' willingness to work on these types of issues collectively and collaboratively with each other is also critical for success. Regional collaborations of national significance often require additional assistance (i.e., technical or scientific support, funding, regulatory accountability, and dispute resolution) that U.S. EPA should have the capacity to provide.
8	States should work cooperatively with U.S. EPA in the development of shared services, implementation toolkits, and other key resources to facilitate permitting and reporting functions and to efficiently use resources to accomplish these tasks as well as shared functions.	U.S. EPA should maintain a robust scientific research and data gathering capacity to effectively inform and establish national regulatory minimum standards based on sound science, to understand how best to respond to complex environmental pollution challenges, to respond to emerging pollutants, to incorporate modern technologies, and to efficiently determine protective alternative remediation strategies and other solutions to facilitate protection of human health and the environment. The federal government has well-developed capacity to keep abreast of emerging challenges and to research potentially successful technologies or remedies for current challenges that no single state has the capacity to replicate or replace.
9	States that choose to implement federal programs should be both adequately funded by the federal government to do so as Congress directed in authorizing statutes and should also invest state resources (either directly or through fees or other methods) sufficient to implement a successful program.	U.S. EPA should have sufficient resources to meet these responsibilities and to financially support states in the implementation of federal statutes and programs. U.S. EPA should have sufficient resources to meet all obligations to states and to ensure timely review and decisions on program submittals by the states. The level of federal support to states implementing federal programs, policies, and standards should be calibrated to the scope and complexity of federal requirements that states must achieve in order to assume or continue implementation responsibility.

Part II: Changes Implied by Cooperative Federalism 2.0

Our state environmental programs exist to provide the level of environmental and human health protection promised to the American people through our national and state statutes. The key principles articulated above spark the following observations and entreaties for consideration by all parties with an interest in these critical matters. Many of them are buttressed by work underway between U.S. EPA and the states. However, the full embodiment of the principles clearly means a change from business as usual for most states and U.S. EPA and requires a willingness for U.S. EPA and the Congress to align the state/federal relationship with the current realities and responsibilities of state implementation of national regulatory programs. States are willing and eager to engage in this important dialogue.

A. Ensuring adequate capital and operating resources to fully implement federal environmental laws has been and must remain a priority focus. Robust cooperative federalism cannot be achieved if one party or the other is not capable of performing its critical functions. Inadequate implementation by states benefits no one; insufficient or non-timely performance by U.S. EPA hurts everyone. Both states and U.S. EPA need to perform as required and expected under a truly effective cooperative federalism. Neither party can, nor should be expected to, perform the important functions needed by the other for each to be successful. For example, adequate capital requirements for clean water (including drinking water) are a crucial public health necessity and a shared responsibility between the federal government, the states, and local governments. The federal government should financially support state implementation efforts commensurate with the complexity and breadth of federal requirements. Furthermore, when states implement federally delegated authorities, they must continue to provide a level of resources commensurate with their responsibilities. In the event there are decreases in the level of support for the operation of federally delegated programs by either federal or state governments, it is critical that there be a shared understanding, and transparency around, what work may no longer be performed by either party.

B. With robust engagement of all interests, including states, U.S. EPA should identify key outcomes for implementing federal environmental and public health laws that each federal program, standard, or policy is intended to accomplish. U.S. EPA should seek to demonstrate this through environmental and service delivery (i.e., time) "outcome" metrics rather than "output" metrics. These metrics should be understandable to the regulated community and the public. States should report at regular and consistent intervals to U.S. EPA and the public, through these agreed-upon and, to the extent possible, nationally consistent metrics, what environmental, public health, and service delivery outcomes the state-implemented federal programs, policies, and standards have achieved.

C. U.S. EPA and states' working relationships should be continually reviewed, improved, and reformed to conform with the key principles. EPA's oversight of state's performance should emphasize developing, aligning, and mutually supporting efforts that successfully address environmental challenges instead of routinely reviewing state's individual implementation actions. Such cooperative efforts should include development of new regulations and guidance consistent with the key principles, review of past practices and regulations that may be outdated and inefficient (and hence should be modified or eliminated), and determination of how regional and national consistency on implementation can be harmonized with state flexibility and innovation in implementation. There are significant ongoing efforts ready for scale to accomplish this, including E-Enterprise, in which U.S. EPA, states, and tribes jointly identify, manage, and implement projects designed to improve agency performance, implement efficiencies, and reduce burdens on the public and the regulated community. The widespread adoption of business process improvement techniques by states and U.S. EPA shows the benefit of continuing and expanding this effort through adoption of the principles.

D. Healthy and vibrant communities and economies rely upon both effective environmental protection and resilient economic growth. Achieving national minimum standards contributes greatly to the former; implementing efficient and effective programs contributes greatly to the latter. State flexibility to determine the best way for its programs to achieve national minimum standards that accounts for unique geophysical, ecological, social, and economic conditions is a particularly important aspect of ensuring that environmental protection and economic prosperity go hand-in-hand with healthy and vibrant communities.

E. As the scope and breadth of environmental programs has grown to address the issues upon which they are focused, assuring regulatory compliance has become increasingly complex. Robust and appropriate enforcement of regulations is a key aspect of compliance assurance, both by stopping and remedying non-compliance and by creating a climate of deterrence for other potential deliberate violators. States see significant benefit in providing focused compliance assistance and assurance programs that assist the regulated community to come into compliance by increasing its understanding of regulatory requirements and by developing effective ways to achieve compliance. Providing assistance is critical to support the vast number of entities that want to be in compliance. Creating a connection to those entities who may need compliance support can prevent them from becoming cases for formal enforcement action. States are implementing a wide range of such programs and developing methods to measure overall compliance, as well as the effectiveness of these programs.

F. Support for small communities to help improve community health and build necessary resilience to sustain it is needed across the nation. National minimum standards often represent significant financial burdens on these communities, which can be considerably exacerbated when investments are considered one program or one pollutant at a time. States and U.S. EPA have begun to address this pressing challenge, but ensuring that all communities in need of this support — and capable of implementing it responsibly — receive it, remains elusive.

G. As our environmental challenges become more complex and diffuse, novel approaches are needed that will depend upon comprehensive cooperative federalism to be successful. Pollutants are often found to have cumulative and synergistic relationships that are difficult to address under our single pollutant-by-pollutant statutory approach. Pollutants also do not respect political boundaries, highlighting the need for multi-state and multi-national approaches and cooperation.

Conclusion and Next Steps

We strongly believe that positive reforms and improvements to the bedrock of cooperative federalism are needed and warranted at this time to create and implement environmental protection programs worthy of 21st century challenges. States are eager to engage our federal partners, and others who have a keen interest in how the states and federal governments perform their roles, on how we can move forward consistent with these principles, in order to protect the environment and public health of our great nation.

ECOS

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IOWA ECONOMIC DEVELOPMENT AUTHORITY
200 East Grand Avenue | Des Moines, Iowa 50309 USA | Phone: 515.725.3000
iowaeconomicdevelopment.com

IOWA economic development

April 10, 2017

The Honorable Charles E. Grassley
135 Hart Senate Office Building
Washington, DC 20510

The Honorable Joni K. Ernst
111 Russell Senate Office Building
Washington, D.C. 20510

Re: Corn Oil 1 bio-intermediary designation by EPA

Dear Senators Grassley and Ernst:

As an organization involved in promoting the biofuels industry in Iowa, we are asking for your help with an issue that an Iowa company is experiencing, due to what appears to be a misunderstanding or mischaracterization by the EPA.

Corn Oil 1 is a company that started in 2014 with a goal to refine Distillers Corn Oil (DCO) effectively and efficiently, making it one of the preferred feedstock sources in the biodiesel industry. Because of a rule made by EPA that classifies Corn Oil 1 as a "bio-intermediary" instead of vegetable oil, the product is not on a level playing field with other vegetable oils, keeping it out of the market and making it unable to compete in the RFS.

To summarize, this is the issue:

1) EPA arbitrarily classified Corn Oil 1 as a bio-intermediary, shutting them out of the RFS2 biodiesel market. This has harmed Corn Oil 1 substantially, and has hurt the biodiesel and ethanol industries.

2) By making up this "distinction without a difference," EPA has denied Corn Oil 1 (and hundreds of upstream ethanol plants) access to an expanded marketplace, while other vegetable oil sectors, following an identical pathway, have access to freely trade in this market.

3) Corn Oil 1 needs to be positively accepted as Non Food Grade Corn Oil (NFGCO) and eligible for the NFGCO Pathway by the EPA, as other vegetable oils are under the original RFS2 designation. Without this, Corn Oil 1, and the industries it serves, will be irreparably damaged.

On behalf of the biofuels industry in Iowa, we respectfully request your assistance in reviewing this matter with the EPA.

Sincerely,

Debi Durham
Director

April 11, 2017

Dear Senator Grassley and Ernst:

As organizations interested and involved in the renewable fuels industry in Iowa, we are asking for your assistance to correct a regulatory decision that is being applied unfairly and in turn is harming numerous Iowa companies.

As you know, distillers corn oil (DCO) is an increasingly important co-product for ethanol producers and a quickly growing feedstock for biodiesel producers. However, an unnecessary and counter-productive regulatory interpretation is dramatically reducing the marketability of DCO. Just like soybean oil and animal fats, DCO requires some pretreatment prior to its use as a biodiesel feedstock. The Environmental Protection Agency (EPA) has interpreted that performing the "clean-up" process at one facility disqualifies that DCO as a renewable biomass feedstock for conversion to biodiesel at another facility under the Renewable Fuel Standard (RFS). This designation being applied only to DCO is not justified as the resulting product is simply a commodity, just as refined bleach (RB) soybean oil or choice white grease (CWG).

A perfect example of this is the Corn Oil 1 facility near Council Bluffs. The facility is capable of "cleaning-up" DCO so that it can go directly into biodiesel production. If this pretreatment occurred at the biodiesel production facility (necessitating millions of dollars of investment in equipment) the EPA allows the use of the DCO as a biodiesel feedstock. But if the <u>same</u> process occurs at Corn Oil 1 (where the investment in equipment can be utilized for DCO from multiple ethanol plants to supply "cleaned-up" DCO to multiple biodiesel plants), then the DCO is not currently allowed for use to produce biodiesel under the RFS. The disparate outcome of the same process simply based on location is both unnecessary and unfair. It has been devastating to Corn Oil 1 and has harmed the ethanol and biodiesel plants that have intended to make use of the innovative facility.

We request an immediate solution to this situation before more harm is incurred by Corn Oil 1 and dozens of ethanol and biodiesel plants. The solution is for the EPA to recognize that "cleaning-up" DCO is no different than a renderer preparing CWG for the market or a soybean refiner suppling RB soybean oil to a biodiesel plant. All of these products should be considered renewable biomass under the RFS. We are also concerned that EPA may try to address this problem by designating all of these products as bio-intermediates, which would cause more confusion, paperwork and unnecessary expense.

Any economically viable processes for preparing the feedstocks for use as a biofuel feedstock would utilize an inconsequential amount of energy in terms of the ultimate biofuel meeting the RFS threshold for advanced biofuels. Any further disruption of these feedstocks for use in biofuels production would have a devastating impact on the RFS. In 2016, soybean oil accounted for 66 percent of Iowa biodiesel production, while animal fats and corn oil accounted for 14 and 10 percent respectively.

We respectfully ask for your help with the EPA so that they understand the market realities of these feedstocks and to encourage them to fix this regulatory overreach expeditiously.

Sincerely,

Golden Grain Energy
Greater Des Moines Partnership
Green Plains, Inc.
Iowa Biotech Association
Iowa Corn Growers Association
Iowa Farm Bureau Federation
Lakeview Plymouth Energy
Lincolnway Energy
Little Sioux Corn Processors
Pine Lake Corn Processors
Prairie Feed and Trucking
Quad County Corn Processors
Siouxland Energy Coop
Western Dubuque Biodiesel
Western Iowa Energy

EEI | Edison Electric INSTITUTE

Message

From: Alteri, Sean (EEC) [Sean.Alteri@ky.gov]
Sent: 6/21/2017 2:19:43 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: [SPAM] Quick call on Interstate Transport
Attachments: Sierra_Club_v._McCarthy_80.pdf

Good morning, Mandy.

I hope this email finds you well. If you have time today or tomorrow, I would like to have a quick call regarding the attached court order and a SO2 related matter. Today, I will not be available from 2:30-4:00 pm and tomorrow from 10-2.

Thank you,

Sean

Sean Alteri, Director
Kentucky Division for Air Quality
300 Sower Boulevard, 2nd Floor
Frankfort, Kentucky 40601
(502) 782-6541
http://air.ky.gov

United States District Court
Northern District of California

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SIERRA CLUB,

Plaintiff,

STATE OF NEW YORK,

Plaintiff-Intervenor,

v.

SCOTT PRUITT, in his official capacity as Administrator of the United States Environmental Protection Agency,

Defendant.

Case No. 3:15-cv-04328-JD

ORDER RE PARTIAL CONSENT DECREE AND SUMMARY JUDGMENT

Re: Dkt. Nos. 57, 61-62

Plaintiff Sierra Club, Plaintiff-Intervenor the State of New York, and Defendant Gina McCarthy in her capacity as Administrator of the United States Environmental Protection Agency ("EPA") jointly request entry of a partial consent decree relating to the ozone National Ambient Air Quality Standard ("NAAQS"). Since the filing of this action, Scott Pruitt has replaced McCarthy as EPA Administrator, and the Court on its own initiative substitutes Pruitt in her place.

As discussed at the hearing in March 2017, no entity or party opposed entry of the partial consent decree. Based on the materials submitted by the parties, the Court finds that the decree is fair, adequate and reasonable and the product of good faith, arms-length negotiation. *See United States v. Montrose Chem. Corp.*, 50 F.3d 741, 746 (9th Cir. 1995). Consequently, the partial consent decree will be entered in conjunction with this order.

The parties disagree on the date by which the EPA should promulgate a federal implementation plan ("FIP") for the State of Kentucky that addresses Kentucky's obligations under the "Good Neighbor Provision" in 42 U.S.C. § 7410(a)(2)(D)(i)(I) for ozone emissions

originating in Kentucky that might be transported to New York and other downwind states. The EPA forthrightly acknowledges that it did not meet a mandatory deadline under 42 U.S.C. § 7410(c)(1) to promulgate the Kentucky FIP by June 2, 2016. Dkt. No. 63 at 5. It proposes a deadline of February 2020 to finish this work. Plaintiffs propose a deadline of June 2018.

As an initial matter, the Court credits the parties for informally resolving a number of complex issues relating to the ozone NAAQS, and the EPA for not contesting liability over the Kentucky FIP. Nevertheless, Section 7410(c)(1) imposed an absolute duty on the EPA to issue the FIP within two years of Kentucky's failure to adopt an adequate state implementation plan. *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584, 1600 (2014). In the wake of the EPA's breach of that duty, the sole remaining issue of timing is entrusted to the Court's broad latitude to fashion a remedy. *Alaska Ctr. for the Env't v. Browner*, 20 F.3d 981, 986 (9th Cir. 1994). The Court will exercise its equitable powers to enforce Congress's strict timing requirements to the fullest extent possible, but short of requiring the EPA to do anything the record demonstrates is impossible. *See Sierra Club v. Johnson*, 444 F. Supp. 2d 46, 52-53 (D.D.C. 2006) (and cases cited therein). To the extent the EPA seeks leeway under Section 7410(c)(1), it carries a heavy burden to explain why it should be allowed to depart from Congress's express deadline. *Id.*

Nothing in the EPA's filings justifies an extension of the deadline to complete the Kentucky FIP to 2020. The EPA points to a number of alleged roadblocks to quicker action, but most of them are variations on the theme that further analysis and study might improve the Kentucky FIP. That is no basis for slighting a congressional mandate. *Cmtys. for a Better Env't v. EPA*, No. 07-cv-03678-JSW, 2008 WL 1994898, at *3 (N.D. Cal. May 5, 2008). The Court will not sacrifice timely promulgation of a Kentucky FIP under Section 7410(c)(1) for development of a perfect plan; Congress has concluded that prompt, though imprecise, regulations are preferable to no regulations at all. *See Sierra Club*, 444 F. Supp. 2d at 54 (quoting *State v. Gorsuch*, 554 F. Supp. 1060, 1064 (S.D.N.Y. 1983)). The EPA has not demonstrated any good reason to push out the Kentucky FIP for another three years.

Plaintiffs' proposed deadline of June 2018 is considerably more faithful to Congress's directive. That date gives the EPA an additional two years to complete the FIP after June 2016,

which the EPA agrees was the outer boundary of the statutory deadline. This proposal might even be too generous given the express terms of Section 7410(c)(1), but the Court has not been presented with a reason to order an earlier date.

Consequently, summary judgment is granted for plaintiffs and the EPA is ordered to promulgate the Kentucky FIP by June 30, 2018. The Court will retain jurisdiction over the case until then. If the EPA encounters significantly changed circumstances impeding its ability to meet the deadline, it should advise the Court for possible further proceedings.

IT IS SO ORDERED.

Dated: May 23, 2017

JAMES DONATO
United States District Judge

United States District Court
Northern District of California

Message

From: Walker, Ryan [RYAN.WALKER@bp.com]
Sent: 6/13/2017 6:00:24 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Re: Time for a brief phone call?

Would Thursday at 1pm work?

Ryan P. Walker
Senior Director, Federal Gov't Affairs
BP America, Inc.
Sent from my iPhone

On Jun 12, 2017, at 11:53 AM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

> Hey Ryan,
> I'm on travel until Wednesday, but happy to chat when I get back.
> Alex, can you please set up a time to chat with Ryan for later this week?
> Thanks,
> Mandy
>
> Sent from my iPhone
>
> On Jun 12, 2017, at 5:47 PM, Walker, Ryan <RYAN.WALKER@bp.com> wrote:
>
>> Hi, Mandy! Just wanted to see if you had time for a quick 5 minute phone call this week?
>
>> Ryan P. Walker | Senior Director, Federal Government Affairs | BP America, Inc.
>> 1101 New York Avenue NW, Suite 700 | Washington, DC 20005
>> Direct: (202) 346-8542 | Cell: (202) 907-4829 | Email: Ryan.Walker@bp.com

Message

From: Barrino, Reginald [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=376274EC85A24FF1A1F5A4F002FFDC57-BARRINO, REGINALD]
Sent: 6/12/2017 12:52:17 PM
To: Andrew Covington [acovington@AllenES.com]; Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Rebecca Combs-Dulaney Personal Email / Ex. 6 ; Cole Cardwell [cole-cardwell@sssvc-inc.com]; mike evans [mike-evans@sssvc-inc.com]
Subject: RE: Supplemental Environmental Project for Structural Steel

Andrew - Thank you.

Reginald S. Barrino
Environmental Engineer
U.S. EPA Region 4 / Office of Enforcement Coordination
61 Forsyth St. SW / Atlanta, GA 30303
404.562.9635 / barrino.reginald@epa.gov

From: Andrew Covington [mailto:acovington@AllenES.com]
Sent: Monday, June 12, 2017 8:47 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Barrino, Reginald <Barrino.Reginald@epa.gov>
Cc: Rebecca Combs-Dulaney Personal Email / Ex. 6 >; Cole Cardwell <cole-cardwell@sssvc-inc.com>; mike evans <mike-evans@sssvc-inc.com>
Subject: FW: Supplemental Environmental Project for Structural Steel

Reggie and Mandy,
I have attached what was sent to Erika White on June 9, 2017, of EPA in Atlanta as a proposed Supplemental Environmental Project (SEP) for Structural Steel Services. We believe this will be a very environmentally beneficial project for the air quality of the South Industrial Park of Meridian. The money spent will greatly exceed the amount allowed as part of the settlement, and these activities are not otherwise required.

As soon as we get approval from EPA for the SEP, Structural Steel will proceed. Please contact me if there are any questions.

Thanks,
Andrew Covington

Andrew S. Covington, P.E.
VP and Principal Engineer
902 20th Avenue, Meridian, MS 39301
Office: 601.696.7146 • Cell: 601.917.7076
Website • Facebook • LinkedIn • Twitter

From: Andrew Covington
Sent: Friday, June 09, 2017 3:28 PM
To: 'White, Erika' <White.Erika@epa.gov>

Cc: Cole Cardwell <cole-cardwell@sssvc-inc.com>; 'Rebecca Combs-Dulaney' Personal Email / Ex. 6 >; 'mike evans' <mike-evans@sssvc-inc.com>; Travis Beard <tbeard@allenes.com>
Subject: Supplemental Environmental Project for Structural Steel

Erika,
On behalf of Structural Steel Services, Inc. of Meridian, Mississippi, I am submitting a Supplemental Environmental Project as partial resolution of the EPCRA Section 313 violations. I am doing this at the direct request of Rebecca Combs-Dulaney. Her contact information, along with mine, can be found below.

Based on instructions from you and Eddie Chow the attached document can be used to propose a Supplemental Environmental Project. Please contact me if another format is needed or if additional information is required.
Thanks,
Andrew

Rebecca Combs-Dulaney
Vice President
Structural Steel Services, Inc.
PO BOX 2929
6210 St. Louis St.
Meridian, MS 39302
601-616-4428 (cell)
601-483-5475 (fax)
Personal Email / Ex. 6

ALLEN

Andrew S. Covington, P.E.
VP and Principal Engineer
902 20th Avenue, Meridian, MS 39301
Office: 601.696.7146 • Cell: 601.917.7076
Website • Facebook • LinkedIn • Twitter

Message

From: Matt Ogren [MOgren@insightwebpoll.com]
Sent: 6/15/2017 12:45:43 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: TradeMarks Study 2017: please share your perspectives

Hello Amanda Gunasekara,

There is still time to share your impressions in the 4th annual TradeMarks Study which examines perceptions of trade association effectiveness.

Please click on the link below to be taken to this 15-minute survey:

START NOW

Alternatively, you can copy and paste the following URL into your internet browser:
http://www.insightwebpoll.com/association2017&p=E4754

By participating, you will help to determine where $5,000 in charitable contributions to charities will be going. We will also send you an advance copy of the study's executive summary when the study is completed.

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

Thank you in advance for your participation.

Matt Ogren
Study Director

5086 List Drive, Colorado Springs, CO 80919
Unsubscribe

Structural Steel Services, Inc.
P. O. Box 2929
Meridian, MS 39301
Fabricators of Structural, Platework and Miscellaneous Steel

LOCATION:

South Industrial Park
6210 St. Louis Street
Meridian, Mississippi 39307
Across from the
Meridian Municipal Airport

STRUCTURAL STEEL SERVICES, INC.

MAILING ADDRESS:

Post Office Box 2929
Meridian, Mississippi
39302
Phone 601/483-5381
FAX 601/482-1520 Plant 1
FAX 601/483-8742 Plant 2

June 9, 2017

Proposed Supplemental Environmental Project

Structural Steel Services, Inc. (SSS) would like to submit a Supplemental Environmental Project (SEP) to mitigate 75% ($117,573) of the calculated penalty for Toxic Release Inventory (TRI) violations. The cost associated with this SEP will exceed the $117,573 limit. Details on the SEP are provided below. The TRI violations that triggered the need for a SEP were clerical in nature. The TRI calculations are performed every year by an outside consultant to determine if a reporting threshold is reached. The calculations have routinely determined that reporting is required and SSS has routinely submitted the annual TRI report to EPA. However, it was determined that failed communication between the consultant and a former employee of SSS did not include all components of paint mixtures in the annual calculations, so there were selective years when not all of the chemicals that reached a threshold were reported. SSS has repeatedly stated this was a clerical oversite and not an intentional act.

By reaching a threshold which required other chemicals to be reported on select years, the SSS operation was not required to be modified. There was never a "spill" or inappropriate use of a chemical. All chemical usage was within permitted limits. If all chemicals had been summarized correctly the TRI report would have included all chemicals for all years. There was never any advantage to SSS to omit reporting of chemicals, as stated above, as there would not have been a needed change in the operation or usage of chemicals. The only change would have been to include the additional chemicals on select years in the TRI report.

After an April 2016 inspection by EPA determined there was an oversite in the calculations, SSS re-calculated the chemical reporting for xylene, toluene, and zinc dust. SSS has fully cooperated with EPA in trying to determine the correct numbers to report. In the more recent stages of recalculating EPA allowed SSS to co-mingle plants and their chemicals to determine if that was a preferable method. The new chemical summations determined that toluene was not adequately reported in years 2012, 2013 and 2015 for Plants 1 and 2 combined. In years 2012, 2013, 2014 and 2015 zinc dust was not reported. In year 2014 xylene was not reported. After the total xylene of Plant 1 and Plant 2 were merged then xylene reached the reportable threshold level. Previously, the calculations determined that reporting thresholds were not exceeded in 2014. Xylene was reported in years 2012, 2013, and 2015, but EPA found the calculations as not accurate enough. EPA determined a penalty of $156,764 for the clerical errors listed above. In an effort to resolve the reporting discrepancy SSS has agreed to pay 25% of the penalty ($39,191) and submit the SEP for the remaining 75%.

The SSS SEP is as follows: The current setting of the SSS site are large steel buildings which house the activities to fabricate structural steel. SSS' core business is the fabrication of structural steel components for medium and large construction projects. The I-beams used in this operation can be up to 90' long, so heavy duty trucks are required to transport the I-beams. All of the fabrication is done under roof. However, Plant 1, which is the largest of the facilities, is surrounded by dirt roads. SSS has a significant number of large trucks that enter the property as part of their routine business. It is estimated there are 75 trucks and other vehicles that use the dirt/gravel road around Plant 1 every day. Also, there must be room for the trucks to maneuver on the property, so the total acreage of dirt roads and turn-around areas is significant. SSS has not quantified the air quality during dusty periods, but it is not difficult to imagine that in the long, hot, and often dry summers of Mississippi, extremely large amounts of dust can be generated from the truck traffic. Clouds of dust can be seen billowing up from the site when the conditions are not favorable. In the fall months of 2016, for example, central Mississippi experienced unusual drought conditions, so excessive dust in the air was a daily occurrence.

SSS proposes a SEP to concrete the roads around Plant 1 to dramatically reduce the dust problem. Because the trucks are heavy duty it will require a more substantial road bed. Simply black-top paving the roads is not sufficient. Approximately 8" of concrete is needed to carry the heavy loads. SSS has estimated 40,000 square feet will be needed to cover the heavily used areas. To concrete 40,000 square feet of roads with 8" of concrete will cost well over $250,000. SSS is not required by their air permit or any regulation to pave the roads around the property to reduce the particulate matter in the area.

The proposed SEP will dramatically benefit the area in the vicinity of SSS and also the environmental health of the workers of SSS, adjacent facilities workers, and the air quality of the area. SSS has approximately 212 employees. There are an additional 375 full time employees and 50 part time employees at the industrial park working at other companies within ½ mile. There are many other workers, such as truck drivers, delivery personnel, and a wide variety of others that could be exposed to the particulate matter caused by the dust.

Due to the clerical nature of the original violation a compensatory SEP is not easily determined. However, we are convinced this SEP will provide immediate environmental benefit to SSS workers, workers in adjacent facilities, and also to the entire south industrial area.

Precedent for this SEP: A similar paving project was approved by the Lane Regional Air Protection Agency in Lane County, Oregon. BRING Recycling was approved for a project to "pave a large, dirt parking lot/ roadway/retail area at the new Planet Improvement Center to accommodate trucks, heavy equipment and retail customers. Funds would be used for design/engineering ($15,000); paving ($45,000); and bioswale construction ($45,000)." The total cost that was approved for the SEP was $105,000 for that particular project.

SSS believes the project could be initiated almost immediately depending on the availability of concrete service companies. It should be completed within 6 months of project initiation. SSS appreciates EPA considering the environmental benefit to the area that this SEP would provide, and we are eager to completely resolve the enforcement action. At the conclusion of the SEP activities a SEP Completion Report will be submitted to EPA.

We look forward to your reply. If further details or information is required then please contact us.

Message

From: Stanko, Joseph [jstanko@hunton.com]
Sent: 6/12/2017 12:16:47 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: In town, or still in Italy?

HUNTON & WILLIAMS

Joseph Stanko
Partner
jstanko@hunton.com
p 202.955.1529
bio | vCard

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037
hunton.com

Message

From: Gov Records Management Training Workshop XIV [PotomacForumTraining@GovernmentRecordsManagement.org]
Sent: 6/12/2017 5:37:11 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: [SPAM] Next Tuesday: Gov Records Management Training Workshop

Records Management in Government
Training Workshop XIV
Agency Self Assessments are in to NARA
- How Can You Improve Your Scores?

Managing Government Records Directive Updates:
What Agencies Need to Do for 2017 and Beyond
Lessons Learned and Best Practices

June 20, 2017
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Don Rosen
Director of Records Management Oversight and Reporting
National Archives and Records Administration (NARA)
and
Arian Ravanbakhsh
Manager, Policy and Program Support Team
National Archives and Records Administration (NARA)

Additional Government Speakers
Matthew Olsen
Acting Chief Privacy and Data Sharing Officer
Acting Executive Director
Office of Privacy & Information Management (PIM)
U.S. Department of Health and Human Services

Mark Patrick
Chief, Information Management Division
The Joint Staff Secretariat
Department of Defense

Additional Government Speakers to be Announced Soon

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This one-day Potomac Forum Workshop will focus on the activities mandated by the NARA/OMB Records Management Directive. Key executives from NARA and government agencies will discuss the directive and its implementation. Detailed review and analysis of the directive will be presented to help agencies better understand what they need to do, how to do it, and how to get the funding necessary to be successful.

This workshop will examine the Senior Agency Official for Records Management report to NARA to determine what steps are required to fill the gaps

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Format:

This workshop will combine keynote presentations by NARA, lectures on implementing the Directive, real world examples and discussions to provide a thorough, enjoyable day of learning.

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From: EPA@BCDTRAVEL.COM [EPA@BCDTRAVEL.COM]
Sent: 6/11/2017 2:38:41 PM
To: Willis, Sharnett [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=97b55bdfac5e41d8aa81064dfa2cb944-Willis, Sharnett]; EPA@BCDTRAVEL.COM; Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: UPDATED 11Jun - Travel Receipt for GUNASEKARA/AMANDA M Travel date 13Jun
Attachments: Travel Receipt Communication Attachment - KLTWPG - June 13 2017.PDF

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Please visit the operating carrier website of your ticketed itinerary for applicable fees.

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Ticket Receipt

Total Amount: 39.90 USD
This ticket information applies to the following trip(s):

Delta Air Lines Flight 445 from Rome to New York NY on June 13
Delta Air Lines Flight 4153 from New York NY to Washington DC on June 13 **(Operated By: Endeavor Air Dba Delta Connection)**

ElectronicTicket Number: 0068608099989
Invoice Number: 000169107
Ticket Amount: 0.00 USD
Form of Payment: CA**********4442

Service Fee Number: 8900694189162
Service Fee Amount: 39.90 USD
Form of Payment: CA**********4442

Travel Summary – Agency Record Locator KLTWPG

Traveler

GUNASEKARA / AMANDA M

Reference number by traveler: TAA04J3M

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/13/2017	**FCO-JFK**	DL 445	Confirmed	12:30 PM/04:22 PM	Economy / K
06/13/2017	**JFK-IAD**	DL 4153*	Confirmed	06:30 PM/08:17 PM	Economy / K

AIR - Tuesday, June 13 2017 - Agency Record Locator KLTWPG

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Delta Air Lines Flight DL445 Economy — Online check-in

Depart:	Fiumicino, Terminal 1 Rome, Italy 12:30 PM Tuesday, June 13 2017	Weather
Arrive:	John F Kennedy Intl, Terminal 4 New York, New York, United States 04:22 PM Tuesday, June 13 2017	Weather
Duration:	9 hour(s) and 52 minute(s) Non-stop	
Status:	Confirmed - Delta Air Lines Record Locator: HU9EM8	
Meal:	Lunch	
Equipment:	Airbus Industrie A330-300	
Seat:	16D (Non smoking) Confirmed	
Distance:	4263 miles / 6859.167 kilometers	
CO2 Emissions:	1,594.36 lbs/724.71 kgs	
Remarks:	NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED	

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Delta Air Lines Flight DL4153 Economy — Online check-in

Depart:	John F Kennedy Intl, Terminal 4 New York, New York, United States 06:30 PM Tuesday, June 13 2017	Weather
Arrive:	Dulles Intl Washington, District of Columbia, United States 08:17 PM Tuesday, June 13 2017	Weather
Duration:	1 hour(s) and 47 minute(s) Non-stop	
Total duration:	**13 hour(s) and 46 minute(s) including layover(s)**	
Status:	Confirmed - Delta Air Lines Record Locator: HU9EM8	
Equipment:	Canadair Regional Jet	
***Operated By:**	**Endeavor Air Dba Delta Connection**	
Seat:	09B (Non smoking) Confirmed	
Distance:	227 miles / 365.243 kilometers	
CO2 Emissions:	124.85 lbs/56.75 kgs	
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Air	**Car**	**Hotel**	**Rail**	**Other**
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Ticket Amount: 0.00 USD
Form of Payment: CA**********4442

Service Fee Number: 8900694189162
Service Fee Amount: 39.90 USD
Form of Payment: CA**********4442

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Traveler
GUNASEKARA / AMANDA M
Reference number by traveler: TAA04J3M

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/13/2017	**FCO-JFK**	DL 445	Confirmed	12:30 PM/04:22 PM	Economy / K
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Depart:	Fiumicino, Terminal 1 Rome, Italy 12:30 PM Tuesday, June 13 2017
Arrive:	John F Kennedy Intl, Terminal 4 New York, New York, United States 04:22 PM Tuesday, June 13 2017
Duration:	9 hour(s) and 52 minute(s) Non-stop
Status:	Confirmed - Delta Air Lines Record Locator: HU9EM8
Meal:	Lunch
Equipment:	Airbus Industrie A330-300
Seat:	16D (Non smoking) Confirmed
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CO2 Emissions:	1,594.36 lbs/724.71 kgs
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Arrive:	Dulles Intl Washington, District of Columbia, United States 08:17 PM Tuesday, June 13 2017
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Total duration:	**13 hour(s) and 46 minute(s) including layover(s)**
Status:	Confirmed - Delta Air Lines Record Locator: HU9EM8
Equipment:	Canadair Regional Jet
***Operated By:**	**Endeavor Air Dba Delta Connection**
Seat:	09B (Non smoking) Confirmed
Distance:	227 miles / 365.243 kilometers
CO2 Emissions:	124.85 lbs/56.75 kgs
Remarks:	NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

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WITH YOUR TRAVEL CONSULTANT OR THE AIRLINES WEBSITE.
**
NO PRE-RESERVED SEATING AVAILABLE ON ANY FLIGHT
**
DESTINATION. FOR THE LATEST INFORMATION PLEASE CHECK

11Jun/09:38AM

TRAVELER NOTICE – Please check with your carrier(s) for travel documents required (Passport, VISA, etc.) and security requirements regarding permitted and prohibited articles and goods related to your travel.

Estimated trip total				0.00 USD
Air	Car	Hotel	Rail	Other
Unavailable				
All quotes are provider quotes excluding possible taxes and charges en route. Currency conversions shown in this itinerary receipt are done using the bank rate applicable at the date shown in the header of this document. Please note that some local taxes and charges may be invoiced during your trip and cannot be shown at time of reservation.				

Advice to Passengers

Transportation of Hazardous Materials

Federal law forbids the carriage of hazardous material aboard the aircraft, in your luggage, or on your person. A violation can result in 5 years imprisonment and penalties of $250,000 or more (49 U.S.C 5124). Hazardous materials include explosives, compressed gases, flammable liquids and solids, oxidizers, poisons, corrosives and radioactive materials.

Forbidden Dangerous Items Examples:

Paints, lighter fluid, fireworks, tear gases, oxygen bottles and radiopharmaceuticals. There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person. For further information, contact your airline representative.

Note: Spare batteries and fuel cells are not permitted in checked or hold baggage. These items MUST be packed in carry-on baggage. If your carry-on bag is gate checked, the spare batteries and fuel cells must be removed and carried in the cabin.
Email generated on 11Jun/2:38 PM UTC

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Message

From: Booking Queen Limousine [booking@queenlimousine.com]
Sent: 6/12/2017 5:33:00 PM
To: Caron De Mars Personal Email / Ex. 6
CC: Kasman, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=419892c6fdc74087b775abb683821344-MKasman]; Federica Signoretti [SignoretF@state.gov]; Michael Lee [LeeMD2@state.gov]; Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]; Dravis, Samantha [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ece53f0610054e669d9dffe0b3a842df-Dravis, Sam]
Subject: Re: Change in pickup time- Dravis and Gunesakara from 7:40am to 9am
Attachments: Booking Information Queen.pdf

Dear Caron,

please find below the confirmation updated as per your request:

Ticket	Day	Time	Pick up	Drop off	Vehicle	Passengers	Event	Reference	Note	Payment	Dr
005225639	**13.06.2017**	**09:00**	RM HTL REGINA BAGLIONI - via Vittorio Veneto, 72	FCO VOLO Delta 0445 DELLE 12:30	CAR	02 PAX SAMANTHA DRAVIS / MANDY GUNASEKARA			CASH €50,00	Diretto all'autista	GIUSE +39339

Please find enclosed the Booking Information document, for policies and the capacity of the vehicles.

Best regards

Elena
Booking Office
Office: +39 0694446701
Fax: +39 0689280487

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Queen Limousine and Services
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Boutique Travel Group
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Per favore, prendete nota dei nostri **nuovi numeri di telefono** indicati in firma
Please, take note of our **new phone numbers** listed in the sign
Пожалуйста, обратите внимание на наши **новые номера телефонов** указанные в визитной карточке

We are present and operative in Rome, Milan, Florence, Bologne, Turin, Naples, Sardinia and other major Italian cities.

With the support of TelTeam

Ai sensi del D.Lgs.196/2003 si precisa che le informazioni contenute nel presente messaggio sono riservate e ad uso esclusivo del destinatario. Qualora il messaggio in parola Le fosse pervenuto per errore, La invitiamo ad eliminarlo senza copiarlo e a non inoltrarlo a terzi, dandocene gentilmente comunicazione. Grazie.
Persuant to Legislative Decree NO.196/2003, you are hereby informed that this message contains confidential information intended only for the use of the addressee, and have received this message by mistake, please delete it and immediately notify us. You may not copy or disseminate this message to anyone. Thank you

Il 12/06/2017 19.09, Caron De Mars ha scritto:

avast
Questa e-mail è stata controllata per individuare virus con Avast antivirus.
www.avast.com

La Queen Limousine and Services raccomanda l'uso della cintura di sicurezza per la Vostra sicurezza personale.
Queen Limousine and Services recommends to using always the seat belt for Your personal safety.

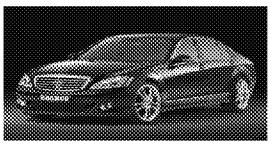
Passeggeri e bagagli

Passengers and luggage

Mercedes Classe E

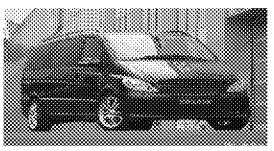
1 - 3 Passeggeri / Passengers
2 Valigie / Suitcases + 2 Bagagli a mano / Hand luggage

Mercedes Classe S



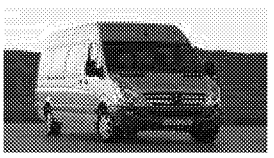
1 - 3 Passeggeri / Passengers
2 Valigie / Suitcases + 2 Bagagli a mano / Hand luggage

Mercedes Viano



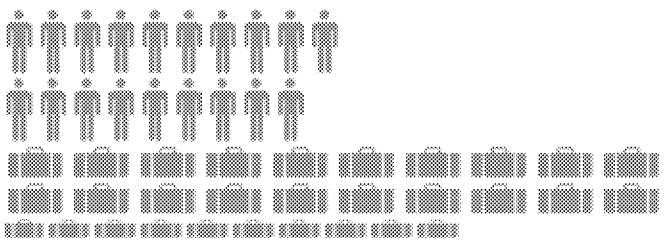
1 - 6 Passeggeri / Passengers
6 Valigie / Suitcases + 3 Bagagli a mano / Hand luggage

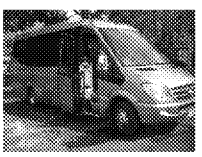
Mercedes Sprinter

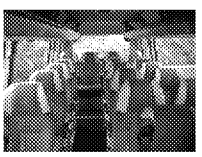


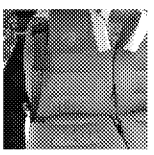
1 - 8 Passeggeri / Passengers
8 Valigie / Suitcases + 4 Bagagli a mano / Hand luggage

Mercedes Sprinter 519 / 19 PAX DELUX



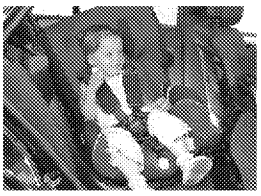






1 - 19 Passeggeri / Passengers
20 - 30 Valigie / Suitcases

Servizio seggiolino auto per bambini



Il seggiolino auto per bambini può essere richiesto alla Queen Limousine and Services entro 48 ore prima del servizio. Il costo di tale servizio è di €15,00+IVA a seggiolino per un massimo di due.
I nostri seggiolini sono tutti omologati a norma di legge.
Vi informiamo, inoltre, che la Legge Italiana prevede l'obbligo del seggiolino solo sul sedile anteriore e non sul sedile posteriore se accompagnato e sorretto da una persona di almeno 16 anni di età.
La Queen Limousine and Services, in ogni caso, ne raccomanda sempre l'uso.

Baby seat service

Baby seat may be required, at Queen Limousine and Services, within 48 hours before the service.
Cost for this service is € 15,00+iva per seat for up to two, all our baby seat are approved by law.
Please also be advised that the Italian law provides for obligation of baby seat in the front seat and in rear seat only if accompanied and supported by adult person at least 16 years old.
Anyway, Queen Limousine and Services recommend always the use.

Policy di erogazione dei servizi

Le policy di erogazione dei servizi sono riportate nel contratto.
È responsabilità del Cliente informare correttamente i passeggeri sul contenuto del contratto che regola l'erogazione dei servizi.

Policies of providing the services

The policies of providing the services are provided in the contract.
It is responsibility of the Customer to properly inform passengers about the contents of the contract that governs the delivery of services.

Salita e discesa passeggeri

La salita e la discesa dei passeggeri sarà operata il più vicino possibile agli indirizzi richiesti, compatibilmente con il mezzo utilizzato e la viabilità locale (porti, aree pedonali, limitazioni temporanee, ecc).
Si noti che i veicoli con più di 8 pax + l'autista, sono sottoposti a particolari restrizioni di viabilità e che i permessi ZTL e similari non permettono di superare le suddette restrizioni.
La Queen Limousine and Services non può essere ritenuta responsabile per limitazioni imposte alla viabilità dalle autorità locali.

Pick-up and drop-off passengers

The pick-up and drop-off of the passengers will be arranged in the place nearest the addresses requested, consistent with the vehicle used and the local traffic restrictions (ports, pedestrian areas, temporary restrictions, etc)
Please note: the vehicles for more than 8 pax + driver are subject to more traffic restrictions and the ZTL permits and similar cannot override these restrictions.
Queen Limousine and Services can not be held responsible for the traffic restrictions imposed by local authorities.

Contatti booking

Booking contacts

E-mail: booking@queenlimousine.com
Phone: +39 06 65 90 815 (9:00am - 01:00pm 3:00pm - 7:00pm)
Fax: +39 06 89 28 04 87

Booking office
Queen limousine and services s.r.l.

Message

From: Susan Butler [sbutler@capitolresourcesllc.com]
Sent: 6/12/2017 5:20:24 PM
To: Mandy McGrevey Gunasekara [Personal Email / Ex. 6]; Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: FW: small refinery hardship
Attachments: 2016OmnibusAppropriations.pdf

Hi! Do you have a few minutes we could talk about small refinery hardship? I want to be sure changes we request in FY18 approps are what is needed going forward per our conversation. We meet with DOE this Friday and then have Ergon on the Hill the week after.

I think we should request the following changes to the energy and water language: (previously passed language attached)

1) Take out the "50% " waiver language
2) Require the scoring of the structural metrics DOE currently does not score (local market acceptance of E85 and biodiesel, biodiesel and other advanced biofuels blending and the net revenue or cost of RINS)
3) Clarify that the refining margins metric reflects transportation fuels only

I just want to be sure I'm not missing something from your perspective. Thanks so much, Susan

---

From: Susan Butler
Sent: Tuesday, June 6, 2017 5:19 PM
To: gunasekara.mandy@epa.gov
Subject: small refinery hardship

Hi! I have thought about you so much with the Paris decision – I'm sure you have been in the middle of it!

You were incredibly gracious to meet with both our small refinery coalition and Ergon. Your insight was so helpful. As we approach the FY 18 bill on the hill, I would very much appreciate your input.

Please let me know if you have time for me to come by for another quick meeting focused just on that, coffee, a quick lunch, a call or a more specific email exchange -- and I'll follow up accordingly!

Henry Barbour, LeAnn Johnson Koch (Ergon attorney) and I are meeting with DOE 6/16 – Brian McCormick and Tristan Abbey. I want to discuss the metrics DOE *doesn't* score with them as well as understand Ergon's score on "other business lines besides refining and marketing." (they were scored as having other business lines which the refinery doesn't.)

Any chance you'll be at MS on the Mall? We will be. Hope all is going well - I know you are juggling!! Best, Susan

Susan Butler
Capitol Resources LLC
915 Prince Street
Alexandria, VA 22314
(703)739-5860 (office)
(703)298-2826 (cell)

Xerox

DIVISION D—ENERGY AND WATER DEVELOPMENT AND RELATED AGENCIES APPROPRIATIONS ACT, 2016

The following statement to the House of Representatives and the Senate is submitted in explanation of the agreed upon Act making appropriations for energy and water development for the fiscal year ending September 30, 2016, and for other purposes.

The language and allocations set forth in House Report 114–91 and Senate Report 114–54 carry the same emphasis as the language included in this explanatory statement and should be complied with unless specifically addressed to the contrary herein. Report language included by the House that is not changed by the report of the Senate or this explanatory statement and Senate report language that is not changed by this explanatory language is approved. This explanatory statement, while repeating some report language for emphasis, does not intend to negate the language referred to above unless expressly provided herein. In cases where the House or the Senate has directed the submission of a report, such report is to be submitted to the Committees on Appropriations of both Houses of Congress. House or Senate reporting requirements with deadlines prior to or within 15 days of the enactment of this Act shall be submitted no later than 60 days after the enactment of this Act. All other reporting deadlines not changed by this explanatory statement are to be met.

Funds for the individual programs and activities within the accounts in this Act are displayed in the detailed table at the end of the explanatory statement for this Act. Funding levels that are not displayed in the detailed table are identified in this explanatory statement.

In fiscal year 2016, for purposes of the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99–177), the following information provides the definition of the term "program, project, or activity" for departments and agencies under the jurisdiction of the Energy and Water Development Appropriations Act. The term "program, project, or activity" shall include the most specific level of budget items identified in the Energy and Water Development Appropriations Act, 2016 and the explanatory statement accompanying the Act.

National Ocean Policy.—The agreement does not include section 505 of the House bill regarding the National Ocean Policy. No specific funding was provided in fiscal year 2015 and none was requested by any agencies funded in this Act in fiscal year 2016 to implement the National Ocean Policy. Consequently, no specific funds for National Ocean Policy activities are included for any agency funded in this Act.

TITLE 17 INNOVATIVE TECHNOLOGY LOAN GUARANTEE PROGRAM

The agreement provides $42,000,000 for administrative expenses for the Title 17 Innovative Technology Loan Guarantee Program. This amount is offset by estimated revenues of $25,000,000, resulting in a net appropriation of $17,000,000.

The Department is directed to continue to provide to the Committees on Appropriations of both Houses of Congress quarterly reports on the status of the Cape Wind conditional commitment, including an update on ongoing litigation and the risks this litigation poses to the success of the project.

ADVANCED TECHNOLOGY VEHICLES MANUFACTURING LOAN PROGRAM

The agreement provides $6,000,000 for the Advanced Technology Vehicles Manufacturing Loan Program.

DEPARTMENTAL ADMINISTRATION

The agreement provides $130,971,000 for Departmental Administration.

Small Refinery Exemption.—Under section 211(o)(9)(B) of the Clean Air Act, a small refinery may petition the Environmental Protection Agency (EPA) Administrator for an exemption from the Renewable Fuel Standard (RFS) on the basis that the refinery experiences a disproportionate economic hardship under the RFS. When evaluating a petition, the Administrator consults with the Secretary of Energy to determine whether disproportionate economic hardship exists. According to the Department's March 2011 Small Refinery Exemption Study, disproportionate economic hardship must encompass two broad components: a high cost of compliance relative to the industry average disproportionate impacts and an effect sufficient to cause a significant impairment of the refinery operations viability.

If the Secretary finds that either of these two components exists, the Secretary is directed to recommend to the EPA Administrator a 50 percent waiver of RFS requirements for the petitioner. The Secretary is also directed to seek small refinery comment before making changes to its scoring metrics for small refinery petitions for RFS waivers and to notify the Committees on Appropriations of both Houses of Congress prior to making any final changes to scoring metrics.

The conference report accompanying the Energy and Water Development and Related Agencies Appropriations Act, 2010, addressed similar issues and directed the Secretary to redo an earlier study done to evaluate whether the RFS program imposes a disproportionate economic hardship on small refineries. In calling for the Secretary to redo the study, the conference report cited the lack of small refinery input into the earlier study, concerns about regional RFS compliance cost disparities, small refinery dependence on the purchase of renewable fuel credits (RINs), and increasing RIN costs. Since then, the dramatic rise in RIN prices has amplified RFS compliance and competitive disparities, especially where unique regional factors exist, including high diesel demand, no export access, and limited biodiesel infrastructure and

production. In response to recent petitions, the Secretary determined that the RFS program would impose a disproportionate economic and structural impact on several small refineries. Despite this determination, the Secretary did not recommend, and EPA did not provide, any RFS relief because it determined the refineries were profitable enough to afford the cost of RFS compliance without substantially impacting their viability. The Secretary is reminded that the RFS program may impose a disproportionate economic hardship on a small refinery even if the refinery makes enough profit to cover the cost of complying with the program. Small refinery profitability does not justify a disproportionate regulatory burden where Congress has explicitly given EPA authority, in consultation with the Secretary, to reduce or eliminate this burden.

OFFICE OF THE INSPECTOR GENERAL

The agreement provides $46,424,000 for the Office of the Inspector General.

ATOMIC ENERGY DEFENSE ACTIVITIES
NATIONAL NUCLEAR SECURITY ADMINISTRATION

The agreement provides $12,526,512,000 for the National Nuclear Security Administration (NNSA). In lieu of direction in the Senate report, the agreement includes language addressing the Consolidated Emergency Operations Center, which will contain the Energy Resilience and Operations Center, in an earlier section.

Budget Structure Changes.—The agreement provides funding for Weapons Activities consistent with the budget structure in the House report. The NNSA is specifically prohibited from requesting any further changes to the budget structure provided in this Act unless the NNSA has obtained agreement in advance from the Committees on Appropriations of both Houses of Congress.

Laboratory Directed Research and Development.—In light of the report of the Commission to Review the Effectiveness of the National Energy Laboratories, the Secretary is directed to provide a report on the impact of burdening Laboratory Directed Research and Development and provide recommendations on legislative changes to address the Commission's findings.

WEAPONS ACTIVITIES

The agreement provides $8,846,948,000 for Weapons Activities.

Life Extension Programs and Major Alterations.—The NNSA is directed to clearly account for all costs of any major multi-year stockpile refurbishment activity with a total cost greater than $1,000,000,000 and shall ensure a formal and comprehensive acquisition management plan is in place to manage such efforts. All reporting and other requirements required by the Committees on Appropriations of both Houses of Congress for "Life Extension Programs" shall also apply to any major multi-year stockpile refurbishment activity with a total cost greater than $1,000,000,000.

Message

From: Caron De Mars Personal Email / Ex. 6
Sent: 6/12/2017 5:09:41 PM
To: booking@queenlimousine.com
CC: Kasman, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=419892c6fdc74087b775abb683821344-MKasman]; Federica Signoretti [SignoretF@state.gov]; Michael Lee [LeeMD2@state.gov]; Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]; Dravis, Samantha [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ece53f0610054e669d9dffe0b3a842df-Dravis, Sam]
Subject: Change in pickup time- Dravis and Gunesakara from 7:40am to 9am
Attachments: mime-attachment; Queen booking 13.06.2017 #005225639

Message

From: Caron De Mars Personal Email / Ex. 6
Sent: 6/12/2017 4:53:56 PM
To: booking@queenlimisine.com
CC: Michael Lee [LeeMD2@state.gov]; Kasman, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=419892c6fdc74087b775abb683821344-MKasman]; Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]; Dravis, Samantha [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ece53f0610054e669d9dffe0b3a842df-Dravis, Sam]
Subject: Queen booking 13.06.2017 #005225639

Dear Queen Limousine,

Please pick up Samantha Dravis and Amanda Gunaskara at 900 (9:00 am) rather than 0740 (7:40 am) from the Baglioni Regina to FCO- they are on Delta 0445 at 12:30.

Grazie mille, Caron De Mars, U.S. Embassy

Sent from my iPhone

Message

From: Manley, Bret [BManley@aar.org]
Sent: 6/14/2017 7:38:01 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Thank you!

Mandy,

Thanks for taking the time today! Let me know if you need anything else from us.

Additionally, I would love to be introduced to Sarah Greenwalt so that we can come in and meet with her regarding Coal Dust.

Best,

Bret

Bret Manley
AVP – Government Affairs
Association of American Railroads
Office: 202-639-2538
Cell: 510-541-0384

Message

From: Stephanie Salmon Personal Email / Ex. 6
Sent: 6/8/2017 11:58:30 AM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Am Foundry Society - Meeting with Administrator Pruitt - June 20

Mandy
Good morning. Thanks again for connecting us with Sarah.
I wanted to reach out and give you a heads up that AFS member Charlotte Pipe and Foundry has arranged a meeting with Administrator Pruitt at 1:30 pm on June 20. There will be a small group of foundries attending the meeting.
Do you know if you will be part of this meeting? If not, any chance we could meet with you on Wed., June 21 on foundry issues?

Look forward to hearing back from you.
All the best,
Stephanie

Stephanie Salmon I Vice President Government Affairs I **American Foundry Society – Washington Office**
25 Massachusetts Ave, NW - Suite 800 I Washington, D.C. 20001
Ofc: 202-452-7135 - Cell: 571-242-0186 I ssalmon@afsinc.org

From: Stephanie Salmon Personal Email / Ex. 6
Sent: Monday, May 8, 2017 1:42 PM
To: Gunasekara.Mandy@epa.gov
Subject: Meeting Request with Sarah Greenwalt from Plumbing Manufacturers Intl for week of May 22, 2017
Importance: High

Mandy
Great to run into you at National Airport last week. Hope your presentation went well in Florida!
As I mentioned, Plumbing Manufacturers International (Kohler, Moen, Delta Faucet, American Standard, Toto, Sloan Valve…) would like to meet with Sarah Greenwalt on a couple of water-related issues the week of May 22. (The attached letter describes the issues and serves as our formal meeting request). We know that you are all very busy. We would certainly appreciate your help in connecting us with Sarah.

Thanks so much. I'll be back in touch soon to set up a meeting with you and members of the Am Foundry Society.
Have a great week.
Stephanie

Stephanie Salmon
On behalf of Plumbing Manufacturers International

Potomac Government Relations
25 Massachusetts Ave., NW I Suite 800
Washington, D.C. 20001
Ofc: 202-452-7135 I Cell: 571-242-0186
Email: Personal Email / Ex. 6

From: Stephanie Salmon [mailto:ssalmondc@gmail.com]
Sent: Tuesday, April 18, 2017 12:48 AM
To: greenwalt.sarah@epa.gov
Cc: Mandy Gunasekara - EPA Gunasekara.Mandy@epa.gov; Jackson.Ryan@epa.gov
Subject: Meeting Request with EPA from Plumbing Manufacturers Intl for May 2017
Importance: High

Sarah
Good evening. On behalf of Plumbing Manufacturers International (PMI), we would like to request a meeting with you concerning water infrastructure and in particular, the EPA WaterSense program. In a time where each program at EPA is being carefully reviewed and budget decisions are being weighed, PMI believes the WaterSense program has demonstrably proven to be a sound investment of EPA's resources. This is a true public-private partnership, and an effort that requires the federal government to play a key facilitating role. Please find attached a formal letter to Administrator Pruitt highlighting our strong support for the WaterSense program and our request for a meeting.

PMI is the nation's leading trade association for plumbing product manufacturers. Its members produce 90 percent of the plumbing products sold in the United States and employ thousands of workers in over 70 locations in 25 states. Our member companies' plumbing products are found in the majority of homes, commercial buildings, schools, restaurants, manufacturing facilities, hospitals, and hotels across the nation.

We look forward to hearing back from you regarding our availability to meet in May. In the meantime, if you have any questions or need additional information, please do not hesitate to contact me.

Thanks,
Stephanie

Stephanie Salmon
On behalf of Plumbing Manufacturers International

Potomac Government Relations
25 Massachusetts Ave., NW I Suite 800
Washington, D.C. 20001
Ofc: 202-452-7135 I Cell: 571-242-0186
Email: ssalmondc@gmail.com

Message

From: Kelly Poole [kpoole@ecos.org]
Sent: 6/15/2017 2:38:23 AM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Invitation to Speak: ABA SEER 2017 Fall Conference

Hi Mandy,

On behalf of the American Bar Association, I would like to invite you to participate in the ABA Section of Environment, Energy, and Resources 2017 Fall Conference as a speaker during a panel discussion regarding Clean Air Act priorities under the current administration.

Conference Details:

- Panel title: *The Clean Air Act under the Trump Administration*
- The conference will be held at the Baltimore Marriott Waterfront Hotel.
- This panel is scheduled for the afternoon of Friday, October 20th.
- Speakers must submit a substantive paper for national CLE compliance. These papers are usually 5 - 10 pages long. A previously published paper, a paper put together by your organization or staff, or a paper jointly wtitten by the panel speakers may fulfill this requirement. There will be a best paper award given for original work at the conference, and the winning paper will be published.
- There will be two conference calls that will be scheduled by the moderator
- Panel Participants:
    - Moderator: Fatima Maria Ahmad, C2ES - Confirmed
      Speakers:
      - Emily Sanford Fisher, EEI - Confirmed
      - John Walke - NRDC - Confirmed

I look forward to hearing from you, and please let me know if you have any questions.

Best,

Kelly Poole, JD
Project Manager
Environmental Council of the States
50 F Street NW, Suite 350
Washington, DC 20001
202-266-4939
kpoole@ecos.org

Message

From: Andrea Hart [andrea@dcpyle.com]
Sent: 6/5/2017 4:32:06 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Fwd: Roundtable Follow-Up on NESHAP Alternative Testing Methods

Hi Mandy,

Below is an email from Steffan Johnson regarding Eramet's petition for alternative testing method. We are thankful for the quick turn-around on the determination and wanted to check if there is anything your office might need from us in preparation for the briefings. Thank you for continuing to be an ally to Eramet and Felman on this issue.

Thanks,

Andrea
--
Andrea W. Hart
General Counsel
Pyle & Associates
P.O. Box 3731
Washington, DC 20027-0231
(202) 333-8190
andrea@dcpyle.com
www.pyleandassociates.net

From: Johnson, Steffan [mailto:johnson.steffan@epa.gov]

Sent: Friday, June 02, 2017 3:57 PM
To: Laure Guillot
Cc: Segall, Robin; Wayland, Richard
Subject: Re: Eramet Marietta Inc. - Request for Approval of Alternative to Test Method

Dear Laurie,

Thank you for reaching out to us again.

We have made a determination, but as this approval came to the EPA administrator, we need to arrange briefings for upper level management and gain approval prior to releasing that to you.

I was hoping to get that to happen this week, but did not meet with success, timing wise.

We will send our official response as early next week as possible.

Sincerely,

Stef Johnson

Sent from my iPhone

On Jun 2, 2017, at 3:25 PM, "laure.guillot@erametgroup.com" <laure.guillot@erametgroup.com> wrote:

> Dear Steff and Robin,
>
> I was wondering if you had been able to make any decision regarding our request.
>
> I apologize for pressing for an answer but as we have a Board meeting next week
>
> I would like to inform our board members about our plan for compliance testing of our furnace 1 related installations in connection with the new NESHAP.
>
> Thanks again for your understanding
>
> Best regards
>
> ==========
>
> Laure Guillot
>
> Chief Executive Officer
>
> Eramet Marietta Inc.
>
> Tel: +1(740) 376-5914
>
> Mobile: +1 (740) 350-3798
>
> e-mail: laure.guillot@erametgroup.com
>
> ==========

From: Johnson, Steffan [mailto:johnson.steffan@epa.gov]
Sent: Wednesday, May 24, 2017 7:12 AM
To: Laure Guillot; Segall, Robin
Subject: RE: Eramet Marietta Inc. - Request for Approval of Alternative to Test Method

Dear Laure,

Thank you for conveying this, and while I would point out that an Alternate Monitoring procedure request such as that allowed through 63.8(f)(5) is not the same as an Alternate Test Method request, the latter being what you have made in application to our group, we do note the upcoming compliance date and we understand your sense of urgency.

While I cannot provide you with any details of our reply as yet, I am able to let you know that it is moving forward. Robin has prepared a draft response and that is under review by our internal stakeholders at this time. We are hoping to receive feedback and finalize that yet this week, then brief our Division management either late this week or early next week. Assuming that we receive no substantive request to modify the draft, we may be able to have that in your hands late next week.

With apologies for not being able to allow for an earlier disclosure, I assure you that this item is our groups top priority at this time.

Thank you for staying in touch with us, please feel free to reach out with additional questions as they arise.

My sincere regards,

Stef Johnson

Stef Johnson | Leader | Measurement Technology Group | Office of Air Quality Planning & Standards | U.S. Environmental Protection Agency | 109 T.W. Alexander Drive | E-143-02 |Research Triangle Park, NC 27711 | Desk: 919.541.4790 | Cell: 919.698.5096 | Fax: 919.541.0516

From: laure.guillot@erametgroup.com [mailto:laure.guillot@erametgroup.com]
Sent: Tuesday, May 23, 2017 6:10 PM
To: Segall, Robin <Segall.Robin@epa.gov>
Cc: Johnson, Steffan <johnson.steffan@epa.gov>
Subject: RE: Eramet Marietta Inc. - Request for Approval of Alternative to Test Method

Dear Robin,

As mentioned in my previous mail we are preparing for compliance tests for the building where our Furnace 1 is located. We worked with the commissioning of the installation all along last week and I am pretty satisfied with the result.

I understand from your mail of May 12 that we will know about your decision regarding our request as early as possible in June.

Time being critical I have been looking at the rules and I found that in 40 C.F.R. 63.8(f)(5)(i) there is a provision that reads QUOTE--*The Administrator will notify the owner or operator of approval or intention to deny approval of the request to use an alternative monitoring method within 30 calendar days after receipt of the original request [...]*--UNQUOTE

As we filed our request on April 28, I was wondering if this article applies to our case and thus if we would have a chance to know your answer in the course of next week.

Thank you for your understanding

Best regards

Laure Guillot

Chief Executive Officer

Eramet Marietta Inc.

Tel: +1(740) 376-5914

Mobile: +1 (740) 350-3798

e-mail: laure.guillot@erametgroup.com

Message

From: Sandei Pier Carlo [Sandei.PierCarlo@minambiente.it]
Sent: 6/11/2017 12:59:15 PM
To: A: G7emm [G7emm@minambiente.it]; Filyk, Greg (EC) [greg.filyk@canada.ca]; "DUMOULIN Virginie (Directrice des affaires européennes et internationales) - SG/DAEI" [virginie.dumoulin@developpement-durable.gouv.fr]; "BARGIARELLI Pascal (Chargé de mission) - SG/DAEI/CCDD3" [pascal.bargiarelli@developpement-durable.gouv.fr]; Sach, Karsten [Karsten.Sach@bmub.bund.de]; Schroeder, Marcus [Marcus.Schroeder@bmub.bund.de]; TAKESHI_SEKIYA@env.go.jp; SATORU_MORISHITA@env.go.jp; KEITARO_TSUJI@env.go.jp; Case, Cheryl (Defra) [cheryl.case@DEFRA.GSI.GOV.UK]; Corrigan, Tanya (DEFRA) [Tanya.Corrigan@defra.gsi.gov.uk]; Finman, Hodayah [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=92efbc05989a49ec874c24bb790a872c-Finman, Hodayah]; Cyril.LOISEL@ec.europa.eu; Luca.Marmo@ec.europa.eu; erin.silsbe@canada.ca; jacob.werksman@ec.europa.eu; Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Marguccio Stefano [Marguccio.Stefano@minambiente.it]; La Camera Francesco [Lacamera.Francesco@minambiente.it]; Ravazzi Aldo [Ravazzi.Aldo@minambiente.it]; PierCarlo Sandei [PierCarlo.Sandei@unep.org]; Pasella Daniela [Pasella.Daniela@minambiente.it]; Carlotta Demofonti [C.Demofonti@governo.it]; Luca Bergamaschi [L.Bergamaschi@governo.it]; A: G7logistica [G7logistica@minambiente.it]; Brunelli Giovanni [Brunelli.Giovanni@minambiente.it]; Fricano Federica [Fricano.federica@minambiente.it]; Negrin Alessandro [Negrin.Alessandro@minambiente.it]; Dell'Anno Benedetta [DellAnno.benedetta@minambiente.it]; Manzione Pierluigi [Manzione.Pierluigi@minambiente.it]; Castaldi Gionata [Castaldi.Gionata@minambiente.it]; Eboli Fabio [Eboli.Fabio@minambiente.it]; Molocchi Andrea [Molocchi.Andrea@minambiente.it]; Medaglia Carlo Maria [Medaglia.CarloMaria@minambiente.it]
Subject: Meeting today 18.15

Dear Colleagues,

on behalf of Francesco, I would like to inform you about a working level meeting today at 18.15 (as soon as the plenary session ends) in the same room we used yesterday

see you later

Pier Carlo

Message

From: Dave Flannery [Dave.Flannery@Steptoe-Johnson.com]
Sent: 6/12/2017 5:07:17 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Midwest Ozone Group

Mandy

I thought I should check with you to see if the dates we have offered for a meeting with Administrator Pruitt present enough alternatives for him to consider, or whether has he can offer other dates that might be more convenient to him.

I anticipate that there will be interest by several of the members of the Midwest Ozone Group in attending the meeting. Do see any problem with 8 to 10 representatives of MOG being present at the meeting?

Dave Flannery
Steptoe & Johnson PLLC
P.O. Box 1588, Charleston, WV 25326-1588
Overnight
Chase Tower, 8th Floor
707 Virginia Street, East, Charleston, WV 25301
O: 304-353-8171 F: 304-353-8183 C: 304-539-1458

dave.flannery@steptoe-johnson.com
www.steptoe-johnson.com

From: Dave Flannery
Sent: Friday, June 02, 2017 2:54 PM
To: 'Mandy Gunasekara (Gunasekara.mandy@epa.gov)'
Subject: Midwest Ozone Group

Mandy

Thanks for taking some time with me on May 31, 2017, to discuss the Midwest Ozone Group (MOG) and its interest in meeting with Administrator Pruitt to discuss both its Petition to Reconsider the CSAPR Update filed on December 23, 2016, and its Regulatory Reform comments filed on May 15, 2017. These documents (both of which are attached) describe MOG's concerns about the technical and legal issues associated with the modeling and development of the CSAPR Update and the general implementation of the ozone NAAQS. Among these concerns are the failure to have considered existing on-the-books control programs, the failure to have accounted for the effects of international emissions and the imposition of control requirements solely on electric generating units, resulting in prohibited "over control" of sources in many states.

MOG members and participants operate some 80,000 MW of coal-fired and coal-refuse fired generation in more than ten states. The members of and participants in the MOG include: American Coalition for Clean Coal Electricity, American Electric Power, American Forest & Paper Association, Ameren, Alcoa, ARIPPA, Associated Electric Cooperative, Citizens Energy Group, Council of Industrial Boiler Owners, Duke Energy, East Kentucky Power Cooperative, FirstEnergy, Indiana Energy Association, Indiana Utility Group, LGE / KU, Ohio Utility Group, Olympus Power, and the Springfield (IL) City Water, Light & Power.

Dates that are available for a meeting with the Administrator include:

June 12, 13, 14, 15, 19, and 20.
July 11, 12, 13, 14, 24, 25, 26, and 27.

If need anything more from us related to the scheduling of this meeting, please let me know.

Dave Flannery
Steptoe & Johnson PLLC
P.O. Box 1588, Charleston, WV 25326-1588
Overnight
Chase Tower, 17th Floor
707 Virginia Street, East, Charleston, WV 25301
O: 304-353-8171 F: 304-353-8183 C: 304-539-1458

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Message

From: Women Rule [womenrule@politico.com]
Sent: 6/9/2017 2:28:40 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: You're Invited | A Special Women Rule Investigation Launch

Dear Mandy,

On behalf of POLITICO, Google and the Tory Burch Foundation, we invite you to join us on June 20th for a special event and conversation marking the launch of a major POLITICO investigation exploring women's political leadership. Please find the official invitation below.

We do hope you can join us on the 20th. Kindly RSVP to the event here.

Best,

Women Rule

Women Rule is produced by POLITICO in partnership with Google and the Tory Burch Foundation. To learn more about Women Rule, please visit www.politico.com/WomenRule.

POLITICO Google TORY BURCH FOUNDATION

invite you to join

WOMEN RULE

for a special event and conversation marking the launch of a major POLITICO investigation exploring women's political leadership

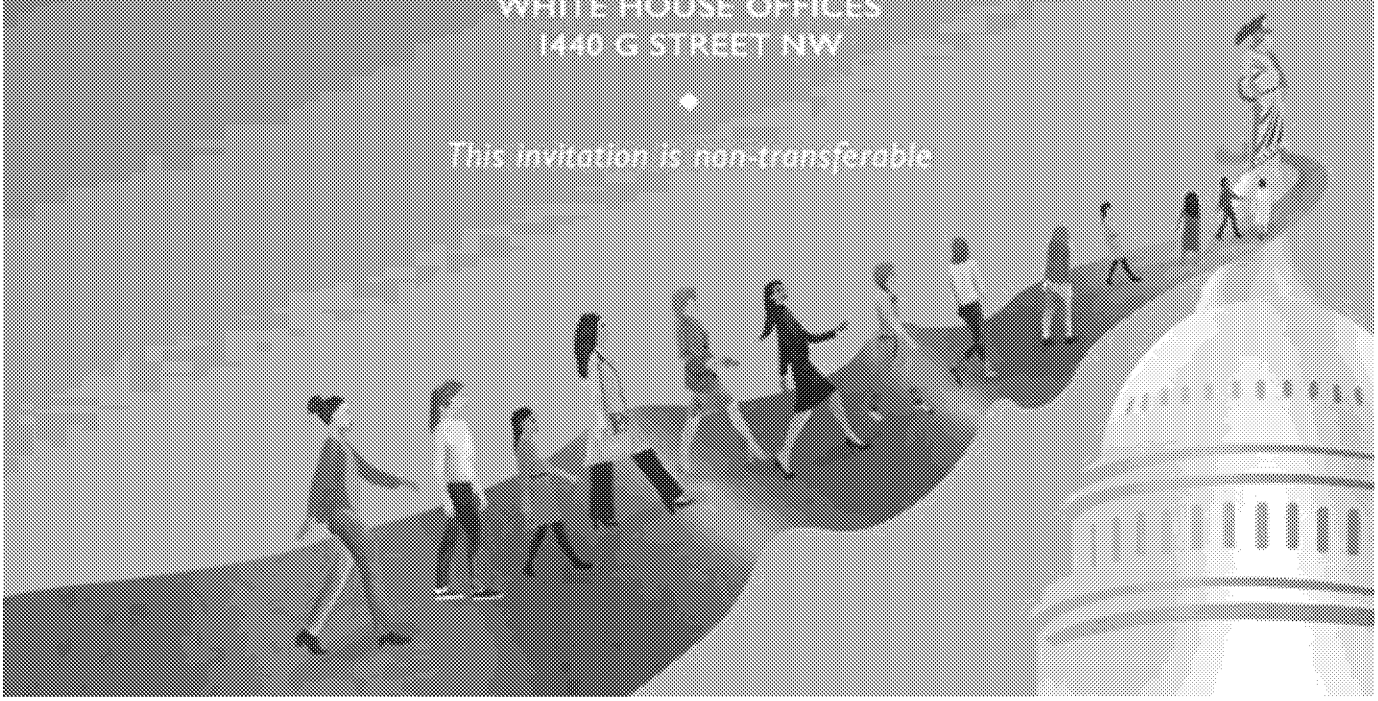
Networking, wine and hors d'oeuvres to follow

TUESDAY, JUNE 20 | 6:00 - 8:00 PM

wework

WHITE HOUSE OFFICES
1440 G STREET NW

This invitation is non-transferable



Message

From: Spencer, Stuart [SPENCER@adeq.state.ar.us]
Sent: 6/12/2017 4:58:20 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: ADEQ letter re: intent to submit Regional Haze SIP

Oh wow. Italy? How nice! Yes, a call this week when you get back would be great.

Thanks!

Stuart

-----Original Message-----
From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Wednesday, June 07, 2017 5:44 PM
To: Spencer, Stuart
Subject: Re: ADEQ letter re: intent to submit Regional Haze SIP

Thanks, Stuart.
I'm at the G7 in Italy until Tuesday. Would it work to call you sometime next week? I'm back in Wednesday.
Best,
Mandy

Sent from my iPhone

> On Jun 7, 2017, at 11:59 PM, Spencer, Stuart <SPENCER@adeq.state.ar.us> wrote:
>
> Mandy,
>
> I hope you're doing well. It's been a while since we talked last. I wanted to make you aware of a letter we (ADEQ) sent today to Region 6 regarding our intent to submit a SIP(s) to submit the current Regional Haze FIP. I'll give you a call tomorrow to follow-up on information in the letter.
>
> Thanks!
>
> Stuart
>
> From: Spencer, Stuart
> Sent: Wednesday, June 07, 2017 4:41 PM
> To: Coleman.Sam@epa.gov; Stenger, Wren (stenger.wren@epa.gov); Donaldson, Guy (Donaldson.Guy@epa.gov)
> Cc: Nann, Barbara (nann.barbara@epa.gov); Montgomery, William
> Subject: ADEQ letter re: intent to submit Regional Haze SIP
>
> Sam, Wren, and Guy-
>
> Please find attached the long-awaited ADEQ letter detailing our intent to submit a SIP(s) regarding the disapproved portions of our initial SIP submittal. Let me know if you have any questions regarding its content. And most important, thank you for the continued engagement!
>
> Stuart
>
>
>
> <doc03166220170607163157.pdf>

Comprehensive Environmental Response, Compensation and Liability Act
Recommendations for Improvement through Administrative Reform
Olin Corporation
June 6, 2017

This white paper presents recommendations for improvement related to the current governance and administration of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and its subsequent reauthorizations on a Regional basis within the U. S. Environmental Protection Agency (hereinafter "USEPA"). We support the vision of the current USEPA Administrator, Scott Pruitt, to implement reform with the Agency that allows PRPs to comply with their legal obligations in a cost effective manner and in a way that maintains equitable corporate competition along with the integrity of environmental stewardship. To that end, our recommendations are expressed below.

Our Company, Olin Corporation (hereinafter "Olin"), has been in business since 1892 and a member of the New York Stock Exchange for 75 years. Given our long history of manufacturing and providing goods that enable public enjoyment and everyday convenience, we have made it one of our top priorities to serve as a responsible steward of the environment through on-going compliance with current laws and regulations. Olin has extensive experience with investigation and remediation of legacy sites throughout the United States. Over the course of the last several years, however, we have experienced a palpable change in the regional administration of CERCLA. The U. S. Congress enacted CERCLA to provide the USEPA with broad authority in an effort to streamline the investigation and clean-up of impacted sites. To be sure, that broad authority has given rise to improvements in the quality of environmental media in many cases; however, it has also given rise to the propensity of some management-level individuals to abuse Congressional authority and to pursue agendas that are not conducive to the rational management of large, complex remediation projects.

Our specific recommendations are presented below:

1. USEPA **must** use sound science, due process, and appropriate site specific data to reach sustainable and cost-effective decisions which do not levy unnecessary financial burden;
2. USEPA **must** direct its regional CERCLA management structure to work with U. S. industry within the broad bounds of CERCLA authority to not only meet environmental regulatory requirements but to do so in a way that enables fair and well-informed negotiation of efficient and cost-effective remedial decisions;
3. USEPA **must** enable its project-level and sub-regional managers to control their internal project teams as well as third-party oversight contractors more appropriately to streamline the CERCLA process from standpoints of both time and cost;
4. USEPA **must** consider the cost of remediation coupled with a meaningful and corresponding reduction in human and ecological risk;
5. USEPA **must** consider the benefit of containment rather than removal of environmental impacts when appropriate, and;
6. USEPA **must** review and consider the overlapping and competing aims of regulations when they allow more cost effective and technically effective solutions.

Use of Sound Science in Remedial Decisions

Our recent experience has indicated that USEPA Remedial Project Managers (hereinafter "RPMs") and their immediate management have directed our project teams to execute our projects in a way that is based more on perceived (or real) internal liability and public emotion rather than sound science and collection and use of appropriate data. This certainly puts the integrity of the CERCLA process at risk. As a single example out of many, we have been told recently by Regional Management staff, while actively engaged in completion of an RI/FS, to eliminate risk assessment from our scope of work in an effort to move the project forward more quickly to the implementation of a predetermined remedy. Their idea of appropriate time frame is arbitrary and capricious. It is unconscionable that the remedy for the referenced project site will likely be tens of millions of dollars and USEPA has asked us to make decisions at that level of spending with no risk assessment. To be fair, we countered their direction and they have asked us to conduct a risk assessment for a single compound with a single exposure scenario when cumulative risk calculations will necessarily be required at this site to gain a proper understanding of human and ecological risk. This direction, and their predetermined remedy decision, is in direct conflict with the terms of the National Contingency Plan (NCP) and the long-accepted practices of risk assessment that our efforts are based on. We believe this direction is precipitated by an ill-informed public advocacy group and USEPA representation on the referenced project is not willing to stand up and move forward with the project in a reasonable manner that includes consideration of all data that has been collected for the project to date. This is also a clear indication of the abuse of legislative authority that we have experienced.

Fair Negotiation with U. S. Industry

The US environmental regulatory framework often imparts a business disadvantage compared with our competitors in other countries by requiring unnecessary or overreaching remedial actions. While we understand and actively support responsible environmental stewardship, those that are placed in positions of regulatory responsibility should work to mitigate unacceptable risk and implement clean-up scenarios that rely upon human and ecological risk, community protection, and cost as primary inputs. In too many cases, USEPA requires industry to pursue investigations or actions which do not materially reduce human health or ecological risk nor increase community protectiveness. Likewise, USEPA often takes aim at remediation scenarios that require remediation for the sake of remediation rather than those that present the most technically justifiable, cost effective, and protective solutions for mitigating unacceptable risk. This again results in an overreach of legislative authority and creates an imbalance in global competition.

Project Management and Control

A significant impediment to successful remedial implementation is abuse of the process by third party oversight contractors and USEPA's inability and/or unwillingness to manage these contracts appropriately. We have been told by USEPA RPMs that "they cannot do anything to manage their oversight contractors." Apparently, many USEPA RPMs are unwilling to accept the responsibility of properly directing an oversight contractor. In many cases, we have experienced oversight contractors who are not motivated to move the project closer to completion. This system is flawed on a motivational level; this issue presents itself with alarming regularity.

We have experienced the same issue with USEPA RPMs failing to manage their own internal teams. At most environmental sites, an effective remedy can be identified without an endless do-loop of document preparation, regulatory review and comment, and response to comment. USEPA RPMs must be required to efficiently advance their projects rather than simply corral the thoughts of others within the Agency (or Agencies) and thereby never make a final decision.

An added cost passed on by USEPA to PRPs is the indirect costs associated with USEPA management and office operations. The indirect cost multiplier is applied to every line in USEPA cost recovery/oversight bills. The indirect cost multiplier varies by USEPA region and has increased annually from 30% to over 100% for some regions. These high levels of indirect costs point to excessive administrative costs and multiple levels of management. Reduction in levels of management would reduce costs and likely reduce time required for management reviews of decisions and responses. Consolidation of administrative functions particularly across multiple regions could further reduce indirect costs.

Cost Benefit of Remedial Alternatives

CERCLA requires that any remedial action that is selected must be "cost-effective." As U.S. EPA stated in its Superfund Guidance, "cost-effectiveness is concerned with the reasonableness of the relationship between the effectiveness afforded by each alternative and its costs compared to other available options." A range of remedial alternatives are typically developed for a contaminated site. Frequently the evaluation is based on the level of future risk expected following implementation of that alternative. This comparison should also include an evaluation between alternatives of the differential in cost versus the reduction in risk. Alternatives which offer only marginal reductions in risk with substantial cost increases should be ranked lower than other alternatives. Failure to adequately evaluate the cost-effectiveness proportionality requirement of proposed remedies as required by CERCLA and the NCP can result in catastrophic impact at large sites.

Preference for Removal over Containment

USEPA's preference for removal over containment can significantly increase remedial costs. Historically, USEPA has directed removal over containment of contamination. In recent years, containment has been demonstrated to be an effective, long term solution at a significantly lower cost than removal, especially when there is no foreseeable risk to human health or the environment. Containment technology has improved and expanded over recent years. Containment, coupled with long term monitoring and maintenance, make containment an acceptable and effective long term alternative.

Overlapping and Competing Environmental Regulations

Environmental sites can fall under both CERCLA and the Resource Conservation and Recovery Act (RCRA). When this occurs, differing requirements of the two programs increase the expense, time, and complexity to remediate a site. Both programs have the same basic goal – protection of human and ecological health. RCRA is focused on reduction of exposure to human and ecological receptors and allows (and in many cases encourages) alternatives that provide containment and isolation. Superfund is focused on restoring the site to conditions that meet all cleanup standards (or site restoration). For example, RCRA finds it acceptable to contain groundwater contamination to prevent risk while Superfund requires cleanup to groundwater standards.

Conclusion

Industry cannot afford to make decisions on anything less than sound scientific principles and site-specific data, under the oversight of reasonable and fair management of USEPA regulatory staff. We are quite interested in reform with the USEPA that would 1) put an emphasis on reliance upon science and data, 2) foster an environment of fair negotiation to address actual protection of community, human health, and ecology, 3) mandate appropriate project management to mitigate the misuse of third party contractors and internal technical resources and 4) management of oversight costs including the ever increasing proportion of regional indirect costs.

Message

From: Thaker, Rahul [rahul.thaker@ncdenr.gov]
Sent: 6/2/2017 2:33:54 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: FW: Panel Session Summary - A&WMA's Annual Conference, Pittsburgh, PA, June 5-8, 2017
Attachments: Sorted EPA List from ACE 2017 Registration List.xlsx

Importance: High

Mandy:

I have attached a sorted list for all EPA attendees at this conference. It looks to me that a total of ten EPA employees are registered to attend this conference.

If you want to use this list (if you do not have any success yet in recruiting one of EPA's Deputy General Counsels or anyone else from EPA for this session), specifically, if anyone from this list would be a good fit for this CPP litigation matter session. Let me know soon if you think that I should try anyone particular from this list. If you believe that you can contact someone suitable and get a quick conformation, that would be much appreciated.

I am short of time and anything you can do to help us that would be great.

Look forward to hearing from you soon.

Thank you.

Rahul

From: Thaker, Rahul
Sent: Friday, May 26, 2017 12:15 PM
To: 'Gunasekara, Mandy' <Gunasekara.Mandy@epa.gov>
Subject: RE: Panel Session Summary - A&WMA's Annual Conference, Pittsburgh, PA, June 5-8, 2017
Importance: High

Thank you Mandy for the information and I understand your situation. Good luck with your trip.

I definitely want EPA presence. It definitely helps in my session. We do want to hear what the new EPA under the Trump administration thinks about this CPP program going forward and its litigation, etc. Please certainly pursue your colleague and recruit one for me.

Please let me know the name and contact information of your colleague as soon as possible, and forward all pertaining email information I have sent to you to him/her.

Thanks again for all your help..

Rahul

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Friday, May 26, 2017 12:05 PM
To: Thaker, Rahul <rahul.thaker@ncdenr.gov>
Subject: Re: Panel Session Summary - A&WMA's Annual Conference, Pittsburgh, PA, June 5-8, 2017

Hi Rahul,

I apologize for the late notice and any associated inconvenience, but I've been pulled into the G7 trip with the Administrator and we will be heading out of the country on June 5, so I will not be able to attend the panel discussion.

Please let me know if you need additional information. Would it be helpful if I can find a colleague to fill in? One of our deputy general counsels may be available.

I do appreciate the opportunity and again, apologize for any inconvenience.

Best,
Mandy

Sent from my iPhone

On May 22, 2017, at 10:15 AM, Thaker, Rahul <rahul.thaker@ncdenr.gov> wrote:

Tauna, Mandy, and Lissa:

I am summarizing below information you need for the panel session on Clean Power Plan (CPP) Litigation Updates and Road Ahead, at the subject conference:

(i) The panel session timing is Thursday, June 8th, 8 am - 9:40 am. There will be a total of four panelists as below:

Mandy Gunasekara
Senior Policy Advisor, Office of the Administrator, EPA, Washington, D.C.
[providing EPA perspectives]

State Environmental Agency Official
[providing state agencies' perspectives, still in process of confirming the panelist, probably from PA environmental agency]

Tauna M. Szymanski
Senior Attorney, Hunton & Williams, Washington, D.C.
[providing electric power generation industry perspectives]

Lissa Lynch
Climate Litigation Fellow, Natural Resources Defense Council, Washington, D.C.
[providing environmental organizations' perspectives]

Each panelist will have a 20 minutes maximum for presentation. You need to talk / present on the assigned task as above, providing perspectives and latest information on various issues in this litigation. You need to also provide viewpoints on road ahead for everyone on this matter. You can also talk anything else if it is pertinent to this topic and if you have time available. You can have slides for presentation, but, it is not mandatory. The order of presentations will be as above. There will be a Q&A at the end of the session. The session abstract is attached with this message for your use.

(ii) The conference web page is https://www.awma.org/ace2017.

If you have not yet registered for the conference, please take care of it via the above page. If you are to come to this session only and do not attend any other sessions at the conference, it is possible to get a conference registration fees waiver.

In addition, the hotel accommodation information, technical program, etc. are also located at the same website.

(iii) I will be in Pittsburgh for the entire conference. If you need to contact me in Pittsburgh, my cellular number is **Personal Phone / Ex. 6**

(iv) If you are to have slides for your presentation, please remember to email me by June 2nd. Also, please send me your bio-sketch (1-2 paragraphs would be sufficient) by the same date, which would help in introducing you at the conference.

In summary, I thank each of you for your participation. I am delighted to have you on the panel. But, importantly, the conference attendees would benefit from your expert viewpoints.

Let me know if you have any other questions or if I can help.

Rahul

Rahul P. Thaker, P.E., QEP
Environmental Engineer
Division of Air Quality, Permitting Section
North Carolina Department of Environmental Quality

919 707 8740 office/fax
rahul.thaker@ncdenr.gov

217 West Jones Street
1641 Mail Service Center
Raleigh, NC 27699-1641

<image002.png>

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

<FINAL EXTENDED ABSTRACT.docx>

Message

From: Horton, Melissa H. [MHIGGINS@southernco.com]
Sent: 6/15/2017 6:56:45 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Fwd: Call

Is 2:45 still good? We've dialed in.

Melissa Horton
Southern Company
Federal Environmental Affairs
Washington, D.C.
Cell: 205-613-8320

On Jun 15, 2017, at 8:51 AM, MHIGGINS@southernco.com<mailto:MHIGGINS@southernco.com> wrote:

2:45 would be perfect. We can use conference call #

Melissa Horton
Southern Company
Federal Environmental Affairs
Washington, D.C.
Cell: 205-613-8320

On Jun 15, 2017, at 8:35 AM, Gunasekara, Mandy
<Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov>> wrote:

2:45 would work - is that late enough? Also, 5 pm.

-----Original Message-----
From: Horton, Melissa H. [mailto:MHIGGINS@southernco.com]
Sent: Thursday, June 15, 2017 8:33 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov>>
Subject: Re: Call

Thanks for the quick response. We had planned to walk over for the budget hearing during that time. Would anything later (or earlier) work for you? If not, we can make the earlier time work. Thank you and I'm looking forward to meeting you!

Melissa Horton
Southern Company
Federal Environmental Affairs
Washington, D.C.
Cell: 205-613-8320

On Jun 15, 2017, at 8:11 AM, Gunasekara, Mandy
<Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov><mailto:Gunasekara.Mandy@epa.gov>> wrote:

Good Morning,
I'm free from 1 or 1:30 this afternoon. Either of those times work for you?

-----Original Message-----
From: Horton, Melissa H. [mailto:MHIGGINS@southernco.com]
Sent: Thursday, June 15, 2017 7:49 AM
To: Gunasekara, Mandy
<Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov><mailto:Gunasekara.Mandy@epa.gov>>
Cc: Jackson, Ryan <jackson.ryan@epa.gov<mailto:jackson.ryan@epa.gov><mailto:jackson.ryan@epa.gov>>;
Black, Noel W. <NWBLACK@southernco.com<mailto:NWBLACK@southernco.com><mailto:NWBLACK@southernco.com>>
Subject: Call

Hi Mandy. If you're available, Noel and I would like to follow up with you today or tomorrow regarding the utility dialogue on Monday, June 19. Let us know if we can set up a call and what time might be best time. Thanks you.

Melissa Horton
Southern Company
Federal Environmental Affairs
Washington, D.C.
Cell: 205-613-8320

Message

From: Stanko, Joseph [jstanko@hunton.com]
Sent: 6/13/2017 1:11:26 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: When do you get back to DC?

Thanks,
Joe

HUNTON & WILLIAMS

Joseph Stanko
Partner
jstanko@hunton.com
p 202.955.1529
bio | vCard

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037
hunton.com

Message

From: E. Calvin Beisner [Calvin@cornwallalliance.org]
Sent: 6/13/2017 11:32:34 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: A Global Warming Red Team Warning: Do NOT Strive for Consensus with the Blue Team | Roy Spencer, PhD.

http://www.drroyspencer.com/2017/06/a-global-warming-red-team-warning-do-not-strive-for-consensus-with-the-blue-team/

E. Calvin Beisner, Ph.D.
Founder and National Spokesman
Cornwall Alliance for the Stewardship of Creation
9302-C Old Keene Mill Rd.
Burke, VA 22015
Cell 954-547-5370
www.CornwallAlliance.org

Message

From: Clifford, Brian (EPW) [Brian_Clifford@epw.senate.gov]
Sent: 6/2/2017 2:22:37 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]; Elsner, Brandon (Wicker) [Brandon_Elsner@wicker.senate.gov]; Clowser, Jessica (Fischer) [Jessica_Clowser@fischer.senate.gov]
Subject: RE: Bonjour

We warned them this could happen. I wonder if they remembered our meetings when this was announced.

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Friday, June 2, 2017 8:56 AM
To: Elsner, Brandon (Wicker) <Brandon_Elsner@wicker.senate.gov>; Clifford, Brian (EPW) <Brian_Clifford@epw.senate.gov>; Clowser, Jessica (Fischer) <Jessica_Clowser@fischer.senate.gov>
Subject: RE: Bonjour

So true

From: Elsner, Brandon (Wicker) [mailto:Brandon_Elsner@wicker.senate.gov]
Sent: Friday, June 2, 2017 8:53 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Clifford, Brian (EPW) <Brian_Clifford@epw.senate.gov>; Clowser, Jessica (Fischer) <Jessica_Clowser@fischer.senate.gov>
Subject: RE: Bonjour

Haha. If they would have only listened to us in the first place!

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Friday, June 2, 2017 8:12 AM
To: Clifford, Brian (EPW) <Brian_Clifford@epw.senate.gov>; Elsner, Brandon (Wicker) <Brandon_Elsner@wicker.senate.gov>; Clowser, Jessica (Fischer) <Jessica_Clowser@fischer.senate.gov>
Subject: Bonjour

Operation Green Elephant prevails!

Message

From: Gunasekara, Surya [Surya@mail.house.gov]
Sent: 6/2/2017 10:19:17 AM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Fwd: Is the Paris Agreement QTIIPS?

Surya G. Gunasekara
Chief of Staff
Congressman Renacci (OH-16)

Sent from my iPhone

Begin forwarded message:

From: Keith Hennessey <blog@keithhennessey.com>
Date: June 1, 2017 at 10:07:02 PM EDT
To: <surya@mail.house.gov>
Subject: Is the Paris Agreement QTIIPS?
Reply-To: Keith Hennessey <blog@keithhennessey.com>

Is the Paris Agreement QTIIPS?

Both President Obama's 2016 signing of the Paris Agreement on climate change and President Trump's withdrawal from that agreement today fit into a category I will label as **QTIIPS**.

QTIIPS stands for **Quantitative Trivial Impact + Intense Political Symbolism**.

QTIIPS policy changes provoke fierce political battles over trivially small policy impacts. Passionate advocates on both sides ignore numbers and policy details while fighting endlessly about symbols.

A policy change is **QTIIPS** if:

- its direct measurable effects are quite small relative to the underlying policy problem to be solved;
- it is viewed both by supporters and opponents as a first step toward an end state that all agree would be quite a large change;

- supporters and opponents alike attach great significance to the direction of the change, as a precursor to possible future movement toward that quantitatively significant end goal; and
- a fierce political battle erupts over the symbolism of this directional shift. This political battle is often zero-sum, unresolvable, and endless.

Advocates on either side of a QTIIPS policy change have desired end states that represent fundamentally different policy outcomes. But while the policy gap between their desired end states is measured in miles, on a QTIIPS policy, actual changes are measured in inches. The battle rages over which end state is the right one, but when policy shifts back and forth it changes direction often but moves only a tiny bit each time. Political constraints make the theoretical debate about miles-apart differences irrelevant because neither end state will ever occur, but that does not deter the theoretical war from raging during the real-world battles over a tiny actual change in direction.

If you listened to President Trump's remarks today you would think staying in the Paris Agreement would destroy the U.S. economy. If you listen to many advocates who support the agreement, you would think you need to start building an ark, soon.

I therefore read the text of the agreement to see for myself. Doing so reinforced the view I developed when the agreement was concluded. Relative to the scope of the problem it is trying to solve, the Paris Agreement is quantitatively trivial. It is a set of weak process agreements, with many areas of ambiguous language and "flexibility" for countries to reinterpret their only loosely binding quantitative commitments to reduce greenhouse gas emissions many years from now.

The national leaders who supported Paris, including President Obama, had a political interest in overselling their policy accomplishment. Similarly, President Trump has a political interest in selling today's move to his base as an enormous policy win, when to me it appears he is nullifying American participation in an agreement that on policy grounds was insignificant to begin with.

QTIIPS policy changes rest on the assumption that the first step is likely to lead to that theoretical quantitatively significant outcome. Most supporters of the Paris Agreement would privately concede that it is only a modest first step, and would then express hope that it could/will/might/should lead to further progress in the future. Opponents of the agreement

would share their fears that this first step could/will/might lead to an eventual outcome they fear.

But this shared assumption, of a first step or slippery slope, could easily be wrong. If the Paris Agreement were never to have led to a more significant next step, then a key premise of the fight is wrong. The intense political symbolism and the fierce battles waged over both President Obama's and President Trump's relatively small policy moves would then be unsupported by strong policy arguments.

I think that's the case here. I think Paris was not just the first step, I think it was likely the last step, that those who hoped it would lead to "deepening future commitments" were fooling themselves and others. I think Paris was agreed to only because national leaders realized it was impossible to get a numerically meaningful set of binding national commitments to reduce greenhouse gas emissions by specific large amounts. They therefore grabbed the best agreement they could, however weak, kicking the can down the road in the hope that somehow their successors might have more luck. Because I am so skeptical about the first step claim, and because I care far more about the policy impact than about the symbolism, my reaction is mild both to President Obama's signing in 2016 and to President Trump's withdrawal announcement today. I think neither agreeing to Paris nor withdrawing from it would have changed future global temperatures by any meaningful amount. Even before today I was skeptical that it would lead to any significant next steps, so I conclude that these symbolic battles about the Paris Agreement are almost meaningless.

A surprising dynamic often surrounds QTIPS policy changes—the most passionate supporters and opponents have a common interest in arguing that this particular policy change is enormously important, while downplaying the reality that its direct impact is barely measurable. These mortal opponents have a shared goal of hyping the issue and the battle. Issue advocates on both sides can generate political and financial support by convincing you this fight is important, even when it's not. If you hear advocates arguing fiercely about "what this policy change means more broadly" or "the precedent it sets for future action" or "what it says about us/America/society" rather than about "what it does" and "what effect it has," there is a good chance it is QTIIPS.

QTIIPS issues are unfortunately great fits for our modern advocacy, political, and communications structures. Everyone can virtue signal to their heart's content. No one has to

read the text of the policy change, look at the numbers, or ask hard questions of a relevant policy expert. Political tribes can inhabit their comfort zones and preach to the converted while heaping scorn and derision on the other tribe. Passion abounds while everyone ignores the policy nerds saying "Um… I think the actual effect here is too small to matter."

Q: Do you agree with me that agreeing to and withdrawing from the Paris Agreement are QTIIPS?

Q: What other hotly debated policy changes are QTIIPS?

How about the 2014 debate about banning immigration of refugees from Ebola-infected West African countries? Or the debate about incremental changes to gun laws? Or other hot-button social issues that dominate news cycles? Are they QTIIPS? Can you think of others?

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You are receiving this email because you signed up for my list!

Our mailing address is:
Keith Hennessey
P.O. Box 19724
Stanford, CA 94309-8936

Add us to your address book

Want to change how you receive these emails?
You can update your preferences or unsubscribe from this list

Message

From: Dave Flannery [Dave.Flannery@Steptoe-Johnson.com]
Sent: 6/2/2017 6:53:50 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Midwest Ozone Group
Attachments: Petition for Aministrative Reconsideration of the CSAPR Update.pdf; Regulatory Reform Comments.PDF

Mandy

Thanks for taking some time with me on May 31, 2017, to discuss the Midwest Ozone Group (MOG) and its interest in meeting with Administrator Pruitt to discuss both its Petition to Reconsider the CSAPR Update filed on December 23, 2016, and its Regulatory Reform comments filed on May 15, 2017. These documents (both of which are attached) describe MOG's concerns about the technical and legal issues associated with the modeling and development of the CSAPR Update and the general implementation of the ozone NAAQS. Among these concerns are the failure to have considered existing on-the-books control programs, the failure to have accounted for the effects of international emissions and the imposition of control requirements solely on electric generating units, resulting in prohibited "over control" of sources in many states.

MOG members and participants operate some 80,000 MW of coal-fired and coal-refuse fired generation in more than ten states. The members of and participants in the MOG include: American Coalition for Clean Coal Electricity, American Electric Power, American Forest & Paper Association, Ameren, Alcoa, ARIPPA, Associated Electric Cooperative, Citizens Energy Group, Council of Industrial Boiler Owners, Duke Energy, East Kentucky Power Cooperative, FirstEnergy, Indiana Energy Association, Indiana Utility Group, LGE / KU, Ohio Utility Group, Olympus Power, and the Springfield (IL) City Water, Light & Power.

Dates that are available for a meeting with the Administrator include:

June 12, 13, 14, 15, 19, and 20.
July 11, 12, 13, 14, 24, 25, 26, and 27.

If need anything more from us related to the scheduling of this meeting, please let me know.

Dave Flannery
Steptoe & Johnson PLLC
P.O. Box 1588, Charleston, WV 25326-1588
Overnight
Chase Tower, 17th Floor
707 Virginia Street, East, Charleston, WV 25301
O: 304-353-8171 F: 304-353-8183 C: 304-539-1458

dave.flannery@steptoe-johnson.com
www.steptoe-johnson.com

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Charleston, WV 25326-1588
(304) 353-8000 (304) 353-8180 Fax
www.steptoe-johnson.com

Writer's Contact Information

December 21, 2016

Via Federal Express
The Honorable Gina McCarthy
Administrator
U.S. Environmental Protection Agency
Mail Code 1101A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: EPA Docket No. EPA-HQ-OAR-2015-0500; Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS.

Dear Administrator McCarthy;

Please find enclosed the Petition for Administrative Review of the October 26, 2016 final rule: "Cross-State Air Pollution Rule Update for the 2008 NAAQS," EPA-HQ-OAR-2015-0050; FRL-9950-30-OAR; RIN 2060-AS05. This Petition for Administrative Review is being filed by the Midwest Ozone Group. The reasons for the petition for administrative review are set forth in the enclosed petition.

Please contact me as counsel for the Midwest Ozone Group, if you have any questions.

Very truly yours,

David M. Flannery
Counsel to the Midwest Ozone Group

Enclosure

BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

In the Matter of:

Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS;
(81 Fed. Reg. 74504 (Oct. 26, 2016); EPA Docket No. EPA-HQ-OAR-2015-0500)

Petition for Administrative Reconsideration of Updated Cross State Air Pollution Rule

December 21, 2016

A. INTRODUCTION.

On September 7, 2016, EPA finalized an update to the Cross-State Air Pollution Rule (CSAPR) for the 2008 ozone National Ambient Air Quality Standards (NAAQS) by issuing the final CSAPR Update, which was published October 26, 2016 at 81 FR 74504. Because of what Midwest Ozone Group (MOG) believes to be fatal technical and legal flaws in the CSAPR update rule which are described below, MOG requests that EPA reconsider the rule finalized on September 7, 2016.

MOG is an affiliation of companies, trade organizations, and associations which have drawn upon their collective resources to advance the objective of seeking solutions to the development of a legally and technically sound national ambient air quality program. It is the primary goal of MOG to work with policy makers in evaluating air quality policies by encouraging the use of sound science. As members of the business community, the MOG

membership also has a keen interest in assuring that policy makers are appropriately assessing the data and information required to accurately evaluate its emission control strategies. MOG members operate some 85,000 MW of fossil-fuel fired electric generating capacity.

The following are the specific grounds upon which MOG bases this request for reconsideration.

B. SPECIFIC GROUNDS.

1. EPA failed to give consideration to all emission reduction programs legally mandated to be in effect in 2017.

In its comments on the proposed CSAPR (80 FR 75706, December 23, 2016), MOG urged that EPA fully include in its base case modeling for 2017 all regulatory programs that were anticipated to be in effect in 2017 as well as those programs that *are* legally mandated to be in effect in 2017. Emission reductions mandated in 2017 include Connecticut RACT, NY-NJ-CT HEDD, OTC Model Control, Pennsylvania RACT II, Boiler MACT, and Tier 3 gasoline/Tier 2 vehicle programs. In the preamble to the final rule, EPA states that "[t]he future base case scenario modeled for 2017 includes a representation of changes in activity data and of predicted emission reductions from on-the-books actions, including planned emission control installations and promulgated federal measures that affect anthropogenic emissions," (81 FR 74527). EPA failed, however, to consider numerous emission reduction programs that are legally mandated to be in effect in 2017 but which did not meet EPA's "on the-books" test. This is highly problematic since many of these programs are legally mandated to be in place by 2017 and EPA's own modeling shows that the remaining nonattainment monitors in the East are very

nearly in attainment. Consideration of these legally mandated controls is essential to complying with the court mandated prohibition against over-control.

In the final rule, EPA estimated significant improvement in air quality in its base case modeling compared to modeling performed for the proposed rule. EPA's results set forth in the following chart illustrate that nothing more than re-running the CAMx model results in ozone improvement reductions at the four nonattainment monitors ranging from 0.8 ppb to 1.6 ppb. This step in updating the modeling predicts one of the four monitors to be below the attainment level of 75.9 ppb and the other three with ozone values in the range of 76.2 to 76.5 ppb.

	Proposed CSAPR Update Base Case Modeling for 2017	**Final CSAPR Update Base Case Modeling for 2017 (without PA RACT NOx controls)**	**Final CSAPR Update Base Case Modeling for 2017 (with PA RACT NOx Controls)**	**Final CSAPR Update Control Strategy Case Modeling for 2017 (considering final CSAPR budgets)**
Connecticut Fairfield (90013007)	77.1	75.5	75.3	75.0
Connecticut Fairfield (90019003)	78.0	76.5	76.3	76.0
Connecticut New Haven (90099002)	77.2	76.2	76.1	76.0
Wisconsin Sheboygan (551170006)	77.0	76.2	76.2	76.0

EPA then adjusted the CAMx modeling results to take account of the adoption of PA RACT II which was published on April 23, 2016. (See Preamble, 81 FR 74528.) EPA, however, only looked at the NOx reductions from EGUs that are part of that rule and did not consider at all the NOx reductions from other non-EGU categories or the VOC reduction component of PA RACT II. Even as to the NOx reductions considered, EPA did not actually model those

reductions. It instead applied a scaling tool (AQAT) which resulted in additional ozone improvements at the Connecticut monitors but only in the range of 0.1 to 0.2 ppb. (81 FR 74550) When MOG considered the impact of the PA RACT II NOx controls, it found ozone improvements that varied from 0.7 to 1.0 ppb – more than enough to bring all Connecticut monitors into attainment even without the EGU NOx reductions envisioned under the revised ozone season CSAPR. See: "Impact Analysis of Pennsylvania RACT II Rule on Downwind Monitor Ozone Concentrations" prepared by Alpine Geophysics which can be found at: http://midwestozonegroup.com/files/ImpactAnalysisofPennsylvaniaRACTII.pdf.

Remarkably, when EPA applied the control strategy it developed as the outcome of the CSAPR Update, the remaining three nonattainment areas in the East all achieved exactly the same predicted ozone concentration – 76.0 ppb – the lowest possible ozone concentration that would allow EPA to consider the monitors to be considered to be in nonattainment. The modeling results which accompany the final rule illustrate the dramatic impact that accounting for the new programs can have on air quality – with every nonattainment monitor being no more than 0.4 ppb above the attainment threshold for the 2008 ozone NAAQS. As will be discussed later, had EPA taken account of all of the emission reduction programs that are legally mandated to be in effect in 2017, it is likely that all nonattainment monitors would reach the attainment level of 75.9 ppb even using only AQAT to estimate the benefits of the EGU NOx reductions provided by PA RACT II. Given the impact of the rule on the generators and consumers of electricity, EPA has both a legal and technical obligation to re-examine its air quality modeling and to take full account of all such programs and requests that EPA reconsider its refusal to include all 2017 legally mandated updated air quality projections in its base case modeling.

The CAA addresses the affirmative obligations of the states to meet the deadlines for submittal and implementation of state implementation plans designed to specifically address their degree of nonattainment designation. Review of Section 172(c)(1) of the CAA provides that State Implementation Plans (SIPs) for nonattainment areas shall include "reasonably available control measures", including "reasonably available control technology" (RACT), for existing sources of emissions. Section 182(a)(2)(A) requires that for Marginal Ozone nonattainment areas, states shall revise their SIPs to include RACT. Section 182(b)(2)(A) of the CAA requires that for Moderate Ozone nonattainment areas, states must revise their SIPs to include RACT for each category of VOC sources covered by a CTG document issued between November 15, 1990, and the date of attainment. CAA section 182(c) through (e) applies this requirement to States with ozone nonattainment areas classified as Serious, Severe and Extreme.

The CAA also imposes the same requirement on States in ozone transport regions (OTR). Specifically, CAA Section 184(b) provides that a state in the Ozone Transport Region (OTR) must revise their SIPs to implement RACT with respect to all sources of VOCs in the state covered by a CTG issues before or after November 15, 1990. CAA Section 184(a) establishes a single OTR comprised of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont and the Consolidated Metropolitan Statistical Area (CMSA) that includes the District of Columbia.

The basic SIP components for nonattainment areas include: reasonable further progress (RFP) plan, RACT, reasonably available control measures (RACM), contingency measures, nonattainment new source review program, motor vehicle emissions budget and as applicable a variety of area-wide mobile source and stationary source control programs.

EPA undertook a partial examination of PA RACT II emission reductions after its CAMx modeling was completed. In doing so, EPA stated "the agency believes it is reasonable to evaluate the potential influence of the Pennsylvania RACT rule on the downwind receptor and state linkages identified in the final rule prior to evaluating any further NOx reductions for the CSAPR Update rule." (81 FR 74539)

A similar effort should be undertaken for the remainder of the PA RACT II controls and for all other legally mandated 2017 emission reduction programs. While EPA concluded that, as a result of the application of these selected emissions reductions, "no nonattainment or maintenance receptors ...dropped below 76 ppb...," (81 FR 74539), the fact is that every non-attainment monitor in the East (specifically in Wisconsin and Connecticut) was affected by this program and the reductions from this program alone dropped all modeled ozone concentrations to exactly 76.0 ppb. In justifying the final rule as not causing over-control, EPA relied significantly on its conclusion that final controls did not eliminate nonattainment. That conclusion is, of course, negated by any minor improvement in air quality at any of the non-attainment monitors in Fairfield CT., New Haven, CT., and Sheboygan WI., that are currently reporting values of 76.0, 76.0 and 76.0 respectively. The inclusion of any one of the other programs cited above would likely result in the modeled concentrations for all remaining nonattainment receptors in the East to be below 76.0 ppb and thus attainment – raising significant questions about the rule imposing prohibited over-control on upwind states. Simply stated, it is highly questionable to force the implementation of additional reductions by sources in other states when sources in the state in which the non-attainment monitors located are not meeting, or at least being modeled as meeting, their CAA mandated requirements.

Perhaps the most significant omission by EPA is its failure to account for the mandate that Connecticut impose RACT controls by the start of the 2017 ozone season. As pointed out in MOG's comments on the proposed rule, in its document entitled "Reasonably Available Control Technology Analysis under the 2008 8-Hour Ozone National Ambient Air Quality Standard", dated July 17, 2014 (which can be found at: http://www.ct.gov/deep/lib/deep/air/ozone/ozoneplanningefforts/ract_2008_naaqs/2014-07-17_-_ct_final_ract_sip_revision.pdf) the Connecticut Department of Energy and Environmental Protection ("DEEP") Bureau of Air Management conducted an evaluation of its RACT controls. The principal conclusion reached by Connecticut at page 28 of that report is as follows:

> "DEEP commits to perform further evaluation of Connecticut's municipal waste combustor and fuel-burning source NOx requirements and to seek any regulatory revisions necessary to revise the control requirements to a RACT level for the 2008 ozone NAAQS. The main basis for the determination that these source categories are no longer subject to RACT is that other states now have in place emissions limitations that are more stringent than those required in Connecticut, so the more stringent emission limits, and the controls necessary to meet those emission limits, are technically and economically feasible."

With respect to Municipal Waste Combustors the Connecticut report offered the following statement (*Id. at* 28 - 29):

> "Connecticut has six facilities that burn municipal waste to create electricity and are comprised of a total of 15 units. Only three of the units are small municipal waste combustors, as defined by EPA in 40 CFR 60 Subpart AAAA and the associated emissions guidelines. Together, these 15 units are one of the most significant sources of NOx emissions in Connecticut. In 2011, the municipal waste combustor NOx emissions exceeded those of Connecticut's electric generating sector to become the largest stationary source category of NOx emissions in Connecticut.
>
> ...
>
> Based on these observations, DEEP believes that it may be both technically and economically reasonable to reduce NOx emissions from the Connecticut municipal waste combustor facilities. The municipal waste combustor units at the Bristol facility, at which the LN™ technology has been installed, are mass burn waterwall units, which are the dominant combustor type in Connecticut.27 New Jersey has

> adopted, and Massachusetts has proposed to adopt, a NOx emissions limit for mass burn waterwall units that is more stringent than Connecticut's emissions limit .... In addition, Massachusetts has proposed to adopt a NOx emissions limit for mass burn refractory units that is more stringent than Connecticut's emissions limit .... DEEP commits to investigate the cost and emissions reductions available from the municipal waste combustors and, if appropriate, initiate a stakeholder process to develop a regulatory amendment. DEEP would seek to move such an amendment through the regulatory adoption process to allow for adoption by December 31, 2016."

With respect to Fuel-Burning Sources (Boilers, Turbines, Engines) the Connecticut report observed (*Id. at* 30, 32) as follows:

> "Revisions to the NOx emissions control requirements for boilers, turbines and engines in RCSA section 22a-174-22 are necessary to establish a RACT level of control under the 2008 ozone NAAQS. Several nearby states, including New York and New Jersey, have updated NOx RACT regulations, and other states, including Maryland, are currently reviewing existing NOx RACT requirements with respect to boilers, turbines and engines. The Ozone Transport Commission (OTC) has also recently reviewed the short-term NOx emissions limitations for fuel-burning equipment throughout the Ozone Transport Region in part to allow states to address emissions from demand response units and other units that operate intermittently to meet electric demand, particularly in the summer months.
>
> ...
>
> Based on the comparison of Connecticut's NOx emissions limitations with those in other states ..., reductions in the emissions limitations of RCSA section 22a-174-22 are necessary, likely in conjunction with an elimination or adjustment of the NOx credit trading program, so that Connecticut's boilers, turbines and engines are controlled to a RACT level with respect to the 2008 ozone NAAQS."

As can be seen from this discussion, there is a clear statutory and regulatory mandate for states such as Connecticut to adopt updated RACT controls in advance of the 2017 ozone season – a point that is conceded by Connecticut itself. The reductions related to these RACT-based controls will, of course, have a direct impact on air quality and directly affect the Court mandated assessment of whether emission reductions imposed by a transport rule are more stringent than would be necessary to allow a downwind states to attain the 2008 ozone NAAQS. MOG therefore urges that EPA first consider the effects of these legally mandated controls on existing nonattainment area before seeking controls in upwind states. Even though Good

Neighbor SIPs are due before many of these known programs are implemented and affect air quality, EPA cannot simply ignore the fact that the programs are known and that the effects can be quantified. MOG therefore requests that EPA reconsider the exclusion of these and other programs in establishing its CSAPR update.

2. **EPA must require downwind states to implement local control first.**

EPA is required under the CAA to first consider the effects of local emissions in a nonattainment area and nearby areas in state(s) closest to the nonattainment area in question before seeking controls in upwind states. CAA §107(a) states that "[e]ach State shall have the primary responsibility for assuring air quality within the entire geographic area comprising such State." In addition, CAA §110(a)(1) requires that a state SIP "provides for implementation, maintenance, and enforcement" of the NAAQS "in each air quality control region . . . within such State." Moreover, EPA recognized the requirement to look locally in both its 1997 NOx SIP Call and in CAIR. We note that the requirement to consider emission reductions from local controls in downwind states was an element of CAIR (a factor that was not adversely impacted by the *North Carolina v. EPA* decision). EPA must study the impact of local controls and require that such local sources be appropriately controlled before turning to upwind states for additional reductions.

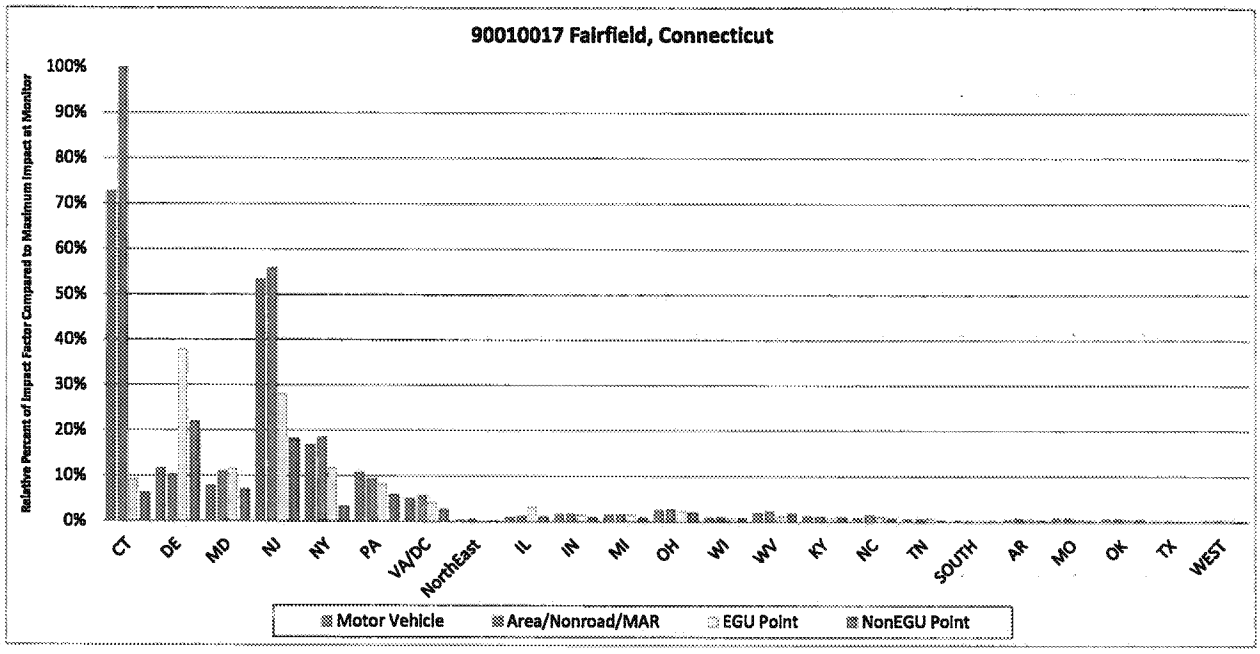
In particular, EPA must determine whether downwind states would experience non-attainment of the NAAQS even if no transport occurred at all. If local sources in a non-attainment area, or for that matter, local sources within the OTR, are causing the NAAQS to be exceeded four or more times in the critical year, independent of regional transport, then it is

imperative that the downwind states control those sources before EPA can turn to upwind states for further controls.

In a report prepared for MOG by Alpine Geophysics (Alpine) and entitled "Relative Impact of State and Source Category NOx Emissions on Downwind Monitors Identified Using the 2017 Cross State Air Pollution Rule Modeling Platform" which can be found at: http://www.midwestozonegroup.com/files/RelativeImpactofStateandSourceCategoryNOxEmissionsonDownwindMonitorsIdentifiedUsingthe2017CrossStateAirPollutionRuleModelingPlatform.pdf), Alpine has examined which state's emission have the greatest impact on downwind ozone concentrations.

In its report Alpine has determined, at each monitor, from where and what source category, on a ppb per ton basis, we see the greatest relative contribution to ozone concentrations. In other words, we see which source category, and from what state, has the greatest per ton NOx contribution to the monitors' modeled ozone concentrations. Results from Alpine's calculations were then normalized to the results of the maximum individual state/category contributor, so that one can easily identify the greatest ppb per ton state/source category and have an easy way of determining which categories have greater relative impact compared to all others. In addition to recognizing the usefulness of this impact factor in determining which states and categories are the largest ppb/ton contributors to each monitor, the results may be used in assisting policy makers in the development of control strategies and their relative impact on ozone concentrations at various locations. Resulting monitor-level, relative impact factors for the twenty-one eastern state proposed rule identified nonattainment and maintenance monitors are presented in the tables set forth in that report.

The following is the graph from that report related to one of the Fairfield Connecticut monitors:



As can be seen from this chart, assuming linearity of NOx emissions and ozone concentration changes, the greatest improvement in ozone concentrations occur with reductions in emissions from sources located in Connecticut itself and from area and mobile sources throughout the Northeast. It also turns out that the three states with the next greatest potential to improve air quality on a per ton reduced basis in Connecticut are:

New Jersey (over 50% of Connecticut's potential);

Delaware (nearly 40% of Connecticut's potential); and

New York (nearly 20% of Connecticut's potential).

This analysis further supports the conclusion that the control of local sources and local transport are key components to addressing residual nonattainment concerns in the region with

respect to the 2008 ozone NAAQS and provides an important preview of what might need to be done to address the 2015 ozone NAAQS.

MOG therefore urges that EPA reconsider its position regarding requiring local controls prior to the requirement for upwind state controls.

3. **EPA's approach and development of a control strategy in selection of maintenance receptors is fatally flawed.**

In its comments on the proposed rule, MOG challenged the methodology proposed by EPA to identify maintenance receptors in its step 1 analysis.

EPA's reliance on the CSAPR methodology to address "interference with maintenance" is not only inconsistent with the Clean Air Act, but also inconsistent with both the U.S. Supreme Court and D.C. Circuit decisions on CSAPR. The CSAPR methodology is not reasonable in its application, resulting in requirements beyond the Clean Air Act and therefore must be revised. EPA provides the following statement in the NODA on "interference with maintenance,"

> . . . as part of the approach for identifying sites with projected future maintenance problems, the highest (i.e., maximum) ambient design value from the 2011-centered 5-year period (i.e., the maximum design values from 2009-2011, 2010, 2010-2012, and 2011–2013) was projected to 2017 for each site using the site-specific RRFs. Following the CSAPR approach, monitoring sites with a maximum design value that exceeds the NAAQS, *even if the average design value is below the NAAQS*, are projected to have a maintenance problem in 2017. In this regard, nonattainment sites are also maintenance sites because the maximum design value at nonattainment sites is always greater than or equal to the 5-year weighted average. *Monitoring sites with a 2017 average design value below the NAAQS*, but with a maximum design value that exceeds the NAAQS, are considered maintenance-only sites. These sites are projected to have a maintenance problem, but not a nonattainment problem."

80 Fed. Reg. 46271, 46274 (August 4, 2015).

In its proposed CSAPR update, EPA stated:

> Moreover, as all nonattainment receptors are also maintenance receptors because the maximum design value will always be equal to or exceed the average design value, it is reasonable to control all sites consistent with the level of control necessary to reduce maintenance concerns.

80 Fed. Reg. 75730 (December 3, 2015).

The U.S. Supreme Court in *EPA v. EME Homer City Generation, LP*, explains the maintenance concept set forth in the Good Neighbor Provision as follows:

> Just as EPA is constrained, under the first part of the Good Neighbor Provision, to eliminate only those amounts that "contribute...to *nonattainment*," EPA is limited, by the second part of the provision, to reduce only by "amounts" that "interfere with *maintenance," i.e.* by just enough to permit an already-attaining State to maintain satisfactory air quality." 134 S.Ct. at 1604, Ftn 18.

Relative to the reasonableness of EPA's assessment of contribution, the U.S. Supreme Court also provides,

> The Good Neighbor Provision . . . prohibits only upwind emissions that contribute significantly to downwind nonattainment. EPA's authority is therefore limited to eliminating . . .the overage caused by the collective contribution . . ." *Id.* at 1064. (Emphasis added.)
>
> ". . . the Good Neighbor Provision . . . requires EPA to eliminate amounts of upwind pollution that "interfere with maintained" of a NAAQS by a downwind State. §7410(a)(2)(D)(i). This mandate contains no qualifier analogous to "significantly," and yet it entails a delegation of administrative authority of the same character as the [the nonattainment language of the Good Neighbor Provision]. Just as EPA is constrained, under the first part of the Good Neighbor Provision, to eliminate only those amounts that "contribute . . .to *nonattainment*," EPA is limited, by the second part of the provision, to reduce only by "amounts" that "interfere with *maintenance*," *i.e.*, by just enough to permit an already-attaining State to maintain satisfactory air quality. (Emphasis added.) With multiple upwind States contributing to the maintenance problem, however, EPA confronts the same challenge that the "contribute significantly" mandate creates: How should EPA allocate reductions among multiple upwind States, many of which contribute in amounts sufficient to impede downwind maintenance? Nothing in *either* clause of the Good Neighbor Provision provides the criteria by which EPA is meant to apportion responsibility." *Id.* at 1604, ftn 18.

It is noteworthy that the Supreme Court provides that lacking a dispositive statutory instruction to guide it, EPA's decision on the designation of significant contribution must meet the reasonableness test of the *Chevron* decision for filling the gap left open by Congress. *Id.* at 1604. The emphasis upon the single maximum design value to determine a maintenance problem for which sources (or states) must be accountable, creates a default assumption of contribution. A determination that the single highest modeled maximum design value is appropriate for the purpose to determining contribution to interference with maintenance is not reasonable either mathematically, in fact, or as prescribed by the Clean Air Act or the U.S. Supreme Court. The method chosen by EPA must be a "permissible construction of the Statute." *Id.* at 1606.

EPA's use of a modeled maximum design value, when the average is below the NAAQS, to define contribution, results in a conclusion that any modeled contribution is deemed to be a significant interference with maintenance. This concept is inconsistent with the Clean Air Act and the U.S. Supreme Court's assessment of its meaning.

As noted by the D.C. Circuit in the 2012 lower case of *EME Homer City Generation v. EPA*, "The good neighbor provision is not a free-standing tool for EPA to seek to achieve air quality levels in downwind States that are *well below* the NAAQS." 696 F.3d. at 22. "EPA must avoid using the good neighbor provision in a manner that would result in unnecessary over-control in the downwind States. Otherwise, EPA would be exceeding its statutory authority, which is expressly tied to achieving attainment in the downwind States." *Id.* EPA has not justified its proposal as necessary to avoid interference with maintenance.

In a stated effort to account for historical variability in air quality at a receptor, EPA offered the following proposal for determining maintenance receptors for purposes of this proposal:

> "... EPA assesses the magnitude of the maximum projected design value for 2017 at each receptor in relation to the 2008 ozone NAAQS and, where such a value exceeds the NAAQS, EPA determines that receptor to be a ''maintenance'' receptor for purposes of defining interference with maintenance in this proposal, consistent with the method used in CSAPR and upheld by the D.C. Circuit in *EME Homer City II.*81 That is, monitoring sites with a maximum design value that exceeds the NAAQS are projected to have a maintenance problem in 2017."

80 Fed. Reg. 75724 (December 3, 2015)

As stated above, however, we do not believe that the approach being advanced by EPA is consistent with the holding of the D.C Circuit which called for "a carefully calibrated and commonsense supplement to the "contribute significantly" requirement". *EME Homer v. EPA*, August 21, 2012.

It is significant to us and should be instructive to EPA that a careful process has existed for many years related to the identification and management of maintenance areas.

Indeed, Section 175A of the Clean Air Act provides:

> "(a) Plan revision
> Each State which submits a request under section 7407 (d) of this title for redesignation of a nonattainment area for any air pollutant as an area which has attained the national primary ambient air quality standard for that air pollutant shall also submit a revision of the applicable State implementation plan to provide for the maintenance of the national primary ambient air quality standard for such air pollutant in the area concerned for at least 10 years after the redesignation. The plan shall contain such additional measures, if any, as may be necessary to ensure such maintenance."

Moreover, the agency's principal guidance on the management of maintenance areas is set forth in "Procedures for Processing Requests to Redesignate Areas to Attainment", John Calcagni memorandum, 4 September 1992, which contains the following statement on page 9:

> "A State may generally demonstrate maintenance of the NAAQS by either showing that future emissions of a pollutant or its precursors will not exceed the level of the attainment inventory, or by modeling to show what the future mix of source and emission rates will not cause a violation of the NAAQS. Under the Clean Air Act, many areas are required to submit modeled attainment demonstrations to show that proposed reductions in emissions will be sufficient to attain the applicable NAAQS. For these areas, the maintenance demonstration should be based upon the same level of modeling. In areas where no such modeling was required, the State should be able to rely on the attainment inventory approach. In both instances, the demonstration should be for a period of 10 years following the redesignation."

This guidance has been applied in several specific circumstances including the Denver Metropolitan Area where the submitted plan offered the following statement:

> "As required by CAA Section 175A(a), each request for redesignation shall be accompanied by a SIP revision which provides for maintenance of the NAAQS for at least 10 years after redesignation. Following EPA guidance and policy (September 4, 1992 EPA memorandum from John Calcagni to EPA regional offices), this maintenance demonstration is made by comparing projected 2006 and 2013 emissions with the attainment year 1993 emissions. If 2006 and 2013 emissions are less than 1993 emissions, then maintenance is demonstrated."

Ozone Redesignation Request And Maintenance Plan For the Denver Metropolitan Area, January 2001.

Similarly the plan submitted for Washoe County offered the following statement:

> "A key element of this maintenance plan is the demonstration of how Washoe County will remain in compliance with the 8-hour ozone standard for the 10-year period following the effective date of designation as attainment. Washoe County's effective date of designation is June 15, 2004, Therefore this maintenance plan projects attainment through 2014."

Maintenance Plan for the Washoe County 8-Hour Ozone Attainment Area, April 2007.

Given the clear statutory and regulatory directive for the management of maintenance areas, we urge EPA to apply the same approach to this proposed transport rule. As is set forth below, and as is discussed elsewhere in these comments, we have provided the current design

values for all 21 problem monitors along with EPA's future year project for each area identified in the proposal:

			Ozone DVs (ppb)	
State	County	Monitor	2013-15	2025 NAAQS
Connecticut	Fairfield	90010017	81	70.9
Connecticut	Fairfield	90013007	83	73.3
Connecticut	Fairfield	90019003	84	74.3
Connecticut	New Haven	90099002	78	72.2
Kentucky	Jefferson	211110067	70	70.1
Kentucky	Oldham	211850004	69	66.8
Maryland	Baltimore	240053001	68	66.6
Maryland	Harford	240251001	71	73.8
Michigan	Allegan	260050003	76	70.0
Michigan	Wayne	261630019	69	69.5
New Jersey	Camden	340071001	69	67.4
New Jersey	Gloucester	340150002	73	68.9
New Jersey	Middlesex	340230011	72	66.9
New Jersey	Ocean	340290006	72	67.7
New York	Queens	360810124	69	71.5
New York	Richmond	360850067	74	71.8
New York	Suffolk	361030002	72	75.7
Ohio	Hamilton	390610006	70	68.8
Pennsylvania	Allegheny	420031005	73	71.2
Pennsylvania	Philadelphia	421010024	72	69.9
Wisconsin	Sheboygan	551170006	77	71.1

See Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone, September 2015, p. 2A-42 which can be found at: http://www3.epa.gov/ozonepollution/pdfs/20151001ria.pdf.

Inasmuch as all of the problem areas, including all of the maintenance areas, will be in attainment with the 2008 NAAQS in 2017, it is inappropriate for EPA to finalize the adoption of this rule. Given the near and longer term attainment status of the maintenance monitors, any

additional emission reductions called for under EPA's proposal would result in over-control and be prohibited.

EPA proposes to take an approach to identify maintenance areas that is fundamentally different from that used to identify nonattainment areas. Specifically EPA offers the following explanation of how it will identify maintenance areas:

> Consistent with the CSAPR methodology, monitoring sites with a projected maximum design value that exceeds the NAAQS, but with a projected average design value that is below the NAAQS, are identified as maintenance-only receptors. In addition, those sites that are currently measuring clean data, but are projected to be nonattainment based on the average design value and that, by definition, are projected to have a maximum design value above the standard are also identified as maintenance-only receptors. We are not proposing that monitored data have any effect on the EPA's determination of maintenance receptors using the CSAPR method since even those receptor sites that are not currently monitoring violations are still subject to conditions that may allow violations to reoccur and therefore have future maintenance concerns.

80 Fed. Reg. 75724 (December 3, 2015).

In comparison, EPA very properly proposes to identify nonattainment areas taking into account monitoring data. That monitoring data is, of course, vital to an assessment of both nonattainment and maintenance areas. EPA fails to offer an adequate explanation of why that monitoring data should not be considered.

MOG urges EPA to consider monitor data when identifying maintenance areas. As set forth in the chart above, use of monitoring data will provide for the consideration of the extensive attainment that is currently being measured at these locations.

In responding to this comment, EPA noted that the CAA requires upwind states to submit Good Neighbor SIPs before consideration can be given to re-designating areas from non-

attainment (with attendant maintenance plan obligations), that emission reduction obligations should not be dependent on current or prior designations of downwind areas, that the CAA does not state that maintenance areas can only occur where there has once been non-attainment, that CAA §175A is not a limit on EPA authority to address maintenance, that because of the variability of meteorology, EPA will not consider monitoring data in the identification of maintenance receptors, and that the 2016 monitoring data indicates ozone has increased compared with 2014.

MOG notes that many more monitors in 2016 (71%) had ozone concentrations less than they had in 2015. This improvement of air quality is likely to continue, not only because NOx and VOC emissions have been steadily decreasing over recent years, but because of the additional NOx and VOC reduction programs mandated by the CAA in 2017 that will further reduce ozone levels.

In sum, MOG's analysis of monitoring data shows that use of more recent data indicates that maximum design values are in attainment and, for that reason, requests that EPA reconsider its approach for identifying and managing maintenance receptors.

4. **The 1% significant threshold is inappropriate given modeling accuracy.**

MOG opposes the use of the proposed one percent threshold because EPA has not technically demonstrated that continued use of the one percent screening metric is appropriate for linking an upwind state to a downwind nonattainment or maintenance receptor. Dispersion models simply cannot calculate air quality within that range of accuracy and the costs at stake are too high to allow a level of significance that is within the capability of the models.

The CAA includes no specifics regarding establishment of a significance level applicable to interstate transport. CAA Section 110(a)(2)(d) simply requires that:

> "(2) Each implementation plan submitted by a State under this chapter shall be adopted by the State after reasonable notice and public hearing. Each such plan shall—
> ...
> (D) contain adequate provisions—
> (i) prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will—
> (I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or
> (II) interfere with measures required to be included in the applicable implementation plan for any other State under part C of this subchapter to prevent significant deterioration of air quality or to protect visibility,
> (ii) insuring compliance with the applicable requirements of sections 7426 and 7415 of this title (relating to interstate and international pollution abatement);..."

There is no further guidance under the CAA to define "amounts [of emissions] which will contribute significantly to nonattainment in, or interfere with maintenance by, any other state with respect to any such primary or secondary ambient air quality standard ...." EPA established the 1% significance level in its June 11, 2011 promulgation of CSAPR (76 Fed. Reg. 48211, 48236) and has done so again in this proposal, stating "[a]ccordingly, the EPA has applied an air quality screening threshold calculated as one percent of the 2008 ozone NAAQS, 0.75 ppb, to identify those states ''linked'' to downwind nonattainment and maintenance receptors with respect to the 2008 ozone NAAQS which require further analysis to identify potential emission reductions."(81 Fed. Reg. 74518).

As will be pointed out elsewhere in these comments, there are serious concerns about the performance of EPA's model particularly with respect to all of the nonattainment monitors

which coincidentally are located on a land-water interface which significantly complicates the accuracy of the model.

Given these and other uncertainties about the accuracy of EPA's modeling, MOG strongly urges that the significance level established in CSAPR and in this proposal be reconsidered and be increased to take account of these modeling limitations. In addition, setting a higher significance level is a useful approach for assurance that there is no over-control of emissions from upwind states.

EPA disagreed with the MOG comment that the 1% significance threshold should be set at a higher limit because "it is appropriate to use a low air quality threshold when analyzing states' collective contributions to downwind nonattainment and maintenance for ozone as well as PM2.5. (81 FR 74519) EPA added that, "[i]n response to commenters who advocated for a higher threshold, the EPA observes that the analysis of a 5 percent threshold shows that a higher threshold would result in a relatively large reduction in the overall percentage of ozone pollution transport captured relative to the amounts captured at the one percent level at a majority of the receptors. In fact, at a 5 percent threshold there would not be any upwind states linked to the nonattainment and maintenance receptors in Texas."

EPA's response completely ignores the concerns expressed about the sensitivity of the computer model to be able to predict such low levels. Moreover, EPA apparently did not consider a more moderate increase – i.e. 2%, or 3%, or any other level between 1% and 5%. Inasmuch as air quality models are not able to perform accurately at the 1% significance level for these low concentrations, MOG urges that EPA reconsider using a higher significance level to determine linkage.

5. **EPA has incorrectly given maintenance areas the same weight and status as it has given to nonattainment areas.**

In MOG's comments on the proposed rule, EPA's inappropriate application of the nonattainment area significance test to maintenance area was challenged. MOG also took issue with EPA's decision to give the same weight to the development of controls programs to address maintenance areas as it does to address nonattainment areas. Maintenance areas should not be subject to the same "significance" test as applies to nonattainment areas in that maintenance areas do not require the same emission reduction response as nonattainment areas.

The final rule inappropriately applies the nonattainment are significance test to maintenance areas and provides the same weight to the development of control programs to address maintenance areas as it does nonattainment areas. MOG objects to this approach both because maintenance areas are not subject to the same "significance" test as applies to nonattainment areas and because maintenance areas do not require the same emission reduction response as nonattainment areas.

As was stated by the U.S. Supreme Court opinion in *EPA v. EME Homer City*, April 29, 2014:

> "The statutory gap identified also exists in the Good Neighbor Provision's second instruction. That instruction requires EPA to eliminate amounts of upwind pollution that "interfere with maintenance" of a NAAQS by a downwind State. §7410(a)(2)(D)(i). This mandate contains no qualifier analogous to "significantly," and yet it entails a delegation of administrative authority of the same character as the one discussed above. Just as EPA is constrained, under the first part of the Good Neighbor Provision, to eliminate only those amounts that "contribute . . . to *nonattainment*," EPA is limited, by the second part of the provision, to reduce only by "amounts" that "interfere with *maintenance,*" i.e., by just enough to permit an already-attaining State to maintain satisfactory air quality. (Emphasis added). With multiple upwind States contributing to

> the maintenance problem, however, EPA confronts the same challenge that the "contribute significantly" mandate creates: How should EPA allocate reductions among multiple upwind States, many of which contribute in amounts sufficient to impede downwind maintenance" Nothing in *either* clause of the Good Neighbor Provision provides the criteria by which EPA is meant to apportion responsibility."

Excerpt from D.C. Circuit opinion in EME Homer City v. EPA, August 21, 2012:

> "The statute also requires upwind States to prohibit emissions that will "interfere with maintenance" of the NAAQS in a downwind State. "Amounts" of air pollution cannot be said to "interfere with maintenance" unless they leave the upwind State and reach a downwind State's maintenance area. To require a State to reduce "amounts" of emission pursuant to the "interfere with maintenance" prong, EPA must show some basis in evidence for believing that those "amounts" from an upwind State, together with amounts from other upwind contributors, will reach a specific maintenance area in a downwind State and push that maintenance area back over the NAAQS in the near future. Put simply, the "interfere with maintenance" prong of the statute is not an open-ended invitation for EPA to impose reductions on upwind States. Rather, it is a carefully calibrated and commonsense supplement to the "contribute significantly" requirement."

Rather than to recognize the distinction between "significance' and "interference" as urged by the Courts, EPA has treated the two as though they are the same. MOG urges EPA to reconsider this approach and to develop an appropriate test for "interference" with maintenance and to develop an alternative emission reduction approach that accounts for the fact that maintenance areas are already in attainment and cannot consequently justify the same level of emission reductions as might be called for with respect to nonattainment areas.

EPA disagreed with the comment in the final rule because the "CSAPR framework gives independent meaning to the 'maintenance' prong of CAA section 110(a)(2)(D)(i)(I) as required by D.C. Circuit's decision in *North Carolina.*" (81 FR 74520) EPA adds that "EPA is afforded deference to develop an appropriate application of this requirement so long as it is a 'permissible construction of the statute,''' citing Chevron, U.S.A., Inc. v. NRDC, Inc., 467 U.S. 837, 843, 104 S. Ct. 2778,2782 (1984) EPA notes that "states linked to maintenance-only receptors would generally have a lesser emission reduction obligation than states linked to nonattainment

receptors, but for the partial nature of this rule," and adds that, "even when all the emission reductions required by this rule are in place, both attainment and maintenance problems at downwind receptors may remain, and the EPA will need to evaluate whether the upwind states' emission reduction obligations should be more stringent considering other factors not addressed by this rule, including control strategies that can be implemented on a longer timeframe or by other source categories." In other words, because the final rule is only a partial remedy for addressing upwind impacts, EPA cannot say how final non-attainment versus maintenance emission reductions will compare.

EPA does not address the fact that the CAA uses different terms to address maintenance versus non-attainment, i.e., "significant contribution to non-attainment versus "interfere with maintenance." EPA treats the terms "significant" and "interference" as being the same and in doing so offers no justification. While both maintenance and nonattainment areas are subject to the protection of 110(a)(2)(D)(i) there is an open question about what level of control may be necessary to avoid "significant contribution" versus "interference with maintenance." EPA's comment that attainment concerns remain even after controls are in place, compels the observation that all remaining non-attainment monitors in the East have exactly the same ozone concentration – 76.0 ppb – the lowest possible concentration that would allow these monitors to remain in non-attainment. MOG therefore requests that EPA reconsider the weight given to maintenance versus nonattainment areas for the control program analysis.

6. **EPA failed to conduct model performance evaluation for the critical days selected for the proposed rule particularly for receptors at a land/water interface.**

MOG commented that "model performance should be evaluated for the individual days that were used in calculating projected 2017 ozone design values and projected 2017 ozone contributions." Commenters also said that, "in cases where model performance on these individual days is poor, the impact of the poor performance on projected concentrations and contributions must be investigated and considered in the final results by removing or adjusting these days to account for model bias." (81 FR 74527)

EPA rejected the comments because "there are no universally accepted, generally applicable numerical bright-line criteria for determining which days might be candidates to exclude or adjust based on model performance for specific days at individual sites," and because "[p]rior court rulings are deferential to modeling choices in this regard." (81 FR 74527) Significantly, EPA did not address the comment that the model performance used can fairly be described as "poor," particularly at land/water interface locations.

As part of its review of the EPA data behind the proposed transport rule, Alpine has prepared a report entitled "Model Performance Review at Monitors with Complex Meteorology Land-Water Interfaces" which can be found at: http://www.midwestozonegroup.com/files/ModelPerformanceReviewatMonitorswithComplexMeteorologyLand-WaterInterfaces.pdf).

In that report, Alpine notes that EPA ozone attainment modeling guidance states that "[t]he most important factor to consider when establishing grid cell size is model response to emissions controls. Analysis of ambient data, sensitivity modeling, and past modeling results can be used to evaluate the expected response to emissions controls at various horizontal resolutions for both ozone and PM2.5 and regional haze. If model response is expected to be different (and

presumably more accurate) at higher resolution, then higher resolution modeling should be considered. If model response is expected to be similar at both high and low(er) resolution, then high resolution modeling may not be necessary. *The use of grid resolution finer than 12 km would generally be more appropriate for areas with a combination of complex meteorology, strong gradients in emissions sources, and/or land-water interfaces in or near the nonattainment area(s)*" (emphasis added)

In its modeling in support of the proposed rule, EPA simulated a national domain using a 12km grid resolution domain wide. While this makes running a national, regional simulation easier from a technical perspective, it ends up neglecting the important issue of the complex meteorology and/or land-water interfaces in or near the nonattainment or maintenance monitors of interest. Photochemical modeling along coastlines is complex for two reasons. First, the temperature gradients along land/water interfaces can lead to localized on-shore/off-shore flows; and second, the photochemical model formulation spreads the emissions in a grid cell throughout the full grid volume of the cell.

Given the importance of certain monitors located in areas of complex meteorology, an analysis was undertaken by Alpine to examine the performance of the model when compared against observations, and to examine how the model results are used in the attainment test calculation to determine estimated future attainment status. Figures 1 and 2 set forth below present two unique areas in the eastern U.S. that are challenged by these complex meteorology land-water interfaces. For each monitor, Alpine has reviewed the EPA published model performance evaluation (MPE) metrics for ozone and compared them to additional MPE metrics from the same modeling platform.

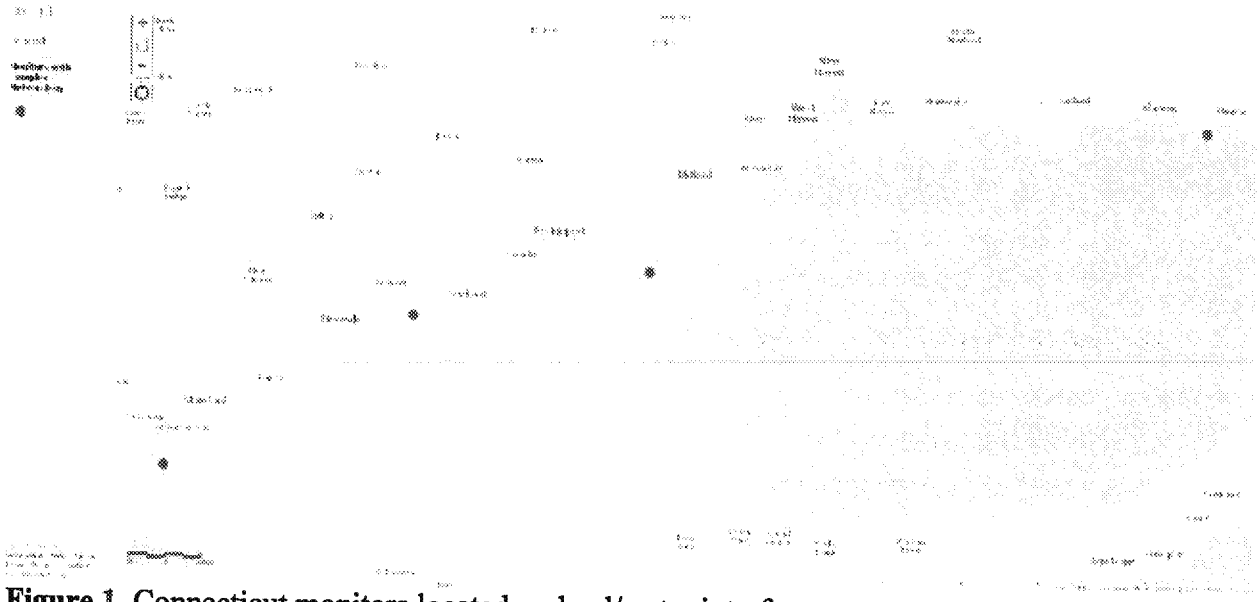


Figure 1. Connecticut monitors located on land/water interface.

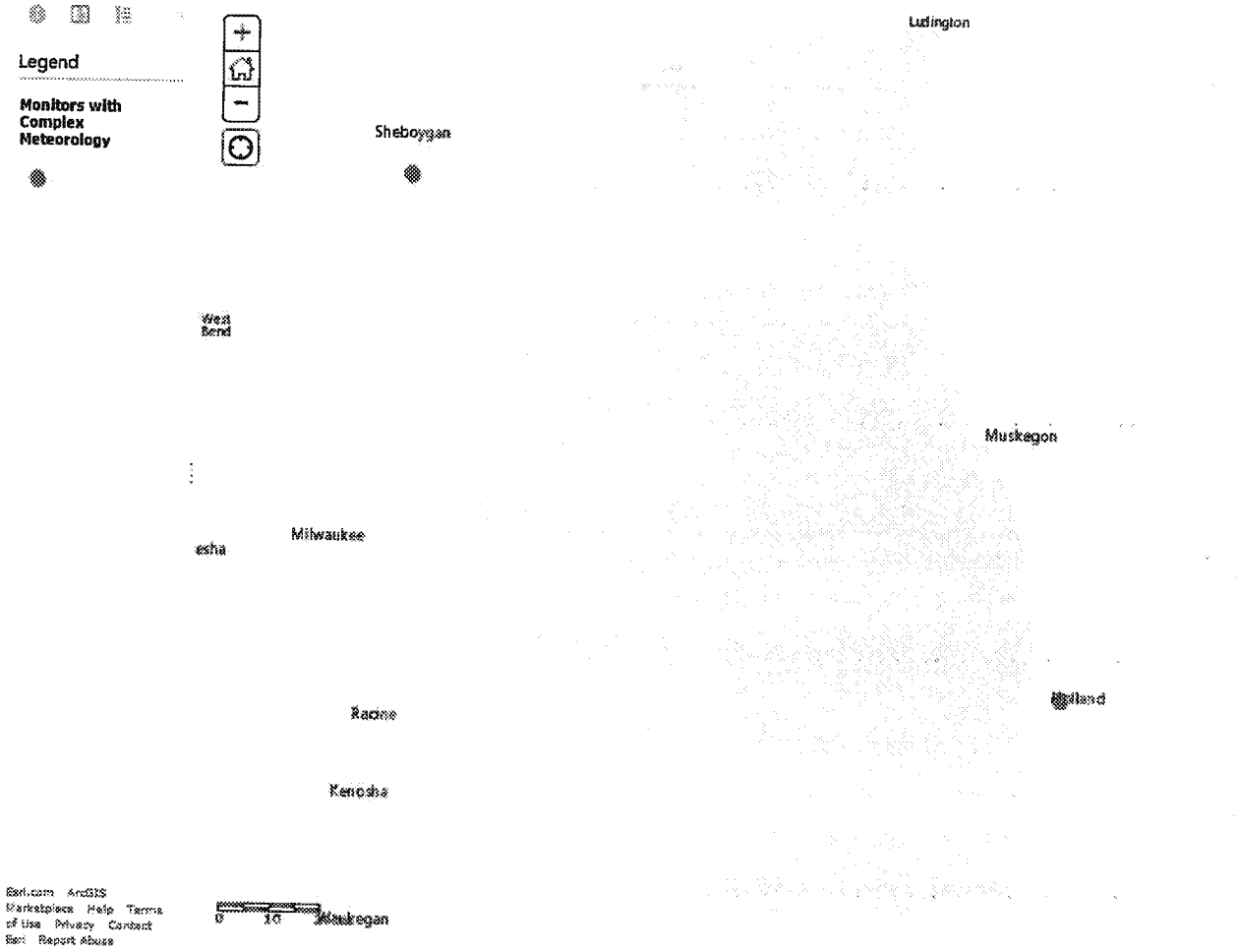


Figure 2. Wisconsin and Michigan monitors located on land/water interface. 3

In examining each of these monitors Alpine notes that a portion of the grid cell is located over or adjacent to a water body. Studies indicate that air quality forecast models typically predict large summertime ozone abundances over water relative to land in the Great Lakes region and that meteorology around the Long Island Sound is distinctly unique; both warranting individualized attention and the fine grid resolution required to best account for these issues.

Additionally, the 3x3 neighborhood of grid cells used in determining the design values of the relative response factor (RRF) extends into the water bodies. Under current guidance, the top ten modeled days within this 3x3 matrix are used in determining this RRF for each monitor. In this analysis Alpine reviewed the performance of the days selected for use in the RRF calculation for the grid cells determined to have been used in the attainment test.

Six monitors were initially identified for this review and are listed in the report with EPA's performance metrics for days observed at or above 60 ppb as documented in the air quality TSD (AQTSD). EPA notes that the performance evaluation was conducted comparing observed concentration data with the modeled concentration data simulated in the grid cell in which the monitor was located. In reviewing this table, considering all days observed at or above 60 ppb, both the NMB and NME fall within the thresholds identified above. Based on this broad indicator of model performance (all days observed at or above 60 ppb) the model appears to be performing adequately.

It is also important to understand how the model is performing on the days that are being used in the attainment demonstration. As suggested in the draft EPA modeling guidance, and

used in the CSAPR proposed rule, only the top 10 days with the highest modeled concentration in the vicinity of the monitoring site are considered.

To review this important issue, Alpine generated the performance metrics for these three example monitors using the days selected in the MATS attainment test, and for days selected for the MATS attainment test with the associated grid cell concentration actually used in the RRF calculation (max concentration in the 3x3 grid).

As is seen from this report, the MDA8 concentration value used to represent each monitor-day in the performance evaluations is always lower and generally significantly lower than the maximum grid cell used in EPA's RRF calculation. This difference ranges from a low of 3.17 ppb (at Fairfield on July 6, 2011) to 29.84 ppb (at Sheboygan on July 30). The impact of this change results in poorer model performance on these days at these monitors and in RRFs weighted to concentrations calculated over the water bodies and not to the grid cells and land-based grids more representative of the monitor's conditions.

Performance metrics have also been calculated for the 10 RRF days revealing that the monitor-sited concentrations have much lower bias and error values than the over-water concentrations. And while it is recognized that the base year grid cell and future year grid cell will be paired (as used in the relative sense), the resulting RRF could show more or less responsiveness in emissions changes relative to the ozone concentrations at each associated monitor. The report also notes that, while the EPA performance evaluation and metrics are based on the ability of the model to simulate observed concentrations where the monitor is located, in each example presented, the highest concentrations are dominantly selected from over-water locations. Based on these results and on EPA's own guidance related to finer grid cell size

selection for areas demonstrating a combination of complex meteorology, strong gradients in emissions sources, and/or land-water interfaces in or near the nonattainment area(s), Alpine finds that the ozone concentrations selected at these land/water boundary locations are insufficiently accurate, in both bias and error, to be considered as representative of the daily concentrations observed at each monitor and for the ten days selected for the RRF calculation.

It is Alpine's conclusion that this poor performance will have a direct impact on the future year attainment demonstration and significant contribution calculations that use these values as their basis.

In its response to comments, EPA recognized that MOG offered a comment that "the relative response factors for coastal sites should be based on modeled ozone in the grid cell containing the monitoring site or 'land' cells only, rather than the grid cell with the highest 2011 base case modeled value from among the 3 by 3 matrix of grid cells surrounding the monitoring site (i.e., the 3 x 3 matrix approach)." (81 FR 74534) EPA also recognized that "[s]ome commenters said that using the 3 x 3 approach for coastal sites can result in the use of modeled data from grid cells over water, which the commenters claim are not representative of the location of the monitor.

EPA published a lengthy response to those comments, principally noting that EPA's comparison of "land" versus "water" cells found that, of the 8 coastal sites examined, half had water cell values lower than or within 0.5 ppb of the corresponding land cell, and that it would not be appropriate to use different approaches for monitors in coastal areas. This conclusion is remarkable because 0.5 ppb is more than enough to bring all nonattainment monitors in the East into attainment.

Indeed the entire CSAPR update program can turn on design value differences of 0.1 ppb because the remaining monitors are all modeled to be at precisely 76.0 ppb. Therefore, MOG finds it remarkable and unacceptable that EPA dismisses the impact of the land/water interface monitors and requests that EPA reconsider its rejection of the comments regarding this extremely important issue.

7. **EPA has not properly accounted for international emissions.**

MOG was one of the commenters EPA quotes as citing CAA Section 179B for the proposition that "it requires the Administrator to approve plans that would be sufficient to attain or maintain the NAAQS but for emissions emanating from outside of the U.S. They therefore contend that, where a receptor in the EPA's modeling would attain or maintain the standard when international emissions are accounted for, the EPA has no authority to require emissions from upwind states pursuant to section 110(a)(2)(D)(i)(I). Commenters state that such reduction requirements would constitute the over-control of emissions from upwind states. The commenters explicitly recommend that the EPA exclude the projected contributions from Canada and Mexico from the projected design values before comparing the projections to the NAAQS for purposes of identifying receptors. Commenters further recommend that the EPA exclude a 'conservatively calculated' 5 percent of EPA-estimated contributions attributable to the anthropogenic fraction of boundary concentrations. The commenters propose that this approach would result in fewer receptors and relieve upwind states of the obligation to make emission reductions associated with these receptors." (81 FR 74535)

It is imperative that the modeling and associated data and methods prescribed by EPA for the purpose of developing any rulemaking proposal to address interstate ozone transport for the

2008 ozone NAAQS, take into consideration the impact of international transport on ozone air quality in the United States. In the NODA, EPA comments that it will be following the CSAPR approach. The CSAPR approach must, however, be modified to recognize the impacts of international ozone transport. Boundary concentrations and impacts from international sources, including Canada, Mexico, and beyond, are appropriate components to the ozone source apportionment modeling.

In the proposed CSAPR update, EPA acknowledges the existence of international emissions but seemingly only to the extent they contribute to exceptional events. EPA states:

> "The Clean Air Act's good neighbor provision requires states and the EPA to address interstate transport of air pollution that affects downwind states' ability to attain and maintain NAAQS. Other provisions of the CAA, namely sections 179B and 319(b), are available to deal with NAAQS exceedances not attributable to the interstate transport of pollution covered by the good neighbor provisions but caused by emission sources outside the control of a downwind state. These provisions address international transport and exceptional events, respectively."
>
> 80 Fed. Reg. 75712 (December 3, 2015).

As acknowledged in EPA's research of "background" ozone levels, international impacts are a significant factor. EPA provides in its "Policy Assessment for the Review of the Ozone National Ambient Air Quality Standards, August 2014" (which can be found at: http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100KCZ5.txt) that background ozone can originate from natural sources of ozone and ozone precursors, as well as from manmade international emissions of ozone precursors. *Policy Assessment*. p. 2-12. In the first draft policy assessment document (USEPA, 2012), EPA identified three specific definitions of background O_3; natural background (NB), North American background (NAB), and United States background (USB). NAB and USB are based on a presumption that the U.S. has little influence

over anthropogenic emissions outside either our continental or domestic borders. *Policy Assessment,* p. 2-13. EPA's findings indicated that, "the relative importance of background O_3 would increase were ozone concentrations to decrease with a lower level of the O_3 NAAQS." *Policy Assessment,* p. 2-31. This is the circumstance we have today as the nation manages current levels of ozone concentrations relative to existing sources and current control and emissions reductions strategies and the NAAQS.

In the preamble to the adoption of the 2015 ozone NAAQS, EPA interjects the discussion of the impacts of international ozone levels. EPA offers discussion on the Clean Air Act section 179B which recognizes the possibility that certain nonattainment areas may be impacted by ozone or ozone precursor emissions from international sources beyond the regulatory jurisdiction of the state. 80 Fed. Reg. 65444 (October 26, 2015). EPA's science review suggests that the influence of international sources on U.S. ozone levels will be largest in locations are in the immediate vicinity of an international border with Canada or Mexico. Section 179B allows states to consider in their attainment plans and demonstrations (SIP and Good Neighbor SIP) whether an area might meet the ozone NAAQS by the attainment date "but for" emissions contributing to the area originating outside the U.S. If a state is unable to demonstrate attainment of the NAAQS in such an area impacted by international transport after adopting all reasonably available control measures, the EPA shall nonetheless approve the CAA-required state attainment plan and demonstration using the authority in section 179B as discussed further below.

Relative to Good Neighbor SIPs, international impacts also play an important role. Indeed, EPA's NODA data (which can be found at:

http://www.epa.gov/sites/production/files/2015-11/2017_ozone_contributions_transport_noda.xlsx) illustrates that international emissions contribute in excess of 15 ppb to all of the critical monitors in the East. We know the Clean Air Act was written to acknowledge the role of background and attainment. CAA §179B subsection (a) reads as follows addressing any implementation plan, whether downwind nonattainment SIPs or upwind good neighbor SIPs:

> Notwithstanding any other provision of law, an implementation plan or plan revision required under this chapter shall be approved by the Administrator if –
>
> (1) such plan or revision meets all the requirements applicable to it under the chapter other than a requirement that such plan or revision demonstrate attainment and maintenance of the relevant national ambient air quality standards by the attainment date specified under the applicable provision of this chapter, or in a regulation promulgated under such provision, and
>
> (2) the submitting State establishes to the satisfaction of the Administrator that the implementation plan of such State would be adequate to attain and maintain the relevant national ambient air quality standards by the attainment date specified under the applicable provision of this chapter, or in a regulation promulgated under such provision, but for emissions emanating from outside of the United States. (Emphasis added)."

The U.S. Supreme Court noted it is essential that states only be required to eliminate "only those "amounts" of pollutants that contribute to the nonattainment of NAAQS in downwind States..." *EPA v. EME Homer City Generation*, 134 S.Ct. 1584, 1606 (April 29, 2014). "EPA cannot require a State to reduce its output of pollution by more than is necessary to achieve attainment in every downwind State. . . " *Id.* at 1608. The subsequent 2015 D.C. Circuit *EME Homer City Generation* decision offered in response to the remand from the U.S. Supreme Court, expanded as follows, "we thus must determine whether a downwind location would still attain its NAAQS if linked upwind States were subject to less stringent emissions." *EME Homer City Generation v. EPA*, 795 F.3d 118, 127(D.C. Cir. July 28, 2015). This statement assumes the

variable for achieving attainment (or for not achieving attainment) is a set of sources in an upwind State, but it could have been a discussion of emissions from an upwind nation. In the circumstance of a variable of background ambient ozone concentrations attributable to international sources, the air quality deficit must be deducted from the formula for assigning whether a Good Neighbor SIP is warranted. The CAA provides for attainment "but for emissions emanating from outside the United States." As commented by the D.C. Circuit in the initial stages of the *EME Homer City Generation* Good Neighbor Litigation, ". . . the good neighbor provision requires upwind States to bear responsibility for their fair share of the mess in downwind States." *EME Homer City Generation, LP v. EPA,* 696 F.3d 7, 13 (D.C. Cir, August 21, 2012). Determination of "fair share of the mess" would be emissions reductions from the source state, after deduction of emission contributions from international sources, as contemplated by CAA §179B.

In addition, EPA notes that the new ozone NAAQS monitoring data influenced by international transport may be excluded from regulatory determinations. Depending on the nature and scope of international emissions events affecting air quality in the U.S., the event-influenced data may qualify for exclusion under the Exceptional Events Rule. EPA encourages affected air agencies to coordinate with their EPA regional office to identify approaches to evaluate the potential impacts of international transport and to determine the most appropriate information and analytical methods for each area's unique situation. October 1, 2015, Prepublication Final Rule for the National Ambient Air Quality Standard for Ozone, p. 553. In tandem with EPA's proposal to modify the ozone NAAQS, EPA has also commented that it is working on a number of fronts to better understand potential international sources of ozone and identify opportunities for reducing long-range transport . . ."

http://www3.epa.gov/ozonepollution/pdfs/20141125fs-tools.pdf. It is apparent that considerable further analysis of international emissions issue is warranted as the agency stands poised to dictate obligations on states to manage the good neighbor SIP obligations under the CAA.

EPA rejected the comments because it believes that CAA 179B does not provide for relaxation of any control requirement applicable to any downwind state, and notes that "[t]he commenters do not explain why, given the obligation of downwind states with designated nonattainment areas to impose reasonable controls on emissions, upwind states should not also be subject to a similar obligation to take certain reasonable steps to reduce emissions impacting those downwind areas." (81 FR 74535)

MOG believes that the Supreme Court decision in EPA v. EME Homer City Generation, L.P. (134 S. Ct. 2857) precludes EPA from imposing any more reduction in emissions from an upwind state than would be needed to achieve attainment downwind. There is no limitation placed on EPA's authority to require emissions reductions in downwind states. Accordingly, MOG requests that EPA reconsider its rejection of the comments on the proper treatment of international emissions in the CSAPR update process.

C. CONCLUSION

For all of the aforementioned reasons, EPA should grant reconsideration of the CSAPR Update Rule. MOG stands ready to assist EPA in its effort to reconsider any of the aforementioned positions in order to develop a legally and technically defensible CSAPR Update Rule.

Respectfully submitted this 21rd day of December, 2016.

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304-353-8000

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May 15, 2017

The Honorable Scott Pruitt
Administrator
U.S. Environmental Protection Agency
Mail Code: 1101A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Evaluation of Existing Regulations;
Docket ID No. EPA-HQ-OA-2017-0190.

Dear Administrator Pruitt:

This letter is provided on behalf of the Midwest Ozone Group ('MOG") in response to the U.S. Environmental Protection Agency request for comment in accordance with Executive Order 13777, "Enforcing the Regulatory Reform Agenda". EO 13777 established a federal policy "to alleviate unnecessary regulatory burdens" on the American people. 82 Fed. Reg. 17793 (April 13, 2017). We particularly welcome the opportunity to bring to EPA's attention, several rules and related policies that create unnecessary regulatory burdens for the electric power industry as well as a significant portion the entire economy of the nation. Moreover, we are mindful of the fact that Executive Order 13777 seeks to identify regulations that, among other things:

1. eliminate jobs, or inhibit job creation;
2. are outdated, unnecessary or ineffective; or
3. create serious inconsistency or otherwise interfere with regulatory reform initiatives and policies.

MOG is an affiliation of companies, trade organizations, and associations that has drawn upon its collective resources to seek solutions to the development of legally and technically sound national ambient air quality management program.[1] MOG's primary effort is to work with policy makers in evaluating air quality policies by encouraging the use of sound science. MOG

[1] The members of and participants in the Midwest Ozone Group include: American Coalition for Clean Coal Electricity, American Electric Power, American Forest & Paper Association, Ameren, Alcoa, ARIPPA, Associated Electric Cooperative, Citizens Energy Group, Council of Industrial Boiler Owners, Duke Energy, East Kentucky Power Cooperative, FirstEnergy, Indiana Energy Association, Indiana Utility Group, LGE / KU, Ohio Utility Group, Olympus Power, and Springfield (IL) City Water P&L.

has been actively engaged in a variety of EPA issues and initiatives related to the development and implementation of air quality policy, including the development of transport rules, NAAQS standards, petitions under 176A and 126 of the Clean Air Act, and state developed alternatives to EPA transport rules and the proposed Clean Power Plan. MOG members and participants operate more than 85,000 MW of coal-fired and coal-refuse fired generation in more than ten states. They are concerned about the development of technically unsubstantiated interstate air pollution rules and the impacts on their facilities, their employees, their contractors, and the consumers of their electric power.

We bring the following specific regulations to your attention as rules that should be modified, and in some cases repealed or replaced or modified to reduce the regulatory burdens on the electric power industry in general and specifically the members of MOG.

1. CSAPR Update Rule – On September 7, 2016, EPA finalized the CSAPR Update Rule for the 2008 ozone National Ambient Air Quality Standards ("NAAQS") which imposed new restrictive NOx emissions limitation budgets beginning with May 1, 2017. On December 21, 2016, MOG submitted a petition for administrative reconsideration of that rule (see: http://midwestozonegroup.com/files/MOGPetitionforAdministrativeReviewofCSAPRUpdateRuleDecember232016.pdf and attached as Exhibit A). In this petition MOG urges that the CSAPR Update Rule be modified for a variety of reasons, including the following:

- failure to give consideration to all emission reduction programs legally mandated to be in effect in 2017;
- failure to impose controls first on sources located in a non-attainment area before seeking emission reductions from sources in upwind states;
- failure to address air quality "maintenance" areas in a manner consistent with the Clean Air Act;
- failure to appropriately determine whether an upwind state is a significant contributor to downwind air quality;
- failure to conduct a performance evaluation for the model used by EPA for the days selected to evaluate critical monitors at a land/water interface; and
- failure to account for the impact of international emissions on air quality in the 2008 ozone NAAQS attainment year of 2017.

2. 2015 Ozone NAAQS – In 2015, EPA completed its most recent review of the national ambient air quality standard ("NAAQS") for ozone and lowered the primary and secondary standard from 75 to 70 ppb. 80 Fed. Reg. 65,292 (October 26, 2015). In the litigation before the D.C. Circuit challenging that change in the ozone NAAQS, EPA filed a motion on April 7, 2017 advising the Court that the new Administration is "closely reviewing the 2015 Rule to determine whether the Agency should reconsider the rule or some part of it." On April 11, 2017, the Court granted EPA's motion and has ordered that the litigation related to the 2015 ozone NAAQS be held in abeyance pending EPA review of the rule.

MOG strongly supports EPA's review of the rule and urges that a rule-making process be initiated to consider the appropriateness of the 70 ppb ozone NAAQS. As can be seen from a review of the most recent ozone design values (see: http://www.midwestozonegroup.com/files/Maximum_Daily_8hr_4th_highest_and_3yr_average_design_values_ppb_2014-2015.pdf and attached as Exhibit B) any relaxation of the standard would have the immediate effect of bringing significant portions of the country into compliance with the ozone NAAQS, thus eliminating the chilling impact of nonattainment on economic development and job growth.

In further support of the need to revise this rule, we are providing MOG's March 17, 2015 comments on the proposed 2015 ozone NAAQS identifying numerous other concerns about the rule (see http://midwestozonegroup.com/files/MOG_OZONE_NAAQS_COMMENTS.pdf and attached as Exhibit C).

3. Ozone NAAQS Implementation – Independent of the NAAQS standard itself, there are significant issues with the manner in which the agency has historically implemented the ozone NAAQS. MOG's detailed statement of these concerns is set forth in the February 13, 2017 comments filed on EPA's proposed 2015 ozone NAAQS implementation rule (see http://midwestozonegroup.com/files/2015OzoneNAAQSImplementationRuleLetterandComments.PDF and attached as Exhibit D) and the April 6, 2017 comments filed pursuant to EPA's NODA related to modeling data for the 2015 ozone NAAQS (see http://midwestozonegroup.com/files/2015OzoneNAAQSImplementationRuleLetterandComments.PDF and attached as Exhibit E). While we commend all of these comments to the Agency's review, the following comments highlight the significance of the issues involved:

a. EPA's modeling data is not appropriate to support regulatory action.

As pointed out in our comments on the 2015 ozone NAAQS NODA (Exhibit E), EPA modeling is fatally flawed. Not only does the modeling assume implementation of the CPP, the modeling fails to consider numerous other regulatory programs that may well bring into attainment with the 2015 ozone NAAQS enough of the remainder of the country to effectively resolve issues related to Good Neighbor SIPs. When these errors in model inputs are added to other defects such as failure to use an updated 2014 base case, failure to address model performance at the land/water interface and failure to determine the use of a source apportionment technique to determine "significant contribution" based only on man-made emission, it is obvious that a completely new set of modeling data must be developed.

b. EPA must allow the states time to develop their Good Neighbor SIP submittals in reliance on appropriate modeling data.

EPA will necessarily need to refine and redo its modeling related to implementation of the 2015 ozone NAAQS or any revision to that standard. Because the development of this alternative modeling is likely to take months to complete, EPA must allow states adequate time to receive the results of revised modeling in advance of their obligation to submit Good Neighbor SIPs as required by the Clean Air Act. This cannot be accomplished by the current deadline of October 2018 without forcing the states to use modeling data that is completely inappropriate.

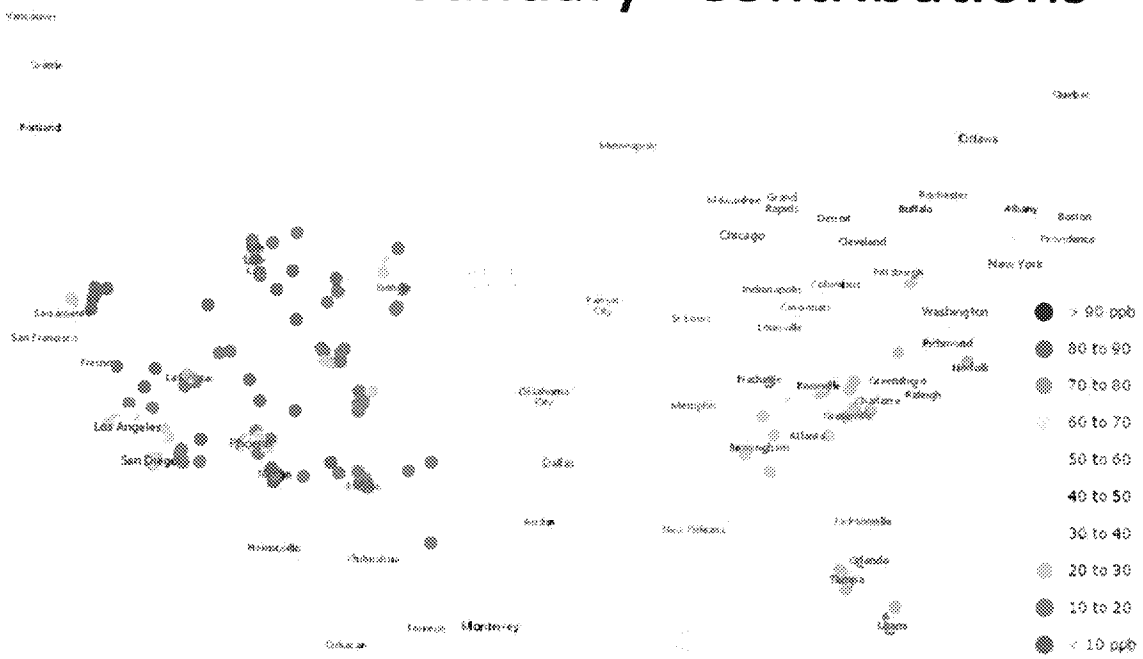
c. EPA must reconcile the date for the submission of Good Neighbor SIP with the attainment date for the ozone NAAQS.

As noted in our comments, states with non-attainment areas are legally mandated to impose emission reduction programs such as RACT by the non-attainment date of 2023. However, states are obligated to submit their Good Neighbor SIPs in 2018 to address any significant contribution that an upwind state might make to a downwind non-attainment area. Since an upwind state may not be required to reduce its emission by more than necessary for a downwind state to achieve attainment, it is critical that upwind states understand (prior to submitting Good Neighbor SIPs currently required in 2018) the nature of the legally mandated controls that will be applied for downwind states by 2023. We urge EPA to address this issue to avoid imposing upon upwind states the unnecessary and unlawful over control of emissions on their economies that are not needed to achieve attainment in downwind states.

d. International Emissions Impacts on Air Quality Must Be Addressed in EPA Policy.

EPA must assess the impact of international emissions as an integral part of the agency's implementation of the ozone NAAQS. In doing so, EPA has the opportunity and duty to develop a reasonable and reasoned approach to the issue of international emissions so that so-called "upwind states" are not subject to illegal mandates to over-control emissions as a result of CAA 110(a)(2)(D) Good Neighbor SIPs. An assessment of EPA's NODA projected 2023 8-hour ozone design values across the U.S. has been performed by Alpine Geophysics for MOG. A map of the data produced in this study set out below vividly illustrates that excluding the international/boundary emissions sector results in the conclusion that not a single monitor in the continental U.S. ends up with a design value exceeding 57 ppb.

2023 NODA MDA8 DVs (ppb) without "Boundary" Contributions



No monitor with dv greater than 57 ppb
Only 2 monitors with dv greater than 55 ppb / 33 with dv greater than 50 ppb

Data source: https://www.epa.gov/sites/production/files/2016-12/2015_o3_naaqs_preliminary_transport_assessment_design_values_contributions.xlsx

Modeling the U.S. emissions inventory projected to 2023 - but without the impact of unregulated emission categories - demonstrates that the Clean Air Act programs in the U.S. are performing as intended. Properly accounting for international emissions in the implementation of the ozone NAAQS would have a significant impact on economic development and job growth by resolving all ozone nonattainment in the nation.

Conclusion.

The Midwest Ozone Group greatly appreciates the opportunity to offer these suggested regulatory actions in the interest of the type of regulatory reform that is called for under Executive Order 13777.

Very truly yours,

David M. Flannery
Legal Counsel
Midwest Ozone Group

Message

From: Adam Gustafson [gustafson@boydengrayassociates.com]
Sent: 6/14/2017 6:20:10 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Re: RVP
Attachments: Yanowitz Testimony re E15 Emissions 20170614.pdf

Mandy,

I'd be interested to hear your take on today's EPW hearing on the Consumer and Fuel Retailer Choice Act (the 1 psi RVP waiver bill). It was not broadcast on C-SPAN, so I haven't seen the live testimony. But Janet Yanowitz's written statement is a useful summary of the relevant emissions studies (attached). It is consistent with our memo.

I'd also be interested to hear any reactions from OGC and OTAQ to our memo whenever a further conversation would be useful.

You can reach me at 202-577-5681 if you'd like to discuss.

Adam

From: "Gunasekara, Mandy" <Gunasekara.Mandy@epa.gov>
Date: Tuesday, May 30, 2017 at 11:24 PM
To: Adam Gustafson <gustafson@boydengrayassociates.com>
Cc: Andrew Varcoe <avarcoe@boydengrayassociates.com>, James Conde <conde@boydengrayassociates.com>
Subject: Re: RVP

Thank you, Adam. I appreciate the time you've put into this. I just forwarded it to the rest of our team and asked the program and OGC folks to use it to develop options/response.

I'll be in touch to discuss further.

Best,
Mandy

Sent from my iPhone

On May 30, 2017, at 11:11 PM, Adam Gustafson <gustafson@boydengrayassociates.com> wrote:

> Mandy,
>
> Thank you for the opportunity to meet with you and your colleagues last week to discuss EPA's legal authority to extend the 1 psi RVP waiver to E15. Here is our promised memo explaining why the various solutions we discussed are tools in EPA's regulatory toolbox.

We would welcome another conversation whenever that would be useful.

Adam

Adam R.F. Gustafson
Partner | **BOYDEN GRAY & ASSOCIATES**
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<RVP Waiver Memo 20170530e.pdf>

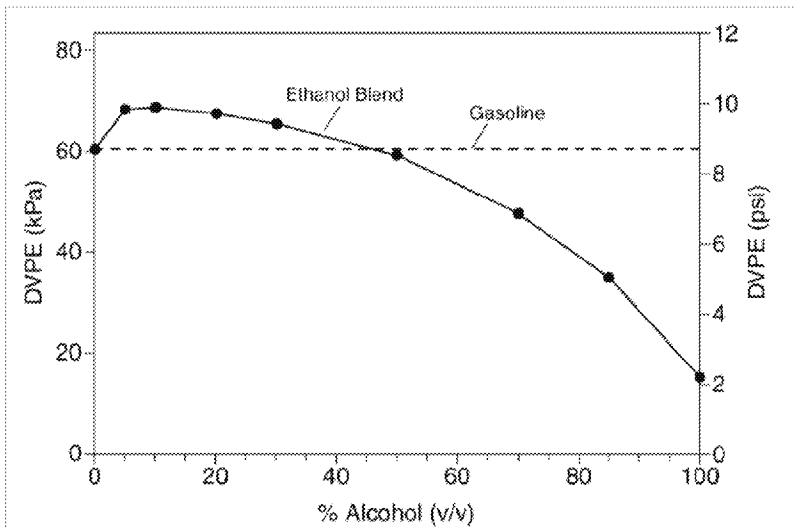
Testimony of
Janet Yanowitz, P.E., Ph.D.
Principal, EcoEngineering, Inc.
The United States Senate Committee on Environment and Public Works
Hearing On S.517, Consumer and Fuel Retailer Choice Act
June 14, 2017

This testimony summarizes the air emission impacts of using E15 (fuel which is 15% ethanol, 85% petroleum based) in place of E10 (fuel which is 10% ethanol, 90% petroleum based). It is provided to the Senate Committee on Environment and Public Works so that they may assess the effects of Senate Bill, S.517, that would allow E15 to have the same 1 psi vapor pressure allowance or waiver currently permitted for E10 (see box next page on regulatory background). At this time virtually all of the fuel sold in the U.S. is E10 and extending the 1 psi waiver to higher ethanol fuels will encourage the use of E15 in place of E10.

This report focuses primarily on the pollutants which impact ground-level ozone, i.e. volatile organic compounds (VOCs) and nitrogen oxides (NOx).

Fuel effects on motor vehicle emissions are difficult to quantify because

Impact of Ethanol on Vapor Pressure. The addition of 10% ethanol to a base hydrocarbon blendstock results in a roughly 1 psi (6.9 kPa) increase in vapor pressure. The addition of 15% ethanol to the same blendstock results in almost exactly the same impact on the vapor pressure. Dry vapor pressure equivalent, or DVPE, is the modern equivalent of Reid vapor pressure, or RVP.



different vehicles can behave quite differently. Nonetheless it can be concluded that replacing E10 with E15 that benefits from the same 1 psi waiver is a small change with minimal emissions impacts according to the best available emissions test data. On average, the total tailpipe organic emissions and the ozone forming potential of those organics will be expected to decrease or stay the same, and NOx is expected to be unchanged with a move to E15. Ethanol and acetaldehyde emissions will likely increase. Carbon monoxide will decrease.

This analysis is based on studies reported in the peer-reviewed scientific literature and by the coalition of petroleum and automobile companies that make up the Coordinating Research Council or CRC.

Perhaps the most applicable study was done in 2008 by a team comprised of scientists from three national laboratories.[1] They conducted emissions testing on 16 vehicles, model years ranging from 1999 through 2007 using E0, E10, E15 and E20. They found that increasing the ethanol content resulted in no significant effect on NOx or organic tailpipe emissions although the results varied widely among vehicles; CO emissions were reduced and ethanol and acetaldehyde emissions increased. Some of those results are shown in the figure below.

Regulatory Background. Ethanol and gasoline fuel mixtures are in common use in the United States with E10 (10% ethanol, 90% gasoline blendstock) comprising more than 90% of the retail fuel supply in recent years. In October 2010, the EPA expanded the use of ethanol by granting a waiver to allow the retail sale of concentrations of up to 15% ethanol in gasoline (E15) for use in light-duty on-highway vehicles model year 2007 and later. In January 2011, the waiver was expanded to allow the use of ethanol in older light-duty vehicles, model years 2001 to 2006.

When ethanol was first permitted as an additive in gasoline at concentrations of up to 10% in 1979, its effect on vapor pressure was not regulated. However, beginning with the implementation of the Clean Air Act Amendments of 1990, the United States Environmental Protection Agency (EPA) set the same maximum allowable RVP for both gasoline and gasoline/ethanol blends: for the summer high ozone season, 9.0 psi, with more stringent standards set for nonattainment areas. (The summertime high ozone season has been determined by the EPA to run from June 1 to September 15.)

However, only two years later, new EPA regulations (40 CFR 80.27) provided a 1-psi waiver for ethanol blends that contained between 9 and 10 percent ethanol. The purpose of the 1-psi waiver was to support the emerging ethanol industry. At that time EPA believed it would be difficult to economically justify a separate storage and distribution system for the small amount of lower vapor pressure gasoline needed for ethanol blending, with the result that low RVP fuel for ethanol blending would not be made available. The waiver allowed E10 to be made with the same gasoline distributed as fuel to be used without ethanol addition.

Today the 1 psi waiver is not available for E15. Because it is not, lower cost (i.e. higher DVPE) blendstock can be used with E10 than in E15 with the result that little E15 is marketed.

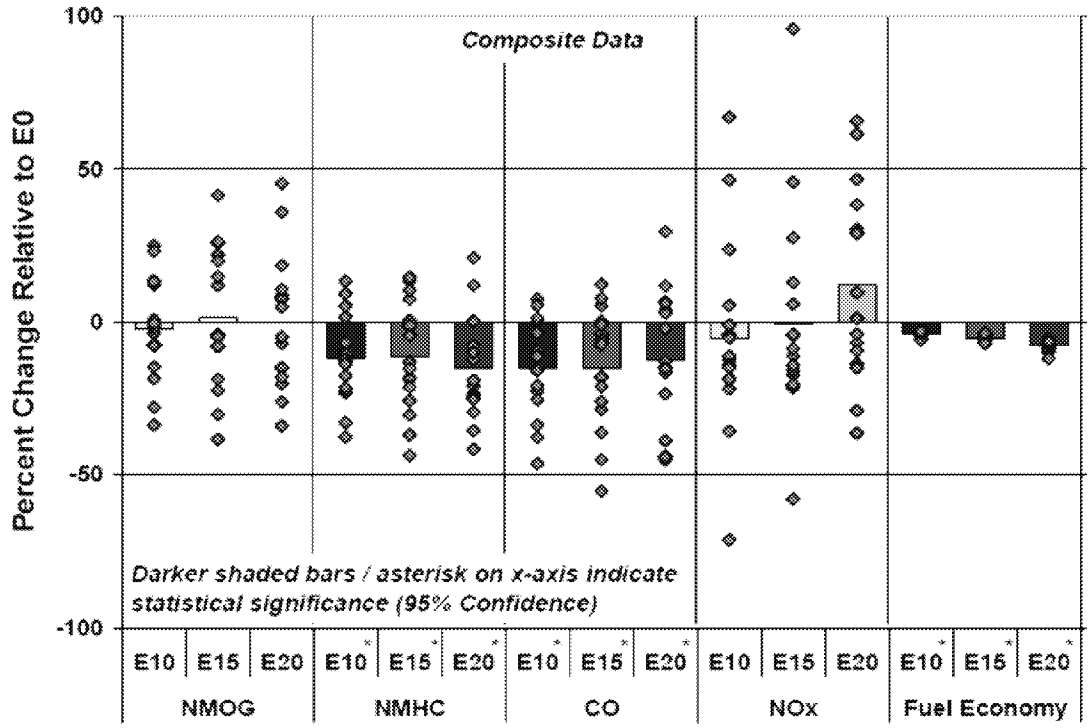


Figure 2. Percentage change in emissions from vehicles using different ethanol content fuels. [3] Diamonds are individual emissions measurements, bars are average emission results. NMOG = non-methane organic gas; NMHC = non-methane hydrocarbons.

Similar results on three post 2001 model year vehicles were reported by Karavalakis and his colleagues at UC Riverside (one of which was not tested on E15 but was tested on E20).[2,3] The CRC also reported that increased ethanol content up to 20% ethanol reduced CO emissions (based on testing of E0, E10 and E20), although the same study also reported an increase in NOx emissions with higher ethanol content.[4] Air Improvement Resources, Inc.[5] analyzed the results of the twelve 2001 and newer vehicles included in another DOE study[6] tested on E0, E10, E15 and E20 and found that non-methane hydrocarbons (NMHC), carbon monoxide and NOx trended slightly lower with higher ethanol contents. In another study conducted by a subcontractor to NREL, NMHC and carbon monoxide emissions were either equal or lower for six vehicles aged and then emissions tested on E15 versus E0, and NOx emissions were not statistically different.[7]

The total amount and composition of the organics emitted provides a rough gauge of the ozone forming potential of the emissions, as not all organics are equally prone to reacting to form ozone. Thus studies which considered the reactivity of the specific organics released are more accurate at determining the ozone forming potential of the emissions. The UC Riverside team

did this analysis for emissions from two 2012 model year vehicles and found that the ozone reactivity for emissions from E15 were less than those for E10 as shown in the figure below.

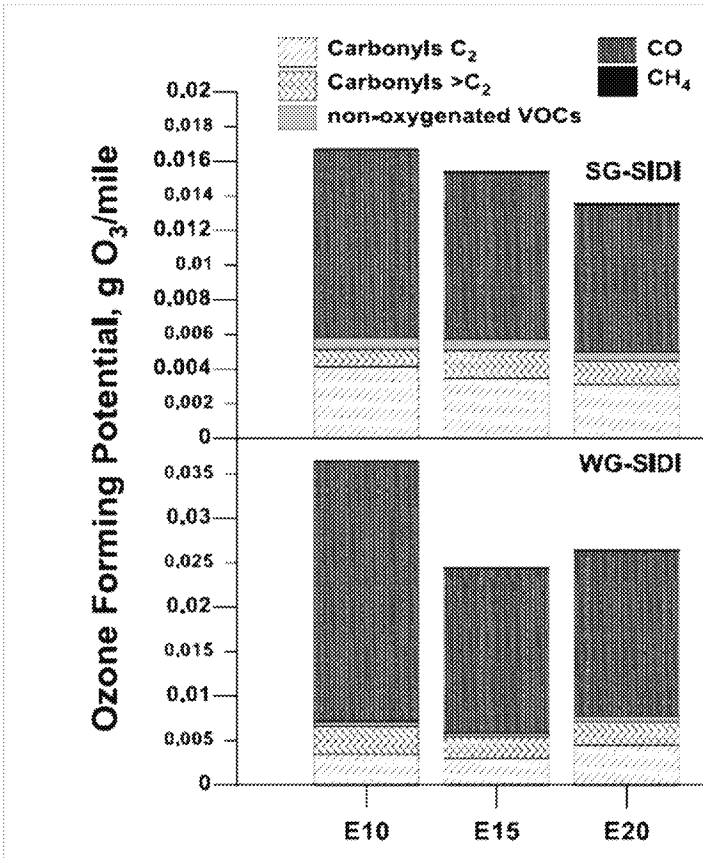


Figure 3. Ozone forming potential of exhaust from vehicles using different ethanol content fuels.[4]

Although, testing on flex-fuel vehicles may not be representative of non-flex-fuel vehicles, it does seem likely that changes in ethanol content would have the same effect on the relative proportion of different organics in the exhaust. For that reason, I also considered the results reported by the CRC in 2011. They found that the ozone forming potential of flex-fuel vehicles did not increase with increased ethanol content in the fuel and in one case decreased.[8]

In addition to tailpipe emissions, vehicles emit additional organic compounds to the atmosphere via evaporation or permeation. There have been no significant studies comparing evaporative emissions of E15 and E10. Two studies[9,10] made with E20 and E10 show mixed results, suggesting that increases in evaporative emissions between vehicles using E10 and E15 of the same vapor pressure are small or non-existent. In another study, limited data from the testing of four vehicles using E0 and E15 showed no significant differences between the two fuels.[11]

In conclusion, the available emissions test data indicates that replacing E10 with an E15 of the same vapor pressure will cause a slight decrease in emissions of ozone forming organic compounds and carbon monoxide, and no change in NOx.

---

[1] Knoll, K., B. West, S. Huff, J. Thomas, J. Orban, C. Cooper, "Effects of Mid-Level Ethanol Blends on Conventional Vehicle Emissions," SAE Technical Paper No. 2009-01-2723, 2009, doi:10.4271/2009-01-2723.

[2] Karavalakis, G., D. Short, D. Vu, R.L. Russell, A. Asa-Awuku, H. Jung, K.C. Johnson, T. D. Durbin, "The impact of ethanol and iso-butanol blends on gaseous and particulate emissions from two passenger cars equipped with spray-guided and wall-guided direct injection SI (spark ignition) engines, Energy, 82 (2015)168-179.

[3] Karavalakis, G., T.D. Durbin, M. Shrivastava, Z. Aheng, M. Villela, H. Jung, "Impacts of ethanol fuel level on emissions of regulated and unregulated pollutants from a fleet of gasoline light-duty vehicles," Fuel (3 (2012) 549-558.

[4] CRC E-74b, Effects of Vapor Pressure, Oxygen Content and Temperature on CO Exhaust Emissions, May 2009 https://crcao.org/reports/recentstudies2009/E-74b/E-74b%20Revised%20Final_Report_SR20090503.pdf, accessed June 9, 2017.

[5] Air Improvement Resources, Effects of E15 Ethanol Blends on HC, CO and NOx Regulated Emissions from On-Road 2001 and Later Model Year Motor Vehicles, July 15, 2011

[6] Knoll, K., B. West, W. Clark, R. Graves, J. Orban, S. Przesmitzki, T. Theiss, Effects of Intermediate Ethanol Blends on Legacy Vehicles and Small Non-Road Engines, February 2009, NREL/TP-540-43543; ORNL/TM-2008/117..

[7] Vertin, K., G. Glinsky, A. Reek, Comparative Emissions Testing of Vehicles Aged on E0, E15 and E20 Fuels, SGS Environmental Testing Corporation, Aurora, CO, NREL/SR-5400-55778.

[8] CRC E-80, Exhaust and Evaporative Emissions Testing of Flexible-Fuel Vehicles, August 2011. https://crcao.org/reports/recentstudies2011/E-80/E-80%20Final%20Report+Appendices.pdf, accessed June 9, 2017.

[9] CRC E- 65-3, Fuel Permeation form Automotive Systems: E0, E6, E10, E20 and E85, December 2006, accessed June 9, 2017.

[10] CRC E 77-2, Enhanced Evaporative Emission Vehicles, March 2010, accessed June 9, 2017.

[11] Vertin, K., G. Glinsky, A. Reek, Comparative Emissions Testing of Vehicles Aged on E0, E15 and E20 Fuels, SGS Environmental Testing Corporation, Aurora, CO, NREL/SR-5400-55778.

Message

From: Shepherd, Ray [rayshepherd@peabodyenergy.com]
Sent: 6/15/2017 4:12:01 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Do you have time for a quick call this afternoon or tomorrow AM?

Many thanks

Ray Shepherd
Vice President & Senior Counsel, Federal Government Affairs
Peabody Energy Corporation
801 PA Avenue, NW | Suite 212 | Washington, DC 20004
Phone: (202) 942-4301 | Cell 202-765-8680
rayshepherd@peabodyenergy.com

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Message

From: Moore, James D [Jamie.D.Moore@tsocorp.com]
Sent: 6/7/2017 10:41:03 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: RE: permit question

Appreciate you getting back to me. Next week will work. Alex, let me know if a particular time works well next week and I will block that off. Safe travels Mandy.

Jamie

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Wednesday, June 07, 2017 6:31 PM
To: Moore, James D
Cc: Dominguez, Alexander
Subject: Re: permit question

James,
I'd be happy to chat but am in Italy until Tuesday. Would it work to touch base some time next week? I've CC'd Alex who can help arrange a good time.
Best,
Mandy

Sent from my iPhone

On Jun 7, 2017, at 8:39 PM, Moore, James D <Jamie.D.Moore@tsocorp.com> wrote:

> Hi Mandy. Hope all is well your way. Would you have a couple mins to chat? Had a permit question and wanted to get some direction and guidance from you. Thanks in advance.
>
> Jamie D. Moore
> Director Federal Government Affairs
> Tesoro Companies, Inc.
> 601 Pennsylvania Avenue N.W.
> Suite 850
> Washington, D.C. 20004
> (202) 803 5960 office
> (202) 821 6900 cell

Message

From: Schemmel, Nick [Nick.Schemmel@mail.house.gov]
Sent: 6/8/2017 9:30:53 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Draft Legislation - Greenhouse Gas Emissions and Self-Propelled Vehicles
Attachments: Draft Legislation - Greenhouse Gas Emissions and Trailers.pdf

Hi Mandy – I wanted to follow-up in the hopes of getting your opinion on the attached legislation. I've been working with the Energy & Commerce Committee here on the House side and Ben mentioned I reach out to you to discuss our draft. Please let me know if you'd have some availability soon to discuss, thanks!

Sincerely,

Nick Schemmel
Rep. Earl L. 'Buddy' Carter (GA-01)
432 Cannon House Office Building
Washington, D.C. 20515
202-225-5831

From: Schemmel, Nick
Sent: Thursday, May 25, 2017 11:10 AM
To: 'Gunasekara.Mandy@epa.gov'
Subject: Draft Legislation - Greenhouse Gas Emissions and Self-Propelled Vehicles

Hi Mandy,

Your contact information as passed along to me as I understand your portfolio would cover Clean Air Act issues. I wanted to reach out to discuss the attached draft legislation that my boss in interested in pursuing. If you have some time tomorrow or next week to review and discuss this, I'd love to chat briefly about this approach and EPA's take on it. Please let me know if any those dates or times could work for you.

My direct is Personal Phone / Ex. 6 thanks!

Nick Schemmel
Rep. Earl L. 'Buddy' Carter (GA-01)
432 Cannon House Office Building
Washington, D.C. 20515
202-225-5831

Message

From: Lynn L. Bergeson [lbergeson@lawbc.com]
Sent: 6/16/2017 1:32:51 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Urgent Matter

Not one that bears on the forthcoming final rules, however.

LYNN L. BERGESON
MANAGING PARTNER
BERGESON & CAMPBELL PC
2200 Pennsylvania Avenue, N.W. Suite 100W | Washington, D.C. 20037
T: 202-557-3801 | F: 202-557-3836 | M: 202-257-2872 | lawbc.com

---

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Friday, June 16, 2017 9:24 AM
To: Lynn L. Bergeson
Subject: RE: Urgent Matter

Hi Lynn,

Is this a TSCA related matter?

From: Lynn L. Bergeson [mailto:lbergeson@lawbc.com]
Sent: Friday, June 16, 2017 9:13 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: RE: Urgent Matter

Hi Mandy,

Traveling today so **Personal Phone / Ex. 6**

LYNN L. BERGESON
MANAGING PARTNER
BERGESON & CAMPBELL PC
2200 Pennsylvania Avenue, N.W. Suite 100W | Washington, D.C. 20037
T: 202-557-3801 | F: 202-557-3836 | M: 202-257-2872 | lawbc.com

---

From: Lynn L. Bergeson
Sent: Thursday, June 15, 2017 9:46 AM
To: Gunasekara.Mandy@epa.gov
Subject: Urgent Matter

Hi Mandy,

I met you when NACD visited with Administrator Pruitt a few weeks ago. We work with Jennifer, Lucinda, and Eric on a variety of topics, including TSCA. Would you have any time, at any time, for a short call?

LYNN L. BERGESON
MANAGING PARTNER
BERGESON & CAMPBELL PC
2200 Pennsylvania Avenue, N.W. Suite 100W | Washington, D.C. 20037
T: 202-557-3801 | F: 202-557-3836 | M: 202-257-2872 | lawbc.com

Message

From: Competitive Enterprise Institute [dinner@cei.org]
Sent: 6/5/2017 8:41:45 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: See you Wednesday at the 2017 CEI Dinner and Reception

We're looking forward to seeing you at CEI's Annual Dinner and Reception this week!

Thank you for your RSVP to the Competitive Enterprise Institute's Annual Dinner and Reception on June 7, 2017. If you or your guest(s) can no longer attend, please email dinner@cei.org. Your cancellation notice will allow CEI to open a seat for a guest on our waitlist.

Location: We've moved to a new hotel this year! The dinner will be hosted at the Marriott Marquis at 901 Massachusetts Avenue NW.
Check-in at the hotel is on level M1 (one level below the lobby).

Helpful Information:
Valet parking at the hotel is $35.
The Mt. Vernon Square/Convention Center Metro Station (Yellow/Green) is two blocks from the hotel.
Business Attire

Evening Timeline:
Reception at 6:00 p.m.
Dinner at 7:15 p.m.
After Party to Follow at 9:00 p.m.

Questions? Please contact dinner@cei.org or call us at (202) 331-1010. Dinner speakers and details can be found at cei.org/dinner.

Unsubscribe

Message

From: Joseph Mendelson [jmendelson@tesla.com]
Sent: 6/6/2017 5:07:20 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]; Joseph Mendelson (SolarCity) [jmendelsoniii@solarcity.com]
CC: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: RE: Hello & Touching Base

Thanks, Mandy.

Alex, please let me know what days and/or times would work.

My best,
Joe Mendelson

Joseph Mendelson | Senior Counsel | Policy and Business Development
601 13th Street, NW, 9th Fl. N. | Washington, DC 20005
c 703.244.1724 | e jmendelson@tesla.com

TESLA

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Please consider the environment before printing this email.

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Tuesday, June 06, 2017 12:59 PM
To: Joseph Mendelson (SolarCity)
Cc: Dominguez, Alexander
Subject: Re: Hello & Touching Base

Hi Joe,
Great to hear from you. Late next week would likely work. I've CC'd Alex who can help work out the specifics.
Look forward to catching up soon.
Best,
Mandy
Sent from my iPhone

On Jun 6, 2017, at 6:51 PM, Joseph Mendelson <jmendelsoniii@solarcity.com> wrote:

Hi Mandy,

I hope this finds you doing well and settled in to your new role. Always good to see EPW alumni in top positions!

I was hoping I could set up a time to meet to catch up and discuss a few things Tesla. Would you be available sometime next week?

My best,
Joe

Joseph Mendelson | Senior Counsel | Policy and Business Development

601 13th Street, NW, 9th Fl. N. | Washington, DC 20005

c 703.244.1724 | e jmendelson@tesla.com

<image001.png>

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<image002.png> <image003.png> <image004.png>

Please consider the environment before printing this email.

Message

From: Lynn L. Bergeson [lbergeson@lawbc.com]
Sent: 6/16/2017 1:30:53 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Urgent Matter

Yes

LYNN L. BERGESON
MANAGING PARTNER
BERGESON & CAMPBELL PC
2200 Pennsylvania Avenue, N.W. Suite 100W | Washington, D.C. 20037
T: 202-557-3801 | F: 202-557-3836 | M: 202-257-2872 | lawbc.com

---

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Friday, June 16, 2017 9:24 AM
To: Lynn L. Bergeson
Subject: RE: Urgent Matter

Hi Lynn,

Is this a TSCA related matter?

From: Lynn L. Bergeson [mailto:lbergeson@lawbc.com]
Sent: Friday, June 16, 2017 9:13 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: RE: Urgent Matter

Hi Mandy,

Traveling today so 202.257-2872.

LYNN L. BERGESON
MANAGING PARTNER
BERGESON & CAMPBELL PC
2200 Pennsylvania Avenue, N.W. Suite 100W | Washington, D.C. 20037
T: 202-557-3801 | F: 202-557-3836 | M: 202-257-2872 | lawbc.com

---

From: Lynn L. Bergeson
Sent: Thursday, June 15, 2017 9:46 AM
To: Gunasekara.Mandy@epa.gov
Subject: Urgent Matter

Hi Mandy,

I met you when NACD visited with Administrator Pruitt a few weeks ago. We work with Jennifer, Lucinda, and Eric on a variety of topics, including TSCA. Would you have any time, at any time, for a short call?

LYNN L. BERGESON
MANAGING PARTNER
BERGESON & CAMPBELL PC
2200 Pennsylvania Avenue, N.W. Suite 100W | Washington, D.C. 20037
T: 202-557-3801 | F: 202-557-3836 | M: 202-257-2872 | lawbc.com

Message

From: Rachel Feinstein [feinstein@hpba.org]
Sent: 6/5/2017 8:25:49 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Patrick Rita [PRita@orionadvocates.com]; Chung, David (DChung@crowell.com) [DChung@crowell.com]
Subject: HPBA Biomass Hearth Industry Jobs Estimate
Attachments: HPBA Report on the Size of the U.S. Biomass Hearth Appliance Industry.pdf

Hi Mandy,

I hope all is well on your end. Per your request from our April 20, 2017 meeting, please find attached a brief summary on the number of jobs provided by the U.S. biomass hearth industry. We estimate that the industry provides at least **38,250 jobs** in the U.S. The methodology behind this finding is included in the attached. Will this number be used only in internal memos or in a more public setting?

Could you give me a call when you have a moment? I have a time-sensitive question regarding our litigation and the discussions with OAQPS staff.

Please let me know if you have any questions and I look forward to speaking with you soon.

Thank you,
Rachel

Rachel Feinstein | Manager – Government Affairs
Hearth, Patio & Barbecue Association
1901 North Moore Street, Suite 600 | Arlington, VA 22209
OFFICE: 703-522-0086 x 109 | **MOBILE**: 703-828-4724
Visit us online today! | feinstein@hpba.org

Hearth, Patio & Barbecue Association

Suite 600, 1901 North Moore Street
Arlington, VA 22209 USA
Phone: (703) 522-0086 • Fax: (703) 522-0548
Email: governmentaffairs@hpba.org
Website: www.hpba.org

June 5, 2017

Hearth, Patio & Barbecue Association's (HPBA) Report on the Size of the U.S. Biomass Hearth Appliance Industry

ABOUT HPBA

Based in Arlington, Virginia, HPBA is the principal national industry association representing manufacturers, retailers, distributors, representatives, service firms, and allied associates for all types of hearth, barbecue, and patio appliances, fuels, and accessories, including solid fuel-fired home heating appliances (e.g. woodstoves, pellet stoves, hydronic heaters, and warm air furnaces). With 2,200 member companies, the association provides professional member services and industry support in education, statistics, government relations, marketing, advertising, and consumer education.

BACKGROUND

To determine the number of jobs provided by the U.S. biomass hearth appliance industry, HPBA contacted manufacturers of biomass hearth appliances as well as all known (both HPBA members and non-members) retailers, distributors, manufacturers' representatives, servicers, and chimney sweeps. The manufacturer population is limited to manufacturers of wood and pellet stoves and inserts, hydronic heaters, and wood furnaces (i.e. forced-air furnaces). All of these product types are regulated by the EPA's New Source Performance Standards (NSPS) for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces (80 Fed. Reg. 13672. (March 16, 2015)) ("NSPS"). Almost the entire industry is comprised of small businesses who serve rural communities.

FINDINGS

HPBA estimates that the biomass hearth industry provides about **38,250 jobs** in the United States. Table 1 provides a breakdown of employment numbers by business type.

TABLE 1. ESTIMATED U.S. BIOMASS HEARTH INDUSTRY EMPLOYMENT BY BUSINESS TYPE

Business Type	Estimated U.S. Employment
Biomass hearth appliance manufacturers	6,200
Biomass hearth non-manufacturers (retail, distribution, manufacturers' reps, service/sweeps)	30,000
Wood pellet production	2,050
Total	***38,250***

METHODOLOGY

A combination of primary data collection and comparative analysis from secondary data sources was used to calculate the estimated number of U.S. jobs potentially affected by the NSPS. For primary data collection, a non-scientific census was conducted between May 1, 2017 and May 30, 2017 asking hearth manufacturers and non-manufacturers to provide their employment figures (all employees on their payroll, both full-time and part-time) from 2016. Over 500 companies responded and represent a little over 12,000 jobs.

Establishing estimates for the entire categories required filling in the gaps on census non-respondents as well as companies not contacted.

Calculating Manufacturer Employment Levels: Average manufacturer employment was calculated using HPBA dues class data. HPBA membership dues classes are determined for each HPBA manufacturer member by a company's reported calendar year sales in North America (U.S., Canada, Mexico). Non-respondent manufacturers were assigned the average as their estimate based upon their HPBA dues class.

From a secondary resource analysis perspective, for manufacturers, an average number of employees per unit shipped were calculated using data collected under HPBA's hearth shipment program cross referenced with US Census' Annual Survey of Manufacturers report. This was then cross referenced with the HPBA employment census to calculate the total size of the hearth manufacturing industry. This combination of values was input to create a manufacturer employment estimate.

Calculating Non-Manufacturer Employment Levels: Similar secondary data for the non-manufacturing jobs was collected using Dun and Bradstreet employment and installation information by relevant NAICS codes, National Retail Federation employment and industry data, and Bureau of Labor and Statistics data. Cross referencing these data sets with submitted employment figures and using created estimates for non-responding companies by calculated average employment by business type (distributors, manufacturers' representatives, retailers, and servicers/sweeps) yields the total non-manufacturer employment figure.

Source of Pellet Production Employment Figure: Pellet production job figures come from Energy Information Administration (EIA). EIA collects pellet production employment information numbers along with pellet production volume information from pellet fuel manufacturers as part of the Densified Biomass Fuel Report (Form EIA-63C) which was first launched in January 2016.

Message

From: Brian Diffell [diffell@wtppgroup.com]
Sent: 5/31/2017 6:53:23 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Sterling

Mandy, Amy just sent around a readout of your discussion. I can't thank you enough for your efforts. Hopefully this helped your cause some internally as well!

Please let me know if I can ever be helpful.

Brian

Sent from my iPhone

Message

From: Marc Himmelstein [Marc_Himmelstein@nes-dc.com]
Sent: 6/14/2017 5:46:58 PM
To: Jackson, Ryan [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=38bc8e18791a47d88a279db2fec8bd60-Jackson, Ry]
CC: Michael Catanzaro [EOP / Ex. 6]; Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Re: meeting

Ok, how-they can be in town whenever
Thx

Sent from my iPad

> On Jun 14, 2017, at 1:45 PM, "Jackson, Ryan" <jackson.ryan@epa.gov> wrote:
>
> Yes.
>
> -----Original Message-----
> From: Marc Himmelstein [mailto:Marc_Himmelstein@nes-dc.com]
> Sent: Wednesday, June 14, 2017 12:14 PM
> To: Jackson, Ryan <jackson.ryan@epa.gov>
> Cc: Michael Catanzaro [EOP / Ex. 6]
> Subject: meeting
>
> Is it possible to set up a meeting with you and Mandy with QEP Recall that the Administrator at AXPC suggested that he wanted to meet-it is not necessary to include him Appreciate your help Thx
>
> Sent from my iPad

Message

From: Spencer, Stuart [SPENCER@adeq.state.ar.us]
Sent: 6/7/2017 9:59:21 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: FW: ADEQ letter re: intent to submit Regional Haze SIP
Attachments: doc03166220170607163157.pdf

Mandy,

I hope you're doing well. It's been a while since we talked last. I wanted to make you aware of a letter we (ADEQ) sent today to Region 6 regarding our intent to submit a SIP(s) to submit the current Regional Haze FIP. I'll give you a call tomorrow to follow-up on information in the letter.

Thanks!

Stuart

From: Spencer, Stuart
Sent: Wednesday, June 07, 2017 4:41 PM
To: Coleman.Sam@epa.gov; Stenger, Wren (stenger.wren@epa.gov); Donaldson, Guy (Donaldson.Guy@epa.gov)
Cc: Nann, Barbara (nann.barbara@epa.gov); Montgomery, William
Subject: ADEQ letter re: intent to submit Regional Haze SIP

Sam, Wren, and Guy-

Please find attached the long-awaited ADEQ letter detailing our intent to submit a SIP(s) regarding the disapproved portions of our initial SIP submittal. Let me know if you have any questions regarding its content. And most important, thank you for the continued engagement!

Stuart

ADEQ
ARKANSAS
Department of Environmental Quality

June 7, 2017

Sam Coleman
Region 6 Acting Administrator
Environmental Protection Agency, Region 6
1445 Ross Ave., Suite 1200
Dallas, Texas 75202-2733

RE: Arkansas Regional Haze FIP/SIP

Dear Mr. Coleman:

Thank you for your continued engagement with ADEQ on issues associated with Arkansas's Regional Haze plan. ADEQ intends to complete development of revisions to the disapproved parts of the State Implementation Plan (SIP) in a truncated timeframe and submit them to EPA as soon as practicable to ensure a swift return of the Regional Haze program to the State of Arkansas. We anticipate proposing SIP revisions in one of two forms discussed below no later than late summer of 2017. We request that EPA review and approve the SIP revisions as expeditiously as possible and take action no later than six months after receipt of the ADEQ's SIP revision packages.

While we welcomed the Region's decision to grant a partial reconsideration of its Federal Implementation Plan (FIP), the Federal Register notice neither addressed certain critical issues, nor provided adequate certainty as to a mechanism for relief from the measures in the FIP to be reconsidered. Therefore, we continue to request that EPA stay and toll the FIP's compliance deadlines while it reconsiders all matters raised in the petitions for reconsideration until such time as the Region approves our SIP revisions.

As we have previously stated, and as the Region has agreed, the ultimate goal of our efforts is to return the Regional Haze program implementation to the State by approving our SIP. The SIP will rescind and supplant the FIP by addressing appropriate controls based on visibility conditions and trends, while considering the remaining useful life of the affected facilities and the cost of controls. ADEQ is well underway in engaging stakeholders and developing approvable revisions to our Regional Haze SIP for submittal to EPA. These revisions are intended to address the portions of the State's original Regional Haze SIP submitted in 2008 and disapproved in 2012.

ADEQ is considering two options for submission of revisions: a single SIP revision addressing all disapproved elements of the 2008 Regional Haze SIP or two partial SIP revisions. The two partial SIP revisions option would consist of one partial SIP revision to address nitrogen oxide emissions from electric generating units and a second partial SIP revision to address the

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
5301 NORTHSHORE DRIVE / NORTH LITTLE ROCK / ARKANSAS 72118-5317
TELEPHONE 501-682-0744 / FAX 501-682-0880 / www.adeq.state.ar.us

remaining disapproved elements of the 2008 Regional Haze SIP. If we choose to submit a single SIP revision package, we anticipate that proposal would occur in late summer 2017. If we choose to submit multiple partial SIP revision packages, we anticipate that proposal of the nitrogen oxides partial SIP revision would occur in July of 2017 and the second partial SIP revision proposal would occur in late summer 2017. We will provide a draft version of the SIP to both the Region and parties of interest in late-June or early July, 2017.

To further minimize potential costs to ratepayers, ADEQ requests a stay be granted for NOx emission limits for Arkansas subject-to-BART electric generating units and Entergy Independence included in the 2016 rule "Promulgation of Air Quality Implementation Plans; State of Arkansas; Regional Haze and Interstate Visibility Transport Federal Implementation Plan; Final Rule." This stay is requested until EPA's final action on the Arkansas SIP revisions as described above.

We look forward to submitting an approvable plan to you. In the interim, our collaborative efforts will continue and we will keep you apprised at every step of the process.

Sincerely,

Becky W. Keogh
Director

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
5301 NORTHSHORE DRIVE / NORTH LITTLE ROCK / ARKANSAS 72118-5317
TELEPHONE 501-682-0744 / FAX 501-682-0880 / www.adeq.state.ar.us

Message

From: Joseph Mendelson [jmendelsoniii@solarcity.com]
Sent: 6/6/2017 4:50:20 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Hello & Touching Base

Hi Mandy,

I hope this finds you doing well and settled in to your new role. Always good to see EPW alumni in top positions!

I was hoping I could set up a time to meet to catch up and discuss a few things Tesla. Would you be available sometime next week?

My best,
Joe

Joseph Mendelson | Senior Counsel | Policy and Business Development
601 13th Street, NW, 9th Fl. N. | Washington, DC 20005
c 703.244.1724 | e jmendelson@tesla.com

TESLA

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Please consider the environment before printing this email.

Message

From: Kelli Ripp [ripp@invariantgr.com]
Sent: 6/6/2017 4:47:10 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: RE: Meeting Request with Administrator Pruitt

Mandy, thanks so much, we'd be glad to meet with you. Since the request was sent, several scheduling conflicts came up in June, but I am working on July and will circle back with Alex with some dates shortly.

Thanks again,
Kelli

-----Original Message-----
From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Monday, June 5, 2017 2:57 PM
To: Kelli Ripp <ripp@invariantgr.com>
Cc: Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: Meeting Request with Administrator Pruitt

Hi Kelli,

Sydney Hupp forwarded me your meeting request as the Administrator is unavailable. I'm his Senior Policy Advisor for the Office of Air and Radiation and would be happy to set up a meeting to discuss refrigerant issues. I have CC'd Alex Dominguez who can help set up the logistics. Later in June would work best on my end. Please let me know what dates would work for you.

Best,
Mandy

Sent from my iPhone

Message

From: Riddle, Ken [Ken.Riddle@lakelandgov.net]
Sent: 5/31/2017 11:39:39 AM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Re: Board of Scientific Counselors (BOSC)

I'll nominate myself. ;-)

On May 30, 2017, at 11:24 PM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

> I think you'd be a great fit ;)
>
> Sent from my iPhone
>
> On May 30, 2017, at 3:10 PM, Riddle, Ken <Ken.Riddle@lakelandgov.net> wrote:
>
> > Mandy,
> >
> > I think I'll apply. lol
> >
> > *Ken Riddle*
> > Supervisor of Chemical Processes
> > Lakeland Electric
> > 3030 East Lake Parker Drive
> > Lakeland, FL 33805
> > (863)-834-5639 Office
> > (863)-660-3626 Mobile
> > <image001.jpg>
>
> PUBLIC RECORDS NOTICE:

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<EPA areas_of_expertise.docx>

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Message

From: Gunasekara, Surya [Surya@mail.house.gov]
Sent: 6/7/2017 9:27:14 AM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Re: President Donald J. Trump Announces Key Additions to his Administration

Personal Matters / Ex. 6

Surya G. Gunasekara
Chief of Staff
Congressman Renacci (OH-16)

Sent from my iPhone

On Jun 7, 2017, at 3:12 AM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

Personal Matters / Ex. 6

Sent from my iPhone

On Jun 6, 2017, at 11:52 PM, Gunasekara, Surya <Surya@mail.house.gov> wrote:

Personal Matters / Ex. 6

Surya G. Gunasekara
Chief of Staff
Congressman Renacci (OH-16)

Sent from my iPhone

Begin forwarded message:

From: White House Press Office <whitehouse-noreply@useopwh.service.govdelivery.com>
Date: June 6, 2017 at 5:47:46 PM EDT
To: <surya@mail.house.gov>
Subject: President Donald J. Trump Announces Key Additions to his Administration
Reply-To: <whitehouse-noreply@useopwh.service.govdelivery.com>

THE WHITE HOUSE
Office of the Press Secretary

FOR IMMEDIATE RELEASE
June 6, 2017

President Donald J. Trump Announces Intent to Nominate Personnel to Key Administrat

President Donald J. Trump today announced his intent to nominate the following individuals to
in his Administration:

Jeffrey Bossert Clark of Virginia to be an Assistant Attorney General, Environment and Natur at the Department of Justice. Mr. Clark is a partner in the Washington, D.C. office of Kirkland & is a complex trial and appellate litigator with especially deep experience in administrative law, c dozens of statutes and numerous agencies. Mr. Clark has been with Kirkland since 1996, with the his period of service by virtue of appointment by the Attorney General in the U.S. Department o 2001-2005. He has worked on cutting-edge cases in numerous areas of law, and argued and won cases in multiple Circuits. From 2001 to 2005, Mr. Clark was the Deputy Assistant Attorney Gene Environment and Natural Resources Division of the Justice Department. While there, he supervi Appellate Section (50 lawyers and staff) and the Indian Resources Section (25 lawyers and staff). that period, he reviewed, edited, or contributed to virtually every brief the Environment Divisio Department of Justice filed in the Courts of Appeals, including several cases of exceptional signi personally briefed and argued. He also worked on every Supreme Court environmental or natur case during this same period.

Ryan McCarthy of Illinois to be Under Secretary of the Army. Mr. McCarthy most recently ser President of the Sustainment Program for the F-35 program at Lockheed Martin, where he imple restructuring and organizational redesign of the sustainment line of business. At Lockheed Mart a variety of roles on the F-35 Program and at the Corporate Office. In addition, he served as Spec to Secretary of Defense Robert Gates. Prior to serving at the Department of Defense, Mr. McCart professional staff member on the U.S. House of Representatives Committee on International Rela in his career, he served at the Hong Kong Shanghai Bank Corporation's North America Unit in t Label Credit Card Business. He also served in the 75th Ranger Regiment during the invasion of Mr. McCarthy is a graduate of the Virginia Military Institute, and has a Master's in Business Adr from the University of Maryland.

President Donald J. Trump Announces Continuation of Dr. Francis Collins as Director of t Institutes of Health

President Donald J. Trump today announced the continuation of Dr. Francis Collins as Director Institutes of Health.

Dr. Francis Collins will continue to serve as the Director of the National Institutes of Health. physician-geneticist noted for his landmark discoveries of disease genes and his leadership of th Human Genome Project, which culminated in April 2003 with the completion of a finished seque human DNA instruction book. He served as director of the National Human Genome Research I NIH from 1993-2008. Before coming to NIH, Dr. Collins was a Howard Hughes Medical Institute at the University of Michigan. He is an elected member of the National Academy of Medicine an Academy of Sciences, was awarded the Presidential Medal of Freedom in November 2007, and r National Medal of Science in 2009. He served as director of the National Human Genome Resear NIH from 1993-2008, and has served as NIH Director since 2009.

###

Unsubscribe

The White House · 1600 Pennsylvania Avenue, NW · Washington DC 20500 · 202-456-1111

Message

From: Betsy Monseu [bmonseu@americancoalcouncil.org]
Sent: 6/6/2017 4:24:49 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: FW: American Coal Council thanks and invitation

Mandy, I am checking back on the status of EPA's consideration of the speaking invitation for our upcoming conference. Please let me know if there are any questions or if any other information is needed from me.

Thanks, Betsy

Betsy B. Monseu | CEO | American Coal Council
1101 Pennsylvania Ave. NW, #300
Washington, DC 20004
Office 202.756.4540 | Direct 202.805.2310
bmonseu@americancoalcouncil.org
www.americancoalcouncil.org

From: Betsy Monseu [mailto:bmonseu@americancoalcouncil.org]
Sent: Thursday, May 25, 2017 4:25 PM
To: Mandy Gunasekara (Gunasekara.Mandy@epa.gov) <Gunasekara.Mandy@epa.gov>
Subject: American Coal Council thanks and invitation

Mandy,

Thank you so much for meeting with me today. I appreciated the conversation about coal policy and regulation in the context of the Trump administration and under the EPA leadership of Administrator Pruitt.

It was my pleasure to introduce the activities and programs of the American Coal Council to you. As mentioned, I extend invitation to your or another senior EPA representative to join us at our August conference to speak on the status of EPA regulations and regulatory reform relative to coal mining and use. I am pleased that that EPA is engaging with our industry again and our conference delegates would welcome this opportunity to hear from EPA personally

ACC's "Coal Market Strategies" conference will be held August 14-16, 2017 at the Stein Eriksen Lodge in Park City. It is typically attended by approximately 100-125 senior level executives from across the coal industry – suppliers, traders, transporters, consumers, and services and support providers. Our 2017 conference theme is "Charting the Course for Coal – 2017 and Beyond" and the program will address issues related to coal and energy markets, policy, regulation, and technology.

The conference general sessions will be held from approximately 8:30 am-4 pm on August 15th and approximately 8:30 am-Noon on August 16th. At this time, remarks by EPA could be accommodated either day. I expect the speaking slot to be either 30 or 45 minutes.

For reference and in the event you wish to forward/share this email, background information on the American Coal Council is below.

The American Coal Council (ACC) is a 501(c)(6) corporation in our 35th year of service to the coal industry. We focus on coal sector education, networking, and advocacy. With more than 150 member companies, the ACC is among the largest coal trade associations and represents the collective business interests of the American coal industry. The strength and uniqueness of our association is derived from the membership which includes companies across the entire coal value

chain – coal suppliers, consumers, traders, transporters, and services and support partners. We draw on this diversity to offer programs and services that address timely, critical issues in our industry.

ACC's Mission:

- To provide relevant educational programs, market intelligence, advocacy support and peer-to-peer networking forums to advance members' commercial and professional development interests.
- To support activities and objectives that advance coal supply, consumption, transportation and trading.
- To represent the collective interests of the American coal industry ~ from the hole-in-the-ground to the plug-in-the-wall ~ in advocating for coal as an economic, abundant and environmentally sound fuel source.
- To serve as an essential resource for industry, policy makers and public interest groups.

Thank you for consideration of this speaking invitation for EPA. I look forward to hearing back and am available at your convenience for any questions.

Regards, Betsy Monseu

Betsy B. Monseu | CEO | American Coal Council
1101 Pennsylvania Ave. NW, #300
Washington, DC 20004
Office 202.756.4540 | Direct 202.805.2310
bmonseu@americancoalcouncil.org
www.americancoalcouncil.org

Areas of Expertise

Executive Committee (EC)

- Atmospheric Sciences (atmospheric chemistry, atmospheric physics)
- Behavioral Sciences (decision sciences, communication sciences)
- Engineering (industrial, mechanical)
- Research Program Evaluation
- Science Policy/Public Policy
- Social Science (ecological/environmental/natural resource economics, behavioral economics, environmental sociology, environmental anthropology, geography)
- Systems Science/Systems Biology/Systems Ecology
- Toxicology (neurotoxicology, immunotoxicology, cardio-pulmonary toxicology, endotoxicology)

Air, Climate, and Energy (ACE) Subcommittee

- Atmospheric Sciences (aerosol physical science, atmospheric physics, atmospheric measurement, air quality modeling, climate modeling, source-receptor modeling, water quality modeling)
- Behavioral Science (psychology/social neuroscience/conservation psychology/ecopsychology/environmental psychology/sustainable behavior)
- Biology (biogeochemistry, cell chemistry, molecular biology)
- Chemistry (aerosol, analytical, atmospheric, combustion, physical, water)
- Climate Change (adaptation, modeling, variability, greenhouse gas technology assessment)
- Decision Sciences/Analysis/Value of Information
- Ecology (aquatic ecology – freshwater/wetland, plant/forest ecology, hydrology/hydraulics, soil biogeochemistry, system ecology/landscape ecology)
- Economics (modeling, analysis)
- Engineering (chemical, combustion, industrial, mechanical, environmental, greenhouse gas and air pollution technology assessment, technology policy)
- Epidemiology
- Human Health Exposure Assessment (exposure measurement, exposure modeling)
- Human Health Risk Assessment
- Information Science (information visualization, uncertainty analysis)
- Public Health (environmental health, epidemiology, exposure assessment)
- Risk Assessment (ecological risk assessment, human health risk assessment, mixtures risk assessment)
- Science Policy/Public Policy
- Social Science (ecological/environmental/natural resource economics, behavioral economics, environmental sociology, environmental anthropology geography)
- Sustainability (life-cycle analysis, technology policy, energy)
- Toxicology (neurotoxicology, immunotoxicology, cardio-pulmonary toxicology)

Safe and Sustainable Water Resources (SSWR) Subcommittee

- Aquatic/Systems Ecology (freshwater, wetland, estuary, near-coastal)
- Behavioral Science (risk perception, risk communication)
- Chemistry (environmental chemistry, water chemistry, biogeochemistry)
- Climate Change (variability)
- Cyanobacteria/Harmful Algal Blooms
- Decision Science (decision analysis, value of information, decision support system)
- Economics (ecological, environmental, natural resources, agricultural, behavioral, environmental sociology, environmental anthropology geography)
- Engineering (drinking water treatment, wastewater treatment, stormwater treatment and management, water reuse, water infrastructure)
- Microbiology
- Nutrients (nutrient management/thresholds, best management practices, human/ecological health)
- Risk Assessment (ecological, human health, cumulative)
- Toxicology (ecotoxicology)
- Water, Energy, and Food Nexus
- Watershed Management (surface water, groundwater)

Sustainable and Healthy Communities (SHC) Subcommittee

- Aquatic Science/Systems
- Behavioral Science (psychology, social neuroscience, conservation psychology, ecopsychology, environmental psychology, sustainable behavior, risk perception/risk communication, crisis communication, community decision making)
- Chemistry (environmental chemistry)
- Decision Science/Analysis/Value of Information
- Ecology (ecosystem services)
- Economics
- Engineering (environmental, civil, chemical, bioenvironmental, combustion, decontamination and cleanup/management)
- Information Technology (web-based tool development)
- Landscape Ecology
- Modeling (top down rather than bottom up process modeling)
- Public Health (children's health, community health, community decision making, environmental health, epidemiology)
- Risk Assessment (cumulative risk assessment, ecological risk assessment, human health risk assessment)

- Science Policy/Public Policy (environmental justice)
- Social Science (community disaster recovery and resiliency and environmental issues, ecological/environmental economics, natural resource economics, human health economics, behavioral economics, environmental sociology, environmental anthropology geography)
- Sustainability (community/urban level planning and sustainability, industrial ecology, life-cycle analysis, energy)
- Terrestrial Science/Systems
- Urban Ecology
- Visualization

Chemical Safety for Sustainability (CSS) and Human Health Risk Assessment (HHRA) Subcommittee

CSS Areas of Expertise

- Bioinformatics
- Chemical Fate and Transport
- Chemical Risk Assessment
- Chemical Risk Management
- Computational Chemistry
- Computational Toxicology/Biology
- Decision Science/Analysis/Value of Information
- Emerging Materials (nanotechnology, nanoexposure and hazard characterization)
- Endocrinology
- Exposure Science (human and ecological)
- Green Chemistry
- High-Throughput Bioassays
- Life Cycle Analysis
- Molecular Biology/Genomics
- Pharmacokinetics
- Public Health (children's health, environmental health, molecular epidemiology)
- Risk Assessment (cumulative risk assessment, ecological risk assessment, human health risk assessment, mixtures risk assessment)
- Systems Biology
- Toxicology (computational toxicology – computational biology/genomics/proteomics/metabonomics/ computational chemistry/high throughput bioassays/informatics/bioinformatics, ecotoxicology, developmental/reproductive toxicology)

HHRA Areas of expertise

- Atmospheric Science
- Behavioral Science (risk perception/risk communication)
- Biology (endocrinology/endocrine disruptors, molecular biology, pharmacokinetics, systems biology)
- Computational Toxicology
- Decision Science (decision analysis/value of information/decision support system)
- Ecology
- Environmental Health Science (includes developing and evaluating risk management decisions, and performing decision analyses and uncertainty analyses)
- Epidemiology
- Exposure Science (human and ecological)
- Human Health Risk Assessment (cancer and non-cancer risk assessment, chemical mixtures risk assessment, cumulative risk assessment, exposure assessment, chemical mode of action and toxicity pathway analysis, dose response modeling, physiologically-based pharmacokinetic (PBPK) modeling)
- Information Science (communication – research results, information visualization, uncertainty analysis)
- Molecular Toxicology
- Public Health (children's health, community health, epidemiology)
- Pulmonary and Cardiovascular Toxicology
- Social Science (ecological economics/environmental economics/natural resource economics, environmental sociology, social epidemiology, environmental anthropology, geography)
- Sustainability (community level sustainability)
- Toxicology (computational toxicology, predictive toxicology, developmental/reproductive toxicology, immunotoxicology, molecular toxicology, neurotoxicology, pulmonary/cardiovascular toxicology, carcinogenesis)

Homeland Security (HS) Subcommittee

- Biology (environmental microbiology)
- Chemistry (analytical chemistry, physical chemistry, water chemistry)
- Decision Science (decision analysis, value of information, decision support system)
- Emergency Management (natural/industrial disasters and terrorist incidents)
- Engineering (decontamination/waste management, drinking water treatment/distribution/wastewater treatment, environmental modelling, environmental engineering with a focus on microbiology, chemical engineering)

- Risk Assessment (human health exposure assessment, sampling approaches)
- Social Science (community disaster recovery and resiliency and environmental issues, environmental economics, environmental sociology, environmental anthropology, geography)

Message

From: Clint Woods [cwoods@csg.org]
Sent: 6/13/2017 9:11:37 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: kpoole@ecos.org
Subject: Introduction

Mandy,

I hope all is well – I just wanted to send a quick note of introduction: Kelly Poole is a Project Manager with the Environmental Council of the States (ICYMI, their Cooperative Federalism 2.0 report this week is outstanding) who handles air issues, among other things. In addition to her work with ECOS, Kelly is working with the American Bar Association to help plan their Environment, Energy, and Resources Section fall meeting in October and was interested in talking with you about an air-related panel. I think she may be reaching out separately, but in case it's helpful she is copied here and her office # is 202-266-4939.

Thanks!

Clint Woods
Executive Director
Association of Air Pollution Control Agencies
1776 Avenue of the States
Lexington, KY 40511
859.244.8040 – office
cwoods@csg.org
http://www.cleanairact.org

AAPCA ASSOCIATION OF AIR POLLUTION CONTROL AGENCIES
2017 FALL BUSINESS MEETING
September 20–22 | Doubletree by Hilton | Raleigh, North Carolina

Message

From: Stephen Aaron [saaron@mercuryllc.com]
Sent: 5/26/2017 3:21:03 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Re: Cabot Follow-Up

864-420-4345

Mercury.

Stephen Aaron
Senior Vice President
300 Tingey Street SE | Suite 202
Washington, DC | 20003
www.mercuryllc.com

On May 26, 2017, at 11:12 AM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

What is your number?

From: Stephen Aaron [mailto:saaron@mercuryllc.com]
Sent: Friday, May 26, 2017 11:06 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: Re: Cabot Follow-Up

It's Friday before Memorial Day, Trump Bar at 2, yeah?

Stephen Aaron
Senior Vice President
300 Tingey Street SE | Suite 202
Washington, DC | 20003
www.mercuryllc.com

On May 25, 2017, at 5:04 PM, Stephen Aaron <saaron@mercuryllc.com> wrote:

Ha, I'll meet you at either. You pick.

On May 25, 2017, at 5:03 PM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

Haha- at 2 pm, that's strong!

Sent from my iPhone

On May 25, 2017, at 5:00 PM, Stephen Aaron <saaron@mercuryllc.com> wrote:

Trump Hotel bar?

Stephen Aaron
Senior Vice President
300 Tingey Street SE | Suite 202
Washington, DC | 20003
www.mercuryllc.com

On May 25, 2017, at 4:54 PM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

> I'm free tomorrow afternoon – 2 pm.
> Meet you at the Trump Hotel
> Starbucks?
>
> **From:** Stephen Aaron [mailto:saaron@mercuryllc.com]
> **Sent:** Thursday, May 25, 2017 3:59 PM
> **To:** Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
> **Subject:** Cabot Follow-Up
>
> Mandy,
>
> Would you have a few minutes for me to call or come by tomorrow and touch base quickly on the carbon black initiative?
>
> Thanks
>
> Stephen

Stephen Aaron
Senior Vice President
300 Tingey Street SE | Suite 202
Washington, DC | 20003
www.mercuryllc.com

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Message

From: Davis, Patrick [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=7FCA02D1EC544FBBBD6FB2E7674E06B2-DAVIS, PATR]
Sent: 6/16/2017 12:32:48 PM
To: David M. (Max) Williamson [maxwilliamson@williamsonlawpolicy.com]; Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Biogenic CO2

Hi Mr. Williamson,

Thank you for reaching out. Would you please email me the read ahead information you shared with Mandy in early May?

Thanks,

Patrick Davis
Environmental Protection Agency
Deputy Assistant Administrator, Office of Land and Emergency Management
202-564-3103 office
202-380-8341 cell

Information sent to this email address may be subject to FOIA.

From: David M. (Max) Williamson [mailto:maxwilliamson@williamsonlawpolicy.com]
Sent: Friday, June 16, 2017 8:21 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Cc: Davis, Patrick <davis.patrick@epa.gov>
Subject: RE: Biogenic CO2

Mandy thanks so much, and Patrick I will reach out separately.

Regards,

David M. (Max) Williamson | Williamson Law + Policy, PLLC
1800 K Street NW, Suite 714 | Washington, D.C. 20006 | (202) 256-6155

WILLIAMSON LAW + POLICY
environmental markets advisory

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From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Friday, June 16, 2017 8:07 AM
To: David M. (Max) Williamson <maxwilliamson@williamsonlawpolicy.com>
Cc: Davis, Patrick <davis.patrick@epa.gov>
Subject: Re: Biogenic CO2

Our point person for OLEM is Patrick Davis (CC'd). He'll be able to help you out.

Best,
Mandy

Sent from my iPhone

On Jun 16, 2017, at 7:22 AM, David M. (Max) Williamson <maxwilliamson@williamsonlawpolicy.com> wrote:

Mandy, look forward to talking.

In the meantime, is there someone on your team assigned to OLEM (RCRA and refrigerant) issues that I should talk to about another matter?

Regards,

David M. (Max) Williamson | Williamson Law + Policy, PLLC
1800 K Street NW, Suite 714 | Washington, D.C. 20006 | (202) 256-6155

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From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Thursday, June 15, 2017 1:03 PM
To: Kyle Harris <kharris@corn.org>
Cc: David M. (Max) Williamson <maxwilliamson@williamsonlawpolicy.com>; Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: RE: Biogenic CO2

Kyle,

Thank you for the update and I look forward to meeting again soon. I've cc'd Alex Dominguez who can help organize the logistics.

Best,
Mandy

From: Kyle Harris [mailto:kharris@corn.org]
Sent: Tuesday, June 13, 2017 3:03 PM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Cc: David M. (Max) Williamson <maxwilliamson@williamsonlawpolicy.com>
Subject: RE: Biogenic CO2
Importance: High

Mandy,

Your lawyers, the Department of Justice, have contacted us regarding our challenge to the Aircraft Rule, as a status report on our abeyance order is due to the DC Circuit June 28th. This presents a perfect opportunity to sit down and pick back up our conversation regarding the biogenic issue, and share with you our proposed resolution.

We would like to schedule a meeting at your convenience ahead of this June 28th deadline.

Best Regards,

Kyle

Kyle A. Harris, Esq.
Manager, Environmental Affairs/ Workplace Safety
Corn Refiners Association
www.corn.org
1701 Pennsylvania Ave NW
Suite 950, Washington, DC 20006
Office: (202) 534-3501
Cell: (410) 924-2629

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From: Kyle Harris
Sent: Tuesday, May 30, 2017 4:52 PM
To: 'Gunasekara, Mandy' <Gunasekara.Mandy@epa.gov>
Cc: David M. (Max) Williamson <maxwilliamson@williamsonlawpolicy.com>
Subject: RE: Biogenic CO2

Mandy,

I hope you found time to enjoy Memorial Day Weekend. I wanted to follow-up to see if there is anything else I can provide you with to resolve the biogenic issue. Again, we are hopeful for a prompt and permanent resolution to this matter without extended rulemaking and also end all litigation over the Aircraft Rule. We believe the strategy and vehicle discussed in our May 2nd meeting will be the most effective way of accomplishing this.

We would like to schedule a follow up meeting/call at your earliest convenience to further discuss. Additionally, please let me know when may be the most appropriate time to request a meeting between Biogenic CO2 Coalition member CEOs and Administrator Pruitt.

Best Regards,

Kyle

Kyle A. Harris, Esq.
Manager, Environmental Affairs/ Workplace Safety
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<image005.png>

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From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Monday, May 08, 2017 4:53 PM
To: Kyle Harris <kharris@corn.org>
Cc: David M. (Max) Williamson <maxwilliamson@williamsonlawpolicy.com>
Subject: RE: Biogenic CO2

Thank you, Kyle. Appreciate the follow-up.
Best,
Mandy

From: Kyle Harris [mailto:kharris@corn.org]
Sent: Monday, May 8, 2017 4:50 PM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Cc: David M. (Max) Williamson <maxwilliamson@williamsonlawpolicy.com>
Subject: RE: Biogenic CO2

Mandy,

I wanted to follow up and confirm that you received the case studies that I sent last week. I can understand how busy you are- and just wanted to make sure they didn't fall unnoticed to the bottom of your email inbox! Attached here should be everything that I have sent your way (or handed in person) regarding Biogenic CO2. Additionally, please find our comments on the proposed significance rule, as it's our most thorough exposition of the legal arguments surrounding this issue.

Attached you will find:

- Letter sent to Administrator Pruitt upon his confirmation
- One-page overview of the Ag-based Biogenic CO2 issue
- Case Studies developed to frame permitting issues we face
- Comments filed on the Proposed Significance Rule
- Slide deck highlighting EPA Actions/Concerns

I hope you find this information helpful, please don't hesitate to reach out should you have any questions or concerns. Again, we look forward to maintaining an open dialogue and we hope to meet with you regarding next steps in the very near future.

Best Regards,

Kyle

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From: Kyle Harris
Sent: Tuesday, May 02, 2017 4:29 PM
To: 'Gunasekara, Mandy' <Gunasekara.Mandy@epa.gov>
Subject: Biogenic CO2

Mandy,

Thank you for meeting with us today. Per our discussion, I wanted to forward you some 'case studies' that we have developed that put a story behind some of the permitting issues that the members of my association, and others in the coalition, have dealt with on a consistent basis.

I look forward to maintaining a dialogue moving forward- please do not hesitate to reach out should you need any further information. We look forward to next steps in getting this issue resolved.

Best Regards,

Kyle

Kyle A. Harris, Esq.
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Message

From: Myron Ebell [Myron.Ebell@cei.org]
Sent: 6/1/2017 9:36:53 PM
To: Myron Ebell [Myron.Ebell@cei.org]
Subject: FW: Statement by President Trump on the Paris Climate Accord

Paris Climate Cup
Final / OT

Swamp	0
Deplorables	1

In response to numerous requests, please see below. Thanks again for all you can do to flood the zone with public support for this pullout today....

Paul Teller
Special Assistant to the President for Legislative Affairs
The White House

From: White House Press Office [mailto:whitehouse-noreply@messages.whitehouse.gov]
Sent: Thursday, June 1, 2017 5:11 PM
To: Teller, Paul S. EOP/WHO
Subject: Statement by President Trump on the Paris Climate Accord

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release June 1, 2017

STATEMENT BY PRESIDENT TRUMP
ON THE PARIS CLIMATE ACCORD

Rose Garden

3:32 P.M. EDT

THE PRESIDENT: Thank you very much. (Applause.) Thank you. I would like to begin by addressing the terrorist attack in Manila. We're closely monitoring the situation, and I will continue to give updates if anything happens during this period of time. But it is really very sad as to what's going on throughout the world with terror. Our thoughts and our prayers are with all of those affected.

Before we discuss the Paris Accord, I'd like to begin with an update on our tremendous -- absolutely tremendous -- economic progress since Election Day on November 8th. The economy is starting to come back, and very, very rapidly. We've added $3.3 trillion in stock market value to our economy, and more than a million private sector jobs.

I have just returned from a trip overseas where we concluded nearly $350 billion of military and economic development for the United States, creating hundreds of thousands of jobs. It was a very, very successful trip, believe me. (Applause.) Thank you. Thank you.

In my meetings at the G7, we have taken historic steps to demand fair and reciprocal trade that gives Americans a level playing field against other nations. We're also working very hard for peace in the Middle East, and perhaps even peace between the Israelis and the Palestinians. Our attacks on terrorism are greatly stepped up -- and you see that, you see it all over -- from the previous administration, including getting many other countries to make major contributions to the fight against terror. Big, big contributions are being made by countries that weren't doing so much in the form of contribution.

One by one, we are keeping the promises I made to the American people during my campaign for President -- whether it's cutting job-killing regulations; appointing and confirming a tremendous Supreme Court justice; putting in place tough new ethics rules; achieving a record reduction in illegal immigration on our southern border; or bringing jobs, plants, and factories back into the United States at numbers which no one until this point thought even possible. And believe me, we've just begun. The fruits of our labor will be seen very shortly even more so.

On these issues and so many more, we're following through on our commitments. And I don't want anything to get in our way. I am fighting every day for the great people of this country. Therefore, in order to fulfill my solemn duty to protect America and its citizens, the United States will withdraw from the Paris Climate Accord -- (applause) -- thank you, thank you -- but begin negotiations to reenter either the Paris Accord or a really entirely new transaction on terms that are fair to the United States, its businesses, its workers, its people, its taxpayers. So we're getting out. But we will start to negotiate, and we will see if we can make a deal that's fair. And if we can, that's great. And if we can't, that's fine. (Applause.)

As President, I can put no other consideration before the wellbeing of American citizens. The Paris Climate Accord is simply the latest example of Washington entering into an agreement that disadvantages the United States to the exclusive benefit of other countries, leaving American workers -- who I love -- and taxpayers to absorb the cost in terms of lost jobs, lower wages, shuttered factories, and vastly diminished economic production.

Thus, as of today, the United States will cease all implementation of the non-binding Paris Accord and the draconian financial and economic

burdens the agreement imposes on our country. This includes ending the implementation of the nationally determined contribution and, very importantly, the Green Climate Fund which is costing the United States a vast fortune.

Compliance with the terms of the Paris Accord and the onerous energy restrictions it has placed on the United States could cost America as much as 2.7 million lost jobs by 2025 according to the National Economic Research Associates. This includes 440,000 fewer manufacturing jobs -- not what we need -- believe me, this is not what we need -- including automobile jobs, and the further decimation of vital American industries on which countless communities rely. They rely for so much, and we would be giving them so little.

According to this same study, by 2040, compliance with the commitments put into place by the previous administration would cut production for the following sectors: paper down 12 percent; cement down 23 percent; iron and steel down 38 percent; coal -- and I happen to love the coal miners -- down 86 percent; natural gas down 31 percent. The cost to the economy at this time would be close to $3 trillion in lost GDP and 6.5 million industrial jobs, while households would have $7,000 less income and, in many cases, much worse than that.

Not only does this deal subject our citizens to harsh economic restrictions, it fails to live up to our environmental ideals. As someone who cares deeply about the environment, which I do, I cannot in good conscience support a deal that punishes the United States -- which is what it does -- the world's leader in environmental protection, while imposing no meaningful obligations on the world's leading polluters.

For example, under the agreement, China will be able to increase these emissions by a staggering number of years -- 13. They can do whatever they want for 13 years. Not us. India makes its participation contingent on receiving billions and billions and billions of dollars in foreign aid from developed countries. There are many other examples. But the bottom line is that the Paris Accord is very unfair, at the highest level, to the United States.

Further, while the current agreement effectively blocks the development of clean coal in America -- which it does, and the mines are starting to open up. We're having a big opening in two weeks. Pennsylvania, Ohio, West Virginia, so many places. A big opening of a brand-new mine. It's unheard of. For many, many years, that hasn't happened. They asked me if I'd go. I'm going to try.

China will be allowed to build hundreds of additional coal plants. So we can't build the plants, but they can, according to this agreement. India will be allowed to double its coal production by 2020. Think of it: India can double their coal production. We're supposed to get rid of ours. Even Europe is allowed to continue construction of coal plants.

In short, the agreement doesn't eliminate coal jobs, it just transfers those jobs out of America and the United States, and ships them to foreign countries.

This agreement is less about the climate and more about other countries gaining a financial advantage over the United States. The rest of the world applauded when we signed the Paris Agreement -- they went wild; they were so happy -- for the simple reason that it put our country, the United States of America, which we all love, at a very, very big economic disadvantage. A cynic would say the obvious reason for economic competitors and their wish to see us remain in the agreement is so that we continue to suffer this self-inflicted major economic wound. We would find it very hard to compete with other countries from other parts of the world.

We have among the most abundant energy reserves on the planet, sufficient to lift millions of America's poorest workers out of poverty. Yet, under this agreement, we are effectively putting these reserves under lock and key, taking away the great wealth of our nation -- it's great wealth, it's phenomenal wealth; not so long ago, we had no idea we had such wealth -- and leaving millions and millions of families trapped in poverty and joblessness.

The agreement is a massive redistribution of United States wealth to other countries. At 1 percent growth, renewable sources of energy can meet some of our domestic demand, but at 3 or 4 percent growth, which I expect, we need all forms of available American energy, or our country -- (applause) -- will be at grave risk of brownouts and blackouts, our businesses will come to a halt in many cases, and the American family will suffer the consequences in the form of lost jobs and a very diminished quality of life.

Even if the Paris Agreement were implemented in full, with total compliance from all nations, it is estimated it would only produce a two-tenths of one degree -- think of that; this much -- Celsius reduction in global temperature by the year 2100. Tiny, tiny amount. In fact, 14 days of carbon emissions from China alone would wipe out the gains from America -- and this is an incredible statistic -- would totally wipe out the gains from America's expected reductions in the year 2030, after we have had to spend billions and billions of dollars, lost jobs, closed factories, and suffered much higher energy costs for our businesses and for our homes.

As the Wall Street Journal wrote this morning: "The reality is that withdrawing is in America's economic interest and won't matter much to the climate." The United States, under the Trump administration, will continue to be the cleanest and most environmentally friendly country on Earth. We'll be the cleanest. We're going to have the cleanest air. We're going to have the cleanest water. We will be environmentally friendly, but we're not going to put our businesses out of work and we're not going to lose our jobs. We're going to grow; we're going to grow rapidly. (Applause.)

And I think you just read -- it just came out minutes ago, the small business report -- small businesses as of just now are booming, hiring people. One of the best reports they've seen in many years.

I'm willing to immediately work with Democratic leaders to either negotiate our way back into Paris, under the terms that are fair to the United States and its workers, or to negotiate a new deal that protects our country and its taxpayers. (Applause.)

So if the obstructionists want to get together with me, let's make them non-obstructionists. We will all sit down, and we will get back into the deal. And we'll make it good, and we won't be closing up our factories, and we won't be losing our jobs. And we'll sit down with the Democrats and all of the people that represent either the Paris Accord or something that we can do that's much better than the Paris Accord. And I think the people of our country will be thrilled, and I think then the people of the world will be thrilled. But until we do that, we're out of the agreement.

I will work to ensure that America remains the world's leader on environmental issues, but under a framework that is fair and where the burdens and responsibilities are equally shared among the many nations all around the world.

No responsible leader can put the workers -- and the people -- of their country at this debilitating and tremendous disadvantage. The fact that the Paris deal hamstrings the United States, while empowering some of the world's top polluting countries, should dispel any doubt as to the real reason why foreign lobbyists wish to keep our magnificent country tied up and bound down by this agreement: It's to give their country an economic edge over the United States. That's not going to happen while I'm President. I'm sorry. (Applause.)

My job as President is to do everything within my power to give America a level playing field and to create the economic, regulatory and tax structures that make America the most prosperous and productive country on Earth, and with the highest standard of living and the highest standard of environmental protection.

Our tax bill is moving along in Congress, and I believe it's doing very well. I think a lot of people will be very pleasantly surprised. The Republicans are working very, very hard. We'd love to have support from the Democrats, but we may have to go it alone. But it's going very well.

The Paris Agreement handicaps the United States economy in order to win praise from the very foreign capitals and global activists that have long sought to gain wealth at our country's expense. They don't put America first. I do, and I always will. (Applause.)

The same nations asking us to stay in the agreement are the countries that have collectively cost America trillions of dollars through tough

trade practices and, in many cases, lax contributions to our critical military alliance. You see what's happening. It's pretty obvious to those that want to keep an open mind.

At what point does America get demeaned? At what point do they start laughing at us as a country? We want fair treatment for its citizens, and we want fair treatment for our taxpayers. We don't want other leaders and other countries laughing at us anymore. And they won't be. They won't be.

I was elected to represent the citizens of Pittsburgh, not Paris. (Applause.) I promised I would exit or renegotiate any deal which fails to serve America's interests. Many trade deals will soon be under renegotiation. Very rarely do we have a deal that works for this country, but they'll soon be under renegotiation. The process has begun from day one. But now we're down to business.

Beyond the severe energy restrictions inflicted by the Paris Accord, it includes yet another scheme to redistribute wealth out of the United States through the so-called Green Climate Fund -- nice name -- which calls for developed countries to send $100 billion to developing countries all on top of America's existing and massive foreign aid payments. So we're going to be paying billions and billions and billions of dollars, and we're already way ahead of anybody else. Many of the other countries haven't spent anything, and many of them will never pay one dime.

The Green Fund would likely obligate the United States to commit potentially tens of billions of dollars of which the United States has already handed over $1 billion -- nobody else is even close; most of them haven't even paid anything -- including funds raided out of America's budget for the war against terrorism. That's where they came. Believe me, they didn't come from me. They came just before I came into office. Not good. And not good the way they took the money.

In 2015, the United Nation's departing top climate officials reportedly described the $100 billion per year as "peanuts," and stated that "the $100 billion is the tail that wags the dog." In 2015, the Green Climate Fund's executive director reportedly stated that estimated funding needed would increase to $450 billion per year after 2020. And nobody even knows where the money is going to. Nobody has been able to say, where is it going to?

Of course, the world's top polluters have no affirmative obligations under the Green Fund, which we terminated. America is $20 trillion in debt. Cash-strapped cities cannot hire enough police officers or fix vital infrastructure. Millions of our citizens are out of work. And yet, under the Paris Accord, billions of dollars that ought to be invested right here in America will be sent to the very countries that have taken our factories and our jobs away from us. So think of that.

There are serious legal and constitutional issues as well. Foreign leaders in Europe, Asia, and across the world should not have more to say

with respect to the U.S. economy than our own citizens and their elected representatives. Thus, our withdrawal from the agreement represents a reassertion of America's sovereignty. (Applause.) Our Constitution is unique among all the nations of the world, and it is my highest obligation and greatest honor to protect it. And I will.

Staying in the agreement could also pose serious obstacles for the United States as we begin the process of unlocking the restrictions on America's abundant energy reserves, which we have started very strongly. It would once have been unthinkable that an international agreement could prevent the United States from conducting its own domestic economic affairs, but this is the new reality we face if we do not leave the agreement or if we do not negotiate a far better deal.

The risks grow as historically these agreements only tend to become more and more ambitious over time. In other words, the Paris framework is a starting point -- as bad as it is -- not an end point. And exiting the agreement protects the United States from future intrusions on the United States' sovereignty and massive future legal liability. Believe me, we have massive legal liability if we stay in.

As President, I have one obligation, and that obligation is to the American people. The Paris Accord would undermine our economy, hamstring our workers, weaken our sovereignty, impose unacceptable legal risks, and put us at a permanent disadvantage to the other countries of the world. It is time to exit the Paris Accord -- (applause) -- and time to pursue a new deal that protects the environment, our companies, our citizens, and our country.

It is time to put Youngstown, Ohio, Detroit, Michigan, and Pittsburgh, Pennsylvania -- along with many, many other locations within our great country -- before Paris, France. It is time to make America great again. (Applause.) Thank you. Thank you. Thank you very much.

Thank you very much. Very important. I'd like to ask Scott Pruitt, who most of you know and respect, as I do, just to say a few words.

Scott, please. (Applause.)

ADMINISTRATOR PRUITT: Thank you, Mr. President. Your decision today to exit the Paris Accord reflects your unflinching commitment to put America first.

And by exiting, you're fulfilling yet one more campaign promise to the American people. Please know that I am thankful for your fortitude, your courage, and your steadfastness as you serve and lead our country.

America finally has a leader who answers only to the people -- not to the special interests who have had their way for way too long. In everything you do, Mr. President, you're fighting for the forgotten men and women across this country. You're a champion for the hardworking

citizens all across this land who just want a government that listens to them and represents their interest.

You have promised to put America First in all that you do, and you've done that in any number of ways -- from trade, to national security, to protecting our border, to rightsizing Washington, D.C. And today you've put America first with regard to international agreements and the environment.

This is an historic restoration of American economic independence -- one that will benefit the working class, the working poor, and working people of all stripes. With this action, you have declared that the people are rulers of this country once again. And it should be noted that we as a nation do it better than anyone in the world in striking the balance between growing our economy, growing jobs while also being a good steward of our environment.

We owe no apologies to other nations for our environmental stewardship. After all, before the Paris Accord was ever signed, America had reduced its CO2 footprint to levels from the early 1990s. In fact, between the years 2000 and 2014, the United States reduced its carbon emissions by 18-plus percent. And this was accomplished not through government mandate, but accomplished through innovation and technology of the American private sector.

For that reason, Mr. President, you have corrected a view that was paramount in Paris that somehow the United States should penalize its own economy, be apologetic, lead with our chin, while the rest of world does little. Other nations talk a good game; we lead with action -- not words. (Applause.)

Our efforts, Mr. President, as you know, should be on exporting our technology, our innovation to nations who seek to reduce their CO2 footprint to learn from us. That should be our focus versus agreeing to unachievable targets that harm our economy and the American people.

Mr. President, it takes courage, it takes commitment to say no to the plaudits of men while doing what's right by the American people. You have that courage, and the American people can take comfort because you have their backs.

Thank you, Mr. President.

END 4:03 P.M. EDT

Message

From: Eric Dell [edell@namanow.org]
Sent: 6/5/2017 7:13:45 PM
To: Ringel, Aaron [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=1654bdc951284a6d899a418a89fb0abf-Ringel, Aar]
CC: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: help on vending machine issue

Thanks so much. Mandy, let me know when you might have a few minutes to chat and I'll work around your schedule.
Thanks,
Eric

W. Eric Dell
Senior Vice President, Government Affairs
NAMA
Phone: 202.669.6139

From: Ringel, Aaron [mailto:ringel.aaron@epa.gov]
Sent: Monday, June 05, 2017 3:11 PM
To: Eric Dell <edell@namanow.org>
Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: RE: help on vending machine issue

Hey Eric, looping in Mandy Gunasekara (cc'ed) who is our Senior Policy Advisor for Air and Radiation. She's going to be the best point of contact for you on this issue. Feel free to coordinate with her, she's happy to discuss!

Best,
Aaron

From: Eric Dell [mailto:edell@namanow.org]
Sent: Thursday, June 1, 2017 9:35 AM
To: Ringel, Aaron <ringel.aaron@epa.gov>; Tim Perrin <TPerrin@Polsinelli.com>
Subject: RE: help on vending machine issue

Aaron,
Thanks for your offer to assist and my apologies for the long email, but this issue is technical and wanted to be sure to explain it thoroughly.

Below is a description of our challenge/problem in the SNAP area and our need for the EPA to extend the date for change of status of refrigerants used in vending machines included in the EPA's final "Protection of Stratospheric Ozone: Change of Listing Status for Certain Substitutes Under the Significant New Alternatives Policy Program" (SNAP) Rule.

We have not filed a formal petition for an extension at this time, but are currently drafting one. Honestly, I did not see the recent request from the EPA on filing comments for regulations that industry believes should

be repealed, changed, etc. and I know that date has passed. However, this would be a formal petition for an extension when we file it.

On October 17, 2014 NAMA submitted comments on behalf of the industry in response to the above-referenced SNAP rule in Docket ID No. EPA-HQ-OAR-2014-0198. The final rule applicable to this letter was issued on July 2, 2015. The rule delisted the below refrigerants from use in new vending machines as of January 1, 2019: FOR12A, FOR12B, HFC-134a, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-410A, R-410B, R-417A, R-421A, R-422B, R- 422C, R-422D, R-426A, R-437A, R-438A, R-507A, RS-24 (2002 formulation), and SP34E.

Below are the issues and why an extension is needed:

1. **Testing of Component Parts**– NAMA's original comments touched on this issue. As the delisting deadline draws closer the industry feels certain that the supply of refrigerant will be available; however it is probable that the time to test and verify secondary component parts could extend past the delisting date causing disruption to the industry and lack of ability for new vending machines to enter the marketplace. For example, vend motors, vending machine controllers (VMC's) and payment systems are all yet to be determined if they are approved and can only be cleared and certified by UL testing. Payment devices on vending machines will also require testing and verification for use with the new, flammable refrigerants, specifically R290. In fact, some coin and bill acceptors spark the tubes to sense how many coins are inserted into the machine during a purchasing transaction.

2. **UL 541 Standard Supplement A –** Of the allowable refrigerants for vending machines under this SNAP ruling (R600a, R290, R744 and R441a) only R290 has readily-available components in the capacities needed and is efficient enough for most vending machines to meet DOE's new energy consumption limits (**EERE–2013–BT–STD–0022)** which also go into effect in January, 2019. Therefore, most vending machine manufacturers will be forced to use R290, a flammable refrigerant, as their refrigerant of choice. The use of a flammable refrigerant in a vending machine triggers the inclusion of language from UL 541 Standard Supplement A6.2.3 in the installation and operating instructions of the vending machine. Below is the exact language of the UL 541 Standard for Safety for Vending Machines Supplement A6.2.3 that must be included in the instructions of the vending machine:

SA6.2.3 The installation and operating instructions shall indicate that:

a) Component parts shall be replaced with like components;
b) Servicing shall be done by factory authorized service personnel, so as to minimize the risk of possible ignition due to incorrect parts or improper service; and
c) A vending machine having a flammable refrigerant shall not be intended for use in lobbies or locations of egress, such as a hallway or public corridor.

Sections a and b of this paragraph will put a great burden on vending machine technicians. These technicians will have to learn new techniques and exercise great care when servicing such machines both in the field and in their repair facility. They will also be required to purchase new service equipment and instruments and to become familiar with the safe use of those tools. This will take time likely beyond the current January 1, 2019 deadline.

Section c of SA6.2.3 is particularly burdensome on the vending machine industry due to the restrictions on placement of machines. Many vending machines are located in lobbies, locations of egress, hallways and public corridors. NAMA and the industry have been in discussions with UL regarding this issue and believes that extra

time is going to be needed to resolve the impact of this restriction that could provide liability on both the machine manufacturer and the vending machine operating company, in addition to restricting locations in buildings commonly used to place vending machines. This could have a tremendous negative impact for many small business owners. We believe that further discussions may lead to a potential resolution to the challenge in the UL requirement, but more time is needed.

1. **Phase in period** – NAMA's 2014 comments to the proposed SNAP rule requested a six to eight year phase-in period based on previous experience with refrigerant changes in the industry. After further research and with compliance efforts moving forward, NAMA now more firmly believes that this time period is indeed needed and requests that the below change of status decisions for vending machines be updated to extend the delisting date from January 1, 2019 to January 1, 2022.

Change of Status Decisions for Vending Machines

Change of Status Date	End-use	Substitutes
	Vending machines (new only)	FOR12A, FOR12B, HFC-134a, KDD6, R-125/290/134a/600a (55.0/1.0/42.5/1.5), R-404A, R-407C, R-410A, R-410B, R-417A, R-421A, R- 422B, R-422C, R-422D, R-426A, R-437A, R-438A, R-507A, RS-24 (2002 formulation), SP34E.
EPA Rule		Unacceptable as of January 1, 2019
NAMA Request		Unacceptable as of January 1, 2022

We will likely soon be seeking the that the EPA extend the date for change of status of refrigerants used in new vending machines included in the EPA's final "Protection of Stratospheric Ozone: Change of Listing Status for Certain Substitutes Under the Significant New Alternatives Policy Program" (SNAP) Rule to January 1, 2022.

Thanks for your assistance in directing me to the correct person at EPA to take the next steps on this. I understand that it may be Ms. Chenise Farquharsen, Director, Office of Regulatory Policy and Management.
THANKS!
Eric

W. Eric Dell
Senior Vice President, Government Affairs
NAMA
Phone: 202.669.6139

From: Ringel, Aaron [mailto:ringel.aaron@epa.gov]
Sent: Friday, May 26, 2017 3:58 PM
To: Tim Perrin <TPerrin@Polsinelli.com>
Cc: Eric Dell <edell@namanow.org>
Subject: RE: help on vending machine issue

Thanks Tim, exciting times over here!

Hi Eric, happy to chat. Can you send me any information on the issue ahead of time so I can see what we can do?

Thanks,
Aaron

Aaron E. Ringel
Deputy Associate Administrator
Office of Congressional & Intergovernmental Relations
U.S. Environmental Protection Agency

W: 202.564.4373
Ringel.Aaron@epa.gov

From: Tim Perrin [mailto:TPerrin@Polsinelli.com]
Sent: Thursday, May 25, 2017 3:34 PM
To: Ringel, Aaron <ringel.aaron@epa.gov>
Cc: Eric Dell (edell@namanow.org) <edell@namanow.org>
Subject: help on vending machine issue

Hey Aaron – I hope you are well! Congrats on the new post at EPA. I hope we are able to work together again soon.

I wanted to connect you with my friend Eric Dell, the GR SVP at the vending association (Nat'l. Automatic Merchandising Ass'n). The association is dealing with a SNAP issue left over from the Obama Administration that's having a negative impact on NAMA's manufacturing and distribution members. Eric can give you details, but I was hoping you could help with either insights or by pointing him in the right direction within the agency.

Thanks so much for your help, Aaron! All the best - Tim

Tim Perrin
Policy Advisor

tperrin@polsinelli.com
202.626.8321
1401 Eye Street N.W., Suite 800
Washington, D.C. 20005
polsinelli.com

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Message

From: Whiteman, Chad S. EOP/OMB EOP / Ex. 6
Sent: 6/1/2017 4:06:33 PM
To: Steven Shimberg [sjshimberg@sjsolutions.biz]
CC: Echols, Mabel E. EOP/OMB EOP / Ex. 6; Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]; Dravis, Samantha [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ece53f0610054e669d9dffe0b3a842df-Dravis, Sam]; mimi.braniff@delta.com; MCSHANE, JOHN B [JOHN.MCSHANE@pes-companies.com]; Burgess, Scott H. EOP/OMB EOP / Ex. 6
Subject: RE: RFS OMB meeting handouts

Steve,
Thank you for taking the time to meet with us yesterday to share your views on the RFS RVO rulemaking. I also appreciate that you sent along the electronic copies of the documents that you presented during the meeting.
Best Regards,
Chad

Chad Whiteman
Senior Policy Analyst, Office of Information and Regulatory Affairs
Office of Management and Budget | Executive Office of the President
EOP / Ex. 6

From: Steven Shimberg [mailto:sjshimberg@sjsolutions.biz]
Sent: Wednesday, May 31, 2017 5:17 PM
To: Whiteman, Chad S. EOP/OMB EOP / Ex. 6; Burgess, Scott H. EOP/OMB EOP / Ex. 6
Cc: Echols, Mabel E. EOP/OMB EOP / Ex. 6; Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Dravis.samantha@Epa.gov; mimi.braniff@delta.com; MCSHANE, JOHN B <JOHN.MCSHANE@pes-companies.com>; James_P_Herz EOP / Ex. 6; Anthony_P_Campau EOP / Ex. 6
Subject: RFS OMB meeting handouts

Chad and Scott,

Thanks for meeting this morning with Delta Air Lines, Monroe Energy and Philadelphia Energy Solutions. As promised, I am attaching copies of the two handouts from today's meeting.

As noted in the meeting, EPA assumed in the 2017 final rule an unrealistically high level of ethanol consumption – 14.56 billion gallons. See: TABLE V.B.1.iv–1—GASOLINE VOLUMES USE TO DETERMINE REASONABLY ATTAINABLY ETHANOL SUPPLY IN 2017, 81 Fed. Reg. at 89780, and TABLE V.B.3–1—DETERMINATION OF VOLUME OF BIODIESEL AND RENEWABLE DIESEL NEEDED IN 2017 TO ACHIEVE
19.28 BILLION GALLONS OF TOTAL RENEWABLE FUEL, 81 Fed. Reg. at 89781. >https://www.gpo.gov/fdsys/pkg/FR-2016-12-12/pdf/2016-28879.pdf<

That assumption is inconsistent with EIA data. The combination of EIA's data on E0 and the most recent STEO show that annual ethanol consumption in motor gasoline for 2017 *and* 2018 will be significantly *less* than 14.56 bg. See Table 4a. U.S. Petroleum and Other Liquids Supply, Consumption, and Inventories, U.S. Energy Information Administration | Short-Term Energy Outlook - May 2017 >https://www.eia.gov/outlooks/steo/tables/pdf/4atab.pdf<

When the 2018 NPRM was sent to OMB on May 11th, the RIN market reacted to rumors that EPA will compound the error made in the 2017 rule and assume even *higher* levels of ethanol consumption for 2018. D6 RIN prices surged

overnight. In less than 3 weeks, D6 RIN prices increased by more than 85% -- from 40 cents/RIN to about 75 cents/RIN. As we discussed, that is a serious problem.

We look forward to continuing to work with you on this critical and difficult issue.

Sincerely,
Steve

STEVEN J. SHIMBERG
SJSOLUTIONS PLLC
Environmental Law/Policy, Counseling/Advocacy
sjshimberg@sjsolutions.biz
202.689.4920

Message

From: Mark Carr [markc@channeldesigngroup.com]
Sent: 6/13/2017 8:58:54 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: follow-up

Your boss Pruitt assigned us to get him briefed. What is the timing of me speaking to you about this?

Mark J Carr
Channel Design Group
314-616-6957
DC - NOLA - StL

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Message

From: Disney Store [DisneyStore@disneystore.rsys2.com]
Sent: 5/26/2017 3:15:40 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: It's BACK! Our Twice Upon a Year SALE

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Message

From: Jay Cranford [cranford@cgcn.com]
Sent: 5/26/2017 8:33:35 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Info

Mandy, what is your official title at EPA? Thank you!

Jay Cranford
CGCN Group
(202) 689-9296
www.cgcn.com

Message

From: Amy DeArmond [amy.dearmond@leggett.com]
Sent: 5/25/2017 8:31:20 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Brian Diffell (diffell@wtppgroup.com) [diffell@wtppgroup.com]
Subject: FW: Sterling Matter

Hey Mandy,

Just FYI on the below from DOJ. Please advise if you need anything further from us at this time.

Thanks,

Amy DeArmond
Government Policy & Legal Affairs Specialist

LEGGETT & PLATT, INCORPORATED
1 Leggett Road · Carthage, MO 64836
417-358-8131 x.2539 · amy.dearmond@leggett.com

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-----Original Message-----

From: Kate Abend Personal Email / Ex. 6
Sent: Wednesday, May 24, 2017 12:09 PM
To: Olson, Jeryl
Subject: Sterling Matter

Jeryl,

Please release the June 7 date on your clients' calendars. We are reevaluating the next step in this matter and will be in touch soon. Thanks very much.

Best,
Kate

Sent from my iPhone

Message

From: Cervino, Victor [Victor.Cervino@mpshq.com]
Sent: 6/5/2017 2:07:27 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: RE: Connecting from ICAC Clean Air Summit

Hi,

Thank you for the swift response, and safe and productive travels! Alex, as I mentioned below, my schedule is pretty flexible over the next two weeks. Almost anytime would work for me after Tuesday, so feel free to propose a time and I'll be happy to match it. Thanks in advance for your help.

Cheers,

victor

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Monday, June 05, 2017 10:03 AM
To: Cervino, Victor
Cc: Dominguez, Alexander
Subject: RE: Connecting from ICAC Clean Air Summit

Hi Victor,
I'm happy to meet. Please coordinate logistics with Alex (cc'd). As a note, I will be out of the country starting this afternoon to next Tuesday, so we will likely meet later next week.
Best,
Mandy

From: Cervino, Victor [mailto:Victor.Cervino@mpshq.com]
Sent: Monday, June 5, 2017 9:59 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: RE: Connecting from ICAC Clean Air Summit

Dear Mandy,

I hope you had a good weekend. As promised, I am following up on my previous note to check whether you'd have a few minutes to meet. My schedule is relatively flexible this week and the next, and I would be happy to accommodate the time and place that may work best for you.

Thanks in advance for your help. I look forward to speaking soon. Best,

Victor

From: Cervino, Victor
Sent: Monday, May 08, 2017 12:16 PM
To: 'Haley Armstrong'; gunasekara.mandy@epa.gov
Subject: RE: Connecting from ICAC Clean Air Summit

Thanks, Haley! Mandy, I hope we can touch base soon. I'll send you a separate note later on to coordinate at your convenience. Cheers!

Victor

Victor M. Cervino
Senior Manager Government Relations
MHPS Americas, Inc.
202.549.8757 (Cell)

From: Haley Armstrong [mailto:harmstrong@icac.com]
Sent: Monday, May 08, 2017 11:31 AM
To: gunasekara.mandy@epa.gov; Cervino, Victor
Subject: Connecting from ICAC Clean Air Summit

Hi Mandy,

Thank you for participating in last week's ICAC Clean Air Summit! Our members have expressed that they found tremendous value in the panel that you participated in.

I am writing to connect you with Victor Cervino from Mitsubishi Hitachi Power Systems America (included on this email). He is an ICAC members and attended the Clean Air Summit, but unfortunately wasn't able to touch base with you after your panel. I wanted to electronically introduce the two of you so that he can follow-up directly with you.

Please let me know if ICAC can be of any assistance going forward, and thanks again!

Best,
Haley

Haley Armstrong
Institute of Clean Air Companies
2200 Wilson Blvd, Suite 310
Arlington, VA 22201
202.478.6188 (office)

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Message

From: Rigamonti, Eva [erigamonti@steptoe.com]
Sent: 6/15/2017 2:44:12 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Frend, Jessica [jfrend@steptoe.com]
Subject: Thank you - availability to speak at D.C. event?

Good morning, Mandy!

It was lovely to meet you yesterday with the Association of American Railroads—thank you for the time you and your team shared with our group.

I wanted to reach out to ask if you would be available to speak to a group of about 60+ fuel marketers on Tuesday, July 18th at 12pm.

On Tuesday, July 18th, the Society of Independent Gasoline Marketers of America (SIGMA) will be in town to prepare for its annual Day on the Hill. As part of that preparation, we would like to have a panel discussion on the future of the RFS, an issue near and dear to our members' hearts.

Given your role in the program, I'd like to extend an invitation for you to participate in the discussion. We believe this would provide an opportunity for our members to hear the EPA's outlook on the RFS and offer an opportunity for you to speak with and hear from our members on the matter.

The lunch would take place at the Willard Hotel at noon on July 18th. We hope you will be able to join us.

Don't hesitate to reach out with any questions you may have. (I've cc'd my colleague, Jessica Frend, who is helping to coordinate the event. Between the two of us we should be able to address any questions you have).

Many thanks for your consideration of this request,

Eva

Eva Rigamonti
Associate
erigamonti@steptoe.com

Steptoe

+1 202 429 6457 direct
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Message

From: eMail & Records Mgmt Training Workshop XIV [Training@ManagingGovRecords.org]
Sent: 5/31/2017 5:16:45 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: [SPAM] June 20th - Gov Records & eMail Management - Meeting the Requirements

Records Management in Government
Training Workshop XIV
Agency Self Assessments are in to NARA
- How Can You Improve Your Scores?

Managing Government Records Directive Updates:
What Agencies Need to Do for 2017 and Beyond
Lessons Learned and Best Practices

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Don Rosen
Director of Records Management Oversight and Reporting
National Archives and Records Administration (NARA)
and

Arian Ravanbakhsh
Manager, Policy and Program Support Team
National Archives and Records Administration (NARA)

Additional Government Speakers
Matthew Olsen
Acting Chief Privacy and Data Sharing Officer
Acting Executive Director
Office of Privacy & Information Management (PIM)
U.S. Department of Health and Human Services

Mark Patrick
Chief, Information Management Division
The Joint Staff Secretariat
Department of Defense

Additional Government Speakers to be Announced Soon

David Ferriero, the Archivist of the United States, said:

Working together, NARA and all agencies continue to make progress on the key goals and requirements in the Directive. For us to succeed as a records management community, the SAORMs in each agency must drive the change that needs to happen if we are to realize the vision of a digital Government. Based on the data summarized in this report, we are making progress, but there is still much work to do .

The analysis shows that SAORMs (Senior Agency Officials for Records Management) reported they:

- *Will meet the email target by the end of this year (92%).*
- *Will meet the target to manage permanent electronic records in an electronic format by the end of 2019 (92%).*
- *Are taking actions to ensure records in non-official messaging accounts are captured in an official account within 20 days (83%).*
- *Will submit schedules for all existing paper and other non-electronic records by the end of 2016 (91%).*
- *Are preparing for the upcoming change in Presidential administration (79%).*

This workshop will examine the SAORM's report to determine what steps are required to fill the gaps

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Goals of this workshop are:

- **Focus on email retention regulation and policy and email best practices**
- **Provide attendees with a clear idea of the changes envisioned in the Directive,**
- **Strategies to obtain funding for solutions**
- **Help understand the role of the Senior Agency Official (SAO) in setting agency priorities and achieving program success**
- **Describe the developing roadmap that will lead to realizing these changes, and**
- **Describe the steps individual records managers can do now to align their work with the records management future the Directive envisions.**
- **Specific Agency Actions to be Completed by December 2015 and the out years**
- **Establishing a community of interest for Records Management**
- **Current email policy and regulations**
- **Tips for planning for the Directive's 2019 Deadline**

Overview:
With the recent headlines regarding government email retention and e-discovery, it is important to understand how the NARA/OMB regulations and deadlines will impact your agency. This one-day Potomac Forum Workshop will focus on

the activities mandated by the NARA/OMB Records Management Directive. Key executives from NARA and government agencies will discuss the directive and its implementation. Detailed review and analysis of the directive will be presented to help agencies better understand what they need to do, how to do it, and how to get the funding necessary to be successful. The recent Agency Submissions to NARA are discussed along with scores and suggestions for improving Agency Scores.

What You Will Learn:

- **What happens now that the 2016 deadline has passed**
- **What needs to be done to comply with the provisions of OMB M-12-18**
- **How the relationship between NARA and Federal agencies have and will change**
- **How the role of technology will evolve in the achievement of OMB M-12-18's goals**
- **What this initiative will mean for Federal records management in the short and long term**
- **What the components of a sustainable Records Management program will be in this new environment**
- **A better idea of the commitment of time and resources needed to comply with the Directive**
- **How the Senior Agency Officials can and are making a difference in improving the management of government records**
- **NARA Requirements for managing email - lessons learned from recent IRS news event - Complying with the Law - the Federal Records Act and what it means for email and other records losses**
- **The November 2014 Records Management Legislation and what it means to Agencies and Records Managers**
- **and more...**

Why You Should Attend:

- **To gain a clear understanding of OMB M-12-18**
- **To assist you in getting the best start on the many changes OMB M-12-18 will bring to your agency**
- **To learn key funding strategies to help your agency implement solutions to meet its objectives**
- **Hear from other government officials about the practical aspects of complying with the Directive**
- **Ensure success of your Records Management Program as you implement the Directive**

- **Lessons Learned since the publication of the Directive**
- **Understand the NARA requirements for email management - avoiding embarrassing non-conformance**
- **Understand email retention regulation, policy, and legislation.**

Who Should Attend:

- **CIO's and the Staff including technical staff involved with Records Management**
- **Senior Agency Officials (SAO's) charged with responsibility for the implementation of solutions for their agency**
- **IGs and Staff**
- **Government Records Managers**
- **All those with responsibility for initiating and carrying out the reforms mentioned in the President's Records Management Directive**
- **Professionals responsible for managing information resources on an enterprise-wide basis**
- **Those needing to understand latest NARA policy and guidance**
- **Contracting, Procurement and Acquisition Management Professionals**
- **Program Managers Who Must Understand Records Management in Government**
- **Government executives who want to understand email retention and records management regulation, policy, and legislation.**
- **Industry Partners**

Format:

This workshop will combine keynote presentations by NARA, lectures on implementing the Directive, real world examples and discussions to provide a thorough, enjoyable day of learning.

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The Previous Thirteen Potomac Forum Records Management Workshops on Email, Records Management and the OMB/NARA Directive were Rated as "Excellent" by Workshop Attendees
CEU Credits Awarded

Representative Student Testimonials from Previous Potomac Forum Managing Government Records Directive from OMB and NARA Workshops

It was informative and what I have learned can be taken back and applied to my office.
Records Management Specialist
Civilian Department

Excellent - I got a number of good ideas and suggestions. Well worth the investment.
Regulation Council
Civilian Administration

One of the best trainings I have been to.
Records Manager
Navy Center

Very well done
Deputy Commissioner for Legislative and Congressional Affairs
Civilian Agency

The overall workshop was great. I learned a lot of valuable information on to help me in my current position and provide additional guidance for my organization
Records Management Officer and Team Lead
DOT Agency

... for anyone who needs to follow the directive for records management
Admin Specialist
Civilian Commission

Outstanding!
Management and Program Analyst
DOT Agency

Very Well organized. Job well done!
DoD IG Specialist

Great!
Assistant Records Manager
Small Agency Commission

Workshop for Government and Industry Partners

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This email was sent by: **Potomac Forum, Ltd.**
400 North Washington Street , Alexandria , Virginia, 22314 , USA

Message

From: Laura B Siegrist [laura_b_siegrist@whirlpool.com]
Sent: 6/5/2017 2:05:58 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: EPA Meeting in Rome June 8 // Time to catch up?

Hey Mandy!

Hope all is well. Know you're completely swamped but wanted to ping you on two items -

1. My colleagues in Italy where our Europe / Middle East / Africa business is headquartered are planning to attend the June 8th meeting in Rome at the U.S. Embassy this week with Administrator Pruitt. I am helping them to prep for the meeting but wanted to see if you had a general sense of what issues the Administrator was hoping to discuss at that session. Either way wanted to put that on your radar.

2. Would love to find a time to catch up. Know you've talked to our trade association colleagues at AHAM as well as Dan Simmons over at DOE who I met with last week. We are eager to work with EPA and DOE on the Energy Star program as well as energy efficiency standards overall. I've been emailing with Byron Brown on setting up a time, maybe this week, but would love to find time to connect with you as well.

Thanks in advance and hey to Surya from Ben and I!

Talk to you soon,

Laura

LAURA SIEGRIST SENIOR MANAGER, GOVERNMENT RELATIONS
T: (202) 639-9420 | C: (202) 738-3895 | Whirlpool Corporation | WhirlpoolCorp.com
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Message

From: Stanko, Joseph [jstanko@hunton.com]
Sent: 5/25/2017 12:07:16 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Any open time for a quick call today?

Sorry we played phone tag yesterday. My windows today are now until noon, or from 4 PM on .

HUNTON & WILLIAMS

Joseph Stanko
Partner
jstanko@hunton.com
p 202.955.1529
bio | vCard

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037
hunton.com

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Wednesday, May 24, 2017 8:13 AM
To: Stanko, Joseph
Subject: Re: Any open time for a quick call today?

Yes- I'll call after morning brief with boss

Sent from my iPhone

On May 24, 2017, at 8:08 AM, Stanko, Joseph <jstanko@hunton.com> wrote:

<image001.jpg>

Joseph Stanko
Partner
jstanko@hunton.com
p 202.955.1529
bio | vCard

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037
hunton.com

Message

From: Adam Gustafson [gustafson@boydengrayassociates.com]
Sent: 5/31/2017 3:10:11 AM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Andrew Varcoe [avarcoe@boydengrayassociates.com]; James Conde [conde@boydengrayassociates.com]
Subject: RVP
Attachments: RVP Waiver Memo 20170530e.pdf

Mandy,

Thank you for the opportunity to meet with you and your colleagues last week to discuss EPA's legal authority to extend the 1 psi RVP waiver to E15. Here is our promised memo explaining why the various solutions we discussed are tools in EPA's regulatory toolbox.

We would welcome another conversation whenever that would be useful.

Adam

Adam R.F. Gustafson
Partner | **BOYDEN GRAY & ASSOCIATES**
801 17th Street NW, Suite 350
Washington, DC 20006
Cell: 202-577-5681
Fax: 202-955-0621
gustafson@boydengrayassociates.com

Message

From: Caron De Mars [Personal Email / Ex. 6
Sent: 6/12/2017 2:45:43 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Check out Ristorante Tullio on TripAdvisor

Here is a place I found on TripAdvisor:

Ristorante Tullio

Via San Nicolo da Tolentino 26, 00187 Rome Italy

Download the free TripAdvisor app! http://www.tripadvisor.com/apps

Sent from my iPhone

Michael C. Formica
National Pork Producers Council
(202) 680-3820

Sent from my SwinePhone

Message

From: Kathleen Hartnett White [khwhite@texaspolicy.com]
Sent: 5/26/2017 2:50:55 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: SpencerSanter
Attachments: SpencerSanter.docx

Mandy,
Here is Roy Spencer's critique of Santer paper.
Good Luch and God Speed.
Kathleen

- Latest Global Temp. Anomaly (Apr. '17: +0.27°C)

Roy Spencer's Response to Santer's Paper

Santer takes on Pruitt: The Global Warming Pause and the Devolution of Climate Science

May 25th, 2017

A new paper in Nature: Scientific Reports by Santer *et al* entitled *Tropospheric Warming Over the Past Two Decades* begins with this:

After a recent Senate confirmation hearing, Scott Pruitt the new Administrator of the U.S. Environmental Protection Agency received a written question regarding observed warming estimates. In response, Mr. Pruitt claimed that over the past two decades satellite data indicates there has been a leveling off of warming. We test this claim here.

Now, exactly how does one scientifically test a claim of "leveling off of warming"?

First, the claim would have to have some unambiguous meaning which can be evaluated quantitatively. Does it mean that warming has decelerated in the last two decades, and is approaching zero? That would be my first interpretation of "leveling off".

And by "two decades" did Pruitt mean exactly 20 years?

The wording is ambiguous. But the authors decided Pruitt meant "there has been zero warming" for exactly 20 years. They proceeded to evaluate this interpretation with a statistical analysis of the various satellite temperature datasets, as well as with climate models.

The result is a peer-reviewed study which took less than one month to sail through peer review.

Wow. If I only knew earlier that I could get peer-reviewed scientific papers by evaluating the silly climate claims made by politicians (Al Gore, Barack Obama, *et al.*) over the years.

Oh, that's right. I'm on the wrong side of the issue. The reviewers would have said, "C'mon, that's a politician generalizing. You can't get a peer-reviewed scientific paper out of that!"

Why the Global Warming Pause (Hiatus, Leveling Off) is a Poor Metric

I've warned people not to place too much emphasis on the claim that there has been zero warming over the last x number of years.

First of all, when the next big warm El Nino occurs, the zero trend will end. And that's exactly what happened, with the 2015-16 El Nino. A trend is very sensitive to what happens at the end of a time series, and a big (natural) warm blip from El Nino is just what the doctor ordered. No more zero trend. (Admittedly, I'm ignoring statistical uncertainty here..one might still argue there has not been any statistically significant warming in the last 20 years, depending on the error bars you assume.)

Now Santer *et al.* can get press saying, in effect, "See? Those silly global warming skeptics are wrong." **Of course, the authors know full well that the reason the pause/hiatus/leveling-off ended was due to a NATURAL event (El Nino).**

You can't build a case for human-caused warming by relying on natural warming! (But, they did anyway.)

So, they fault Pruitt on a technicality, straining a gnat while swallowing a camel.

This then distracts attention from the real issue: that the climate models on average produce about twice as much warming as has been observed over the last few decades.

The Santer paper also makes quite a bit out of the fact that warming exists in the satellite datasets at all, and that climate models do not produce that level of warming from their internal variability, suggesting an anthropogenic cause. Of course, they fail to mention that models are lousy at producing realistic multi-decadal time scale natural variability anyway, so this is hardly proof of an anthropogenic source of recent warming.

Nevertheless, as a "lukewarmer" I tend to believe about half of recent warming is indeed human-caused. There's no way to prove it because there is no fingerprint of anthropogenic warming (warming from, say, a slight decrease in ocean mixing and overturning would look the same as

human-caused warming, with greater warming over land than ocean, and over the Northern than Southern Hemisphere).

So, I consider the "no warmers" to be on shaky ground, both theoretically and observationally. But that doesn't mean they are wrong…we just don't know yet.

The Santer et al. paper is a good example of what often happens in political debate. Your opponent takes one ambiguous thing you said, interprets in a specific way, dissects it, destroys it, and in the process leaves the impression that you are an idiot who should not be listened to.

At the same time, it performs a very important function: distracting attention away from other, more important issues and lines of evidence — like the fact that observed warming has only been occurring at about half the rate climate models say should be occurring. And those model predictions are the basis for energy policy changes.

It's sad to see how far peer-reviewed climate science has fallen

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Ticket Receipt

Total Amount: 1,801.46 USD

This ticket information applies to the following trip(s):

Delta Air Lines Flight 3433 from Washington DC to New York NY on June 05 **(Operated By: Endeavor Air Dba Delta Connection)**
Delta Air Lines Flight 444 from New York NY to Rome on June 05
Delta Air Lines Flight 1044 from Rome to New York NY on June 13 **(Operated By: Alitalia S.P.A)**
Delta Air Lines Flight 4153 from New York NY to Washington DC on June 13 **(Operated By: Endeavor Air Dba Delta Connection)**

ElectronicTicket Number: 0068606599231
Invoice Number: 000167912
Ticket Amount: 1,761.56 USD
Form of Payment: CA**********4442

Service Fee Number: 8900693780679
Service Fee Amount: 39.90 USD
Form of Payment: CA**********4442

Travel Summary – Agency Record Locator KLTWPG

Traveler

GUNASEKARA / AMANDA M

Reference number by traveler: TAA04J3M

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/05/2017	**DCA-JFK**	DL 3433*	Confirmed	02:40 PM/03:57 PM	Economy / L
06/05/2017	**JFK-FCO**	DL 444	Confirmed	07:35 PM/10:20 AM +1	Economy / X
06/13/2017	**FCO-JFK**	DL 1044*	Confirmed	10:40 AM/02:15 PM	Economy / K
06/13/2017	**JFK-IAD**	DL 4153*	Confirmed	06:30 PM/08:17 PM	Economy / K

AIR - Monday, June 5 2017 - Agency Record Locator KLTWPG	Add to Calendar Need Help?
Delta Air Lines Flight DL3433 Economy	**Online check-in**
Depart:	Ronald Reagan National, Terminal B Washington, District of Columbia, United States 02:40 PM Monday, June 5 2017
Arrive:	John F Kennedy Intl, Terminal 4 New York, New York, United States 03:57 PM Monday, June 5 2017
Duration:	1 hour(s) and 17 minute(s) Non-stop
Status:	Confirmed - Delta Air Lines Record Locator: HU9EM8
Equipment:	Canadair Regional Jet 900
***Operated By:**	**Endeavor Air Dba Delta Connection**
Seat:	18A (Non smoking) Confirmed
Distance:	212 miles / 341.108 kilometers
CO2 Emissions:	116.6 lbs/53 kgs
Remarks:	NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY. PLEASE CHECK WWW.DELTA.COM

AIR - Monday, June 5 2017 - Agency Record Locator KLTWPG	
Delta Air Lines Flight DL444 Economy	**Online check-in**
Depart:	John F Kennedy Intl, Terminal 4 New York, New York, United States 07:35 PM Monday, June 5 2017
Arrive:	Fiumicino, Terminal 3 Rome, Italy 10:20 AM Tuesday, June 6 2017
Duration:	8 hour(s) and 45 minute(s) Non-stop
Total duration:	**13 hour(s) and 40 minute(s) including layover(s)**
Status:	Confirmed - Delta Air Lines Record Locator: HU9EM8
Meal:	Dinner
Equipment:	Airbus Industrie A330-300
Seat:	26B (Non smoking) Confirmed
Distance:	4263 miles / 6859.167 kilometers
CO2 Emissions:	1,594.36 lbs/724.71 kgs
Remarks:	NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

AIR - Tuesday, June 13 2017 - Agency Record Locator KLTWPG	Add to Calendar Need Help?
Delta Air Lines Flight DL1044 Economy	**Online check-in**
Depart:	Fiumicino, Terminal 1 Rome, Italy 10:40 AM Tuesday, June 13 2017
Arrive:	John F Kennedy Intl, Terminal 1 New York, New York, United States 02:15 PM Tuesday, June 13 2017
Duration:	9 hour(s) and 35 minute(s) Non-stop
Status:	Confirmed - Delta Air Lines Record Locator: HU9EM8
Meal:	Lunch
Equipment:	Boeing 777-200/ 200ER
***Operated By:**	**Alitalia**
Seat:	Assigned at Check-in
Distance:	4263 miles / 6859.167 kilometers
CO2 Emissions:	1,594.36 lbs/724.71 kgs
Remarks:	NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

AIR - Tuesday, June 13 2017 - Agency Record Locator KLTWPG	
Delta Air Lines Flight DL4153 Economy	**Online check-in**
Depart:	John F Kennedy Intl, Terminal 4 New York, New York, United States 06:30 PM Tuesday, June 13 2017
Arrive:	Dulles Intl Washington, District of Columbia, United States 08:17 PM Tuesday, June 13 2017
Duration:	1 hour(s) and 47 minute(s) Non-stop
Total duration:	**15 hour(s) and 37 minute(s) including layover(s)**
Status:	Confirmed - Delta Air Lines Record Locator: HU9EM8
Equipment:	Canadair Regional Jet
***Operated By:**	**Endeavor Air Dba Delta Connection**
Seat:	Assigned at Check-in
Distance:	227 miles / 365.243 kilometers
CO2 Emissions:	124.85 lbs/56.75 kgs
Remarks:	NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

Remarks

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26May/02:46PM

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Estimated trip total				1,761.56 USD
Air	**Car**	**Hotel**	**Rail**	**Other**
1,761.56 USD				

Fare details: Ticketed				
Vendor	**Fare information**	**Refund restrictions before departure**	**Change restrictions after ticketing**	**Ticket information**
Air DL3433* 05Jun DL444 05Jun DL1044* 13Jun DL4153* 13Jun	**Total:** **USD 1,761.56**	REFUND RESTRICTIONS MAY APPLY	CHANGE RESTRICTIONS MAY APPLY	

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Message

From: Nolan, Rich [RNolan@nma.org]
Sent: 6/12/2017 2:41:40 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Dominguez, Alexander [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5ced433b4ef54171864ed98a36cb7a5f-Dominguez,]
Subject: RE: Hi Mandy!

Perfect. Alex let me know what may work this week or next. Thanks Rich

---

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Monday, June 12, 2017 10:36 AM
To: Nolan, Rich <RNolan@nma.org>
Cc: Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: Re: Hi Mandy!

I'm on my way back from Italy, but am available later this week. Alex, can you set something up please? Rich, look forward to connecting soon.

Sent from my iPhone

On Jun 12, 2017, at 4:16 PM, Nolan, Rich <RNolan@nma.org> wrote:

> I would love to catch up if you have a minute this week and are in DC. Rich
>
> Rich Nolan
> NMA

Message

From: Stephen Aaron [saaron@mercuryllc.com]
Sent: 5/25/2017 7:59:18 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Cabot Follow-Up

Mandy,

Would you have a few minutes for me to call or come by tomorrow and touch base quickly on the carbon black initiative?

Thanks

Stephen

Mercury.

Stephen Aaron
Senior Vice President
300 Tingey Street SE | Suite 202
Washington, DC | 20003
www.mercuryllc.com

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Message

From: Michael Whatley [MWhatley@hbwresources.com]
Sent: 6/14/2017 9:35:00 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Michael Zehr [MZehr@hbwresources.com]
Subject: BP Energy Outlook - Reception - Thursday Evening
Attachments: CEA Reception Invite - June 15, 2017.pdf

Mandy –

Would like to invite you to a reception that Consumer Energy Alliance will be hosting on Thursday evening featuring BP's chief economist Spencer Dale.

Spencer will be in DC as part of the rollout for BP's annual Energy Outlook and we are pulling together a great group of Senators, Members of the House, senior Administration officials, think tank leaders and senior BP executives for a reception at Bobby Van's Grill (1201 New York Ave, NW) from 6-7 Thursday evening.

I have attached an invitation for the reception, which will be a widely attended event, and hope that you will be able to join us.

Please let me know if you have any questions or would like any additional information.

Thanks.

Michael

HBW RESOURCES

Michael Whatley
HBW Resources
1666 K Street, NW, Suite 500
Washington, DC 20006
202-674-1750

CONSUMER ENERGY ALLIANCE
THE VOICE OF THE ENERGY CONSUMER

Consumer Energy Alliance Cordially Invites You

To

"Energy Economics"

A Reception with Special Guest

Spencer Dale
Group Chief Economist, BP

June 15, 2017
6 pm – 7 pm

Bobby Van's
1201 New York Avenue NW
Washington, D.C. 20005

Please join the Consumer Energy Alliance for a reception with special guest Spencer Dale, Group Chief Economist at BP, who will discuss BP's Statistical Review of Energy.

As the energy landscape continues to undergo profound change, it is more important now than ever to understand the trends and developments driving this change. From the shift to low-carbon fuels to the proliferation of renewables to the future of coal, BP's Statistical Review of Energy continually provides authoritative and in-depth information and insightful analysis that is invaluable in understanding changing energy markets and production and consumption patterns.

To RSVP and for more information on this event, please contact Emily Singer at esinger@consumerenergyalliance.org

This event was planned to comply with House and Senate rules and Executive branch regulations on ethics. If required, please ensure permission is granted from the appropriate ethics office before attending. Please contact your ethics office with any questions or concerns.

Message

From: Kevin Fay [fay@alcalde-fay.com]
Sent: 6/6/2017 12:49:17 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: Administrator Meeting Request

Mandy,

Thanks for your note and your willingness to meet. Probably not going to be able to get CEOs to come in if we are not meeting with the Administrator. I know he is incredibly busy, but would still like to try for that. Does his scheduled change if we looked at late on the 28th or early on the 30th? If not, then we would still be bringing senior execs, but the CEOs would be tough To lock down. Thoughts and suggestions would be appreciated.

All the best,

Kevin

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Monday, June 05, 2017 2:43 PM
To: Stephen Van Maren <vanmaren@alliancepolicy.org>
Cc: Kevin Fay <fay@alcalde-fay.com>; Dominguez, Alexander <dominguez.alexander@epa.gov>
Subject: Re: Administrator Meeting Request

Hi Steve,

I just checked with Sydney. She informed me the Administrator will not be available during the requested time and asked me to take the meeting on his behalf. I'm happy to do that. Please work with Alex (cc'd) on setting up logistics.

Best,
Mandy

Sent from my iPhone

On Jun 1, 2017, at 10:37 AM, Stephen Van Maren <vanmaren@alliancepolicy.org> wrote:

> Hi Mandy,
>
> We have been attempting to schedule a meeting for some of our CEOs to meet with Administrator Pruitt in conjunction with an existing high-level meeting we already have scheduled at the State Department on June 29. So far I have not been able to get a response from Sydney Hupp. Is it possible for you to assist?
>
> Thank you.
>
> Steve

Stephen Van Maren
Director
Alliance for Responsible Atmospheric Policy
2111 Wilson Blvd., 8th Floor
Arlington, VA 22201
Tel: (703) 516-4118
Fax: (703) 243-2874
Email: vanmaren@alliancepolicy.org
Website: www.alliancepolicy.org
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---------- Forwarded message ----------
From: **Stephen Van Maren** <vanmaren@alliancepolicy.org>
Date: Tue, May 30, 2017 at 4:23 PM
Subject: Re: Administrator Meeting Request
To: scheduling@epa.gov, hupp.sydney@epa.gov
Cc: Kevin Fay <fay@alliancepolicy.org>

Dear Ms. Hupp,

I would like to follow up on my request submitted May17 (below).

Our company representatives now have a high-level meeting scheduled at the State Department for the afternoon of June 29. This being the case, I would like to know if it is possible to schedule this meeting with Administrator Pruitt either early or later in the morning on that day.

I look forward to hearing from you.

Thank you for your help.

Respectfully,
Stephen Van Maren
Director
Alliance for Responsible Atmospheric Policy
2111 Wilson Blvd., 8th Floor
Arlington, VA 22201
Tel: (703) 516-4118
Fax: (703) 243-2874
Email: vanmaren@alliancepolicy.org
Website: www.alliancepolicy.org
Follow us on Twitter: @AtmosPolicy

On Wed, May 17, 2017 at 10:28 AM, Stephen Van Maren <vanmaren@alliancepolicy.org> wrote:

> Dear Ms. Hupp,

I hope this finds you well.

We would like to follow up on our attached letter submitted to the Administrator on April 14.

We are now looking into an opportunity to bring together a delegation of CEOs from our member companies to meet with the Administrator for further discussion on the topics contained in the letter.

Please advise as to how we should go about setting up such a meeting.

Thank you in advance for your help.

Respectfully,

Stephen Van Maren
Director
Alliance for Responsible Atmospheric Policy
2111 Wilson Blvd., 8th Floor
Arlington, VA 22201
Tel: (703) 516-4118
Fax: (703) 243-2874
Email: vanmaren@alliancepolicy.org
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---------- Forwarded message ----------
From: **Stephen Van Maren** <vanmaren@alliancepolicy.org>
Date: Fri, Apr 14, 2017 at 12:44 PM
Subject: Alliance Views on CAA Title VI and the Montreal Protocol
To: Pruitt.Scott@epa.gov
Cc: hillary.lassiter@mail.house.gov, michael.mets@mail.house.gov, landon_stropko@enzi.senate.gov, emily_rampone@sanders.senate.gov, thomas.doelp@mail.house.gov, shira.siegel@mail.house.gov, daniel_ulmer@cochran.senate.gov, adrienne.w@judiciary-dem.senate.gov, chris.sarley@mail.house.gov, brendan.larkin@mail.house.gov, kaitlynn_glover@barrasso.senate.gov, laura_gillam@epw.senate.gov, Kevin Fay <fay@alliancepolicy.org>

Administrator Pruitt,

Please accept the attached views from the Alliance for Responsible Atmospheric Policy on budgetary considerations regarding Title VI of the Clean Air Act and the Montreal Protocol.

Thank you.

Respectfully,

Stephen Van Maren
Director
Alliance for Responsible Atmospheric Policy

2111 Wilson Blvd., 8th Floor
Arlington, VA 22201
Tel: (703) 516-4118
Fax: (703) 243-2874
Email: vanmaren@alliancepolicy.org
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Message

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Subject: Your opinion about Tower Hotel Bologna

Tower HOTEL BOLOGNA

[italiano | english]

Your opinion about Tower Hotel Bologna 16/06/2017

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La Sua opinione sul Tower Hotel Bologna 16/06/2017

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Compili il Questionario

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Subject: [SPAM] Tomorrow May 25th - Enterprise Risk Mgmt (OMB A-123) Goes Beyond the CFO Community

Now Eight Confirmed Gov Speakers - Experienced Government Experts in Enterprise Risk Management & Internal Controls

Eighth Gov Speaker Just Confirmed:
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IT Audit Director
Office of Inspector General (OIG)
Department of Health and Human Services (HHS)

Previously Confirmed Gov Speakers
Dr. Karen Hardy
Deputy Chief Risk Officer
Department of Commerce
Former risk management policy senior advisor to the Office of Management and Budget (OMB)

Ken Phelan
Chief Risk Officer (CRO)
Department of the Treasury

Rex Booth
Deputy Chief Information Security Officer
PBGC

Alexis Wales
Deputy Chief of Cybersecurity Performance Management
DHS

Tomorrow - May 25th - Seats Again Available (Registration Reopened - Workshop Moved to a Larger Meeting Room)

Please Forward to All Agency Executives, Managers and Staff Who are Responsible for Implementing or Managing OMB Circular A-123 - Enterprise Risk Management

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Javier Lopez, MSA
Director
Division of Management Assurance
Office of the Assistant Secretary for
Preparedness and Response
HHS

Larry Koskinen
Chief Risk Officer
HUD

Nicole Puri
Risk Management Officer
PBGC

Enterprise Risk Management (ERM) in Government Training Workshop II
- OMB Circular A-123: Beyond Compliance -

What federal executive, managers, and front line practitioners need to know to incorporate the updated OMB Circular A-123 requirements that define management's responsibility for internal control with an emphasis on integrating enterprise risk management (ERM) in FY 2017 and beyond

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With the updated OMB Circular No. A-123 being issued nearly a year ago, this training is an advanced level internal control workshop focusing on what agencies and departments have done in relation to the requirements that defines management's responsibility for internal control with an emphasis on integrating enterprise risk management (ERM) and what they plan to do going forward.

This workshop is designed for the executive, manager, or front-line practitioner who is responsible for sustaining an effective internal controls program and who is charged in implementing the updated requirements of OMB A-123, including elements of ERM.

Participants will learn how to efficiently and effectively strengthen an internal control program while complying with the new requirements of OMB A-123, GAO Green Book, GAO Fraud Risk Assessment, and ERM. Participants will also gain an understanding of the evolution of internal controls, learn about emerging trends and best practices, and gain an understanding of a practical approach to assessing internal controls using a Governance, Risk, and Compliance methodology.

The Workshop will present very practical information about the federal government's requirements for not only internal control programs, but mission related programs and will offer insight on integration, risk assessment, testing, and reporting.

The focus of this workshop will be on efficiently meeting the updated internal control and risk management requirements in an efficient and effective way.

Practical Information - Not Theory

What You Will Learn:

- **Information that will help you continue to implement the updated requirements of OMB Circular A-123**
- **What the 2017 risk profile deadline means and how to continue your ERM focus beyond 2017**
- **How the Green Book fits into the new A-123 requirements**
- **Risk Management - how much is enough?**
- **GAO Fraud Guide - discussion on this requirement and how it fits into internal control reviews**
- **Presentations by experts with extensive, practical experience in DoD and civilian agencies**

Who Should Attend:
This workshop is limited to government employees only to permit candid discussion

- **Financial management professionals**
- **Internal controls and Risk Management Executives, Managers and and team members**
- **Program management professionals with responsibilities in Managing Risk**
- **Auditors**

- **Risk Management and Internal controls steering committee members**
- **Inspectors General and Staff**
- **Chief Financial Officers and Staff**
- **Chief Information Officers and Staff**
- **Chief Procurement and Acquisition Officers and Staff**
- **Risk Management Staff**
- **Chief Human Capital Officers, HR Managers and Staff**
- **Managers, Directors and Senior Officials who have fiduciary/financial and/or risk management responsibilities**

Format:
Presentations by experts on A-123, FMFIA, FISMA, FFMIA and Green Book.
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Sent: 5/18/2017 2:29:32 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Checking Back

Mandy –

Since we have not heard anything from EPA staff/OGC concerning pellet fuel regulations, I just wanted to check back and see where things stood given that the abeyance period ends on June 26th and absent any further order from the court, our brief will be due then.

Robert J. Meyers
(202) 624-2967
(202) 306-5254 (c)
RMeyers@crowell.com
Crowell & Moring LLP
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Attorney Work Product

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Sent: 6/12/2017 2:38:49 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: RE: United States Resets Climate Change Discussion At G7

Very nice.

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Monday, June 12, 2017 10:32 AM
To: Gunasekara, Surya; mcgrevey1@aol.com
Subject: Fwd: United States Resets Climate Change Discussion At G7

Sent from my iPhone

Begin forwarded message:

From: "Lincoln Ferguson (EPA)" <ferguson.lincoln@epa.gov>
Date: June 12, 2017 at 3:38:33 PM GMT+2
To: "Gunasekara.Mandy@epa.gov" <Gunasekara.Mandy@epa.gov>
Subject: United States Resets Climate Change Discussion At G7
Reply-To: ferguson.lincoln@epa.gov

U.S. ENVIRONMENTAL PROTECTION AGENCY
NEWS RELEASE
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United States Resets Climate Change Discussion At G7

U.S. Formally Joins Communiqué, Reaching Consensus On Important Environmental Issues

June 12, 2017

Bologna, Italy - Today, U.S. Environmental Protection Agency Administrator Scott Pruitt announced that the United States stands firm on its decision to withdraw from the Paris

Agreement and has reset the conversation about climate change reflective of the new priorities of the Trump Administration and the expectations of the American people.

"Respective of the importance to engage with longstanding allies and key international partners, we approached the climate discussions head on from a position of strength and clarity. We are resetting the dialogue to say Paris is not the only way forward to making progress. Today's action of reaching consensus makes clear that the Paris Agreement is not the only mechanism by which environmental stewardship can be demonstrated. It also demonstrates our commitment to honest conversations, which are the cornerstone of constructive international dialogue, " said Administrator Scott Pruitt.

While a party to the communiqué, the United States did not join the climate change sections, explicitly stating:

We the United States of America continue to demonstrate through action, having reduced our CO2 footprint as demonstrated by achieving pre-1994 CO2 levels domestically. The United States will continue to engage with key international partners in a manner that is consistent with our domestic priorities, preserving both a strong economy and a healthy environment. Accordingly, we the United States do not join those sections of the communiqué on climate and MDBs, reflecting our recent announcement to withdraw and immediately cease implementation of the Paris Agreement and associated financial commitment.

The United States and its G7 counterparts found common ground engaging in robust and constructive dialogue regarding other, equally important environmental issues. The United States joined consensus throughout the communiqué including the sections discussing resource efficiency, marine litter, and environmental policies and jobs.

"The United States will continue to show leadership by offering action-oriented solutions to the world's environmental challenges. We have indicated a willingness to engage on an international stage that stands to greatly benefit from American ingenuity, innovation, and advanced technologies. We have already demonstrated significant progress towards mitigating environmental problems and we will continue to develop these for the benefit of all nations," Administrator Pruitt said.

BACKGROUND ...

G7 Bologna Environment Ministers' Meeting: Communiqué

"We, the G7 Environment Ministers and high representatives, and European Commissioners responsible for environment and climate, met in Bologna on 11-12 June 2017. We were joined by heads and senior officials of International Organizations and by

representatives of universities and firms." (G7 Bologna Environment Ministers' Meeting, 06/12/17)

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To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: [SPAM] Register for July 12: The President's Cybersecurity Exec Order (EO) Workshop

Please Review and Forward to
Your Government Executives, Managers and Staff
Who Play a Part in Agency Cyber Security Management or Implementation

Potomac Forum Training Workshop

Implementing the President's Cybersecurity Executive Order (EO) Training Workshop

A "How To" Workshop to Implement the Requirements of the EO and its Reporting Requirements

Date: Wednesday, July 12, 2017

Early Bird Reduced Registration Fee Until June 17th

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Government Speakers:
Dr. Ron Ross
NIST Fellow
Author of the NIST Risk Management Framework (RMF) and Numerous NIST Cyber Security Publications
---
Jarvis Rodgers
Information Technology Audit Director
Office of Inspector General
Department of Health and Human Services (HHS)

Additional Government Speakers are being approved for participation by their Agencies

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Overview:
This workshop will focus on the President's EO on Cybersecurity and discuss its requirements. A key requirement is the implementation of NIST's Cybersecurity Framework (CSF). We will present an understanding of the CSF and NIST's Risk Management Framework (RMF) which is a key component of the CSF. The CSF and RMF are critical for the federal government in its efforts to mitigate risk within enterprise information systems. The workshop will provide detailed guidance on the integration of the CSF and RMF into a holistic Cybersecurity solution. In addition, the workshop will address the EO reporting requirements for the first 90-day report and the other reports identified in the EO.

Hear from industry experts and government officials tasked with implementing robust cybersecurity and risk management strategies along with learning how NIST's CSF and RMF can be effectively implemented to reduce the risk of cyber-attacks. Listen to a government panel of CIOs and CISOs to understand the challenges they are facing on a day-to-day basis and how implementation of NIST's CSF and RMF helps them identify the risks and what it takes to mitigate those risks. Gaining insights from the panel and peer interactions at the workshop should be invaluable in

implementing the President's EO and moving the needle forward in improving federal cybersecurity.

What You Will Learn:

- **The approach used by the NIST RMF**
- **The value of the integration of the NIST RMF with the NIST CSF**
- **Development of agency Risk Management Strategies**
- **Changes in federal information system authorization requirements and guidelines**
- **Guidance into what agencies can expect from the NIST RMF and new CSF processes**
- **Importance of Risk Assessments (RA), Security Control Assessments (SCA), and Security Testing & Evaluation (ST&E)**
- **Security control categorization and how it is used to manage risk**
- **NIST SP 800-53A, Guide for Assessing the Security Controls in Federal Information Systems and Organizations: Building Effective Security Assessment Plans; NIST SP 800-37 Rev. 1 Guide for Applying the Risk Management Framework to Federal Information Systems: A Security Life Cycle Approach and NIST SP 800-39 Managing Information Security Risk**
- **Reporting Requirements for the Executive Order**
- **Best Practices for Responding to the Executive Order**

Why You Should Attend

- **Review the key steps within the NIST RMF and CSF**
- **Obtain practical knowledge of how NIST RMF and CSF are incorporated into information system security**
- **Gain insight into conducting and implementing NIST RMF and CSF in your organization**
- **Collect information on how NIST frameworks can be leveraged to enhance the security of your organization**
- **Learn how risk management and cybersecurity are essential for regulatory compliance**
- **Learn from risk management, security and OIG colleagues in Federal, State and Local Governments**
- **Learn how other Agencies are responding to the EO**

Who Should Attend:

- **CIOs, CISOs and Staff**
- **IT security and risk management practitioners**
- **IGs and Staff**
- **Program Managers responsible for risk management**
- **Government Employees who want to better understand organization risk management**
- **Executives who oversee risk management for the government**
- **All government executives, managers and staff who need to better understand risk management and implementing the President's Executive Order**

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What Federal Executives, Managers, and Supervisors Need to Know to Support the Goals of the Executive Order for Reforming the Federal Government and Reducing the Federal Civilian Workforce
Wednesday, June 28, 2017

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3. Implementing the President's Cybersecurity Executive Order (EO) Training Workshop
A "How To" Workshop to Implement the Requirements of the EO and its Reporting Requirements
Wednesday, July 12, 2017

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Subject: Washington Post Story: Paris climate accord divides industrial trade group

Washington Post story on IECA.

The Energy 202: Paris climate accord divides industrial trade group
https://www.washingtonpost.com/news/powerpost/paloma/the-energy-202/2017/06/13/the-energy-202-paris-climate-accord-divides-industrial-trade-group/593edc18e9b69b2fb981dcf5/

Regards,

Paul Cicio
President
Industrial Energy Consumers of America
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Washington, DC 20006
(O) 202-223-1661
(C) 703-216-7402
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Comments of

Urban Air Initiative; Clean Fuels Development Coalition; 25x'25; Glacial Lakes Energy, LLC; Siouxland Ethanol, LLC; ICM, Inc.; Nebraska Ethanol Board; Nebraska Ethanol Industry Coalition; South Dakota Farmers Union; North Dakota Farmers Union; Minnesota Farmers Union; Montana Farmers Union; and Wisconsin Farmers Union

On EPA's Request for Comment

On the Regulatory Reform Task Force's

Evaluation of Existing Regulations

Docket ID No. EPA-HQ-OA-2017-0190

82 Fed. Reg. 17793 (Apr. 13, 2017)

by C. Boyden Gray
Adam R.F. Gustafson
Andrew R. Varcoe
James R. Conde
BOYDEN GRAY & ASSOCIATES PLLC
801 17th Street NW, Suite 350
Washington, DC 20006
202-955-0620
gustafson@boydengrayassociates.com

May 15, 2017

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INTRODUCTION

Urban Air Initiative; Clean Fuels Development Coalition; 25x'25; Glacial Lakes Energy, LLC; Siouxland Ethanol, LLC; ICM, Inc.; Nebraska Ethanol Board; Nebraska Ethanol Industry Coalition; South Dakota Farmers Union; North Dakota Farmers Union; Minnesota Farmers Union; Montana Farmers Union; and Wisconsin Farmers Union submit these comments, respectfully requesting that EPA repeal and replace rules that have unreasonably capped ethanol's market potential.[1] EPA's counterproductive regulatory barriers have prevented ethanol's superior automotive and environmental values from driving its continued growth in the U.S. fuel market as a source of clean octane for today's motor vehicles and the highly efficient vehicles that increased ethanol blending would enable in the near future. As a result, EPA's regulatory barriers have inhibited job creation in the ethanol industry, imposed costs without countervailing benefits, and created serious inconsistencies in regulatory policy.[2] By repealing and replacing these outdated rules, EPA would carry out the President's Executive Order on regulatory reform and air quality,[3] as well as the President's other Executive orders in support of energy independence and American agriculture.[4]

I. THE COMMENTERS' INTEREST

Urban Air Initiative is a nonprofit social welfare organization dedicated to improving fuel quality in order to reduce the public health risks posed by vehicular emissions, especially in urban areas where citizens are exposed to the highest levels of mobile source pollution.

The Clean Fuels Development Coalition was established in 1988 and works with auto, agriculture, and biofuels interests in support of a broad range of energy and environmental programs.

---

[1] Evaluation of Existing Regulations, 82 Fed. Reg. 17793 (Apr. 13, 2017).

[2] *Id.*

[3] Executive Order 13,777, § 3(d)(v), 72 Fed. Reg. 12,285 (Mar. 1, 2017); *see also* Executive Order 13,771, 82 Fed. Reg. 9339 (Feb. 3, 2017) (Reducing Regulation and Controlling Regulatory Costs).

[4] Executive Order 13,790, 82 Fed. Reg. 20237 (Apr. 28, 2017).

25x'25 is a diverse alliance of agricultural, forestry, environmental, conservation, and other organizations and businesses that are working collaboratively to advance the goal of securing 25 percent of the nation's energy needs from renewable sources by the year 2025.

Glacial Lakes Energy, LLC, was formed by the Glacial Lakes Corn Processors. Glacial Lakes Corn Processors is a South Dakota cooperative with 4,100 shareholder/investors who reside primarily in eastern South Dakota. Glacial Lakes is the sole owner of two large ethanol production facilities that annually produce over 240 million gallons of high-octane, clean-burning ethanol. Glacial Lakes' purpose is to create value for South Dakota's rural economy by returning dollars to the local economy and by providing good, quality jobs for its citizens.

Siouxland Ethanol, LLC, is a renewable fuel producer currently engaged in the production of ethanol for fuel.

ICM, Inc., is a designer and builder of ethanol plants, and a supplier of proprietary equipment and process technology to ethanol plants and other biofuels facilities.

The Nebraska Ethanol Board is a state agency supporting ethanol programs throughout the state, and assisting the industry with a range of technical marketing and regulatory issues.

The Nebraska Ethanol Industry Coalition is a non-profit organization of ethanol producers, supporters, and related industries working to support ethanol production and utilization in Nebraska and nationwide.

South Dakota Farmers Union, North Dakota Farmers Union, Minnesota Farmers Union, Montana Farmers Union, and Wisconsin Farmers Union are nonprofit organizations that work to promote the interests of farmers, ranchers, and their families, including those who grow corn for use in ethanol fuel blends, in their respective states.

II. Background

The only reason ethanol has not yet achieved a greater demand-driven share of the fuel market is that unnecessary EPA regulations have irrationally blocked a market for mid-level ethanol fuel blends. Under free market conditions, ethanol's highest and best use would be as a source of clean octane. Instead, ethanol has been unnecessarily confined to E10—gasoline with 10% ethanol—with the excess senselessly relegated to E85—a fuel that

gives lower mileage and no compensating benefits for drivers. As explained below, EPA can comply with Executive Order 13,777, by repealing and replacing outdated regulatory barriers that have blocked a market for highly efficient next-generation vehicles and the high-octane fuels they require.[5]

III. EPA SHOULD REPEAL UNNECESSARY REGULATORY BARRIERS THAT LIMIT DEMAND FOR ETHANOL.

Ethanol is a cost-effective octane enhancer with low emissions. Because of the demand for more fuel-efficient vehicles, automakers need high-octane fuel to design next-generation engines. Ethanol producers would supply the needed octane to produce these engines if only EPA removed outdated regulatory barriers that constrain ethanol blending.

In its 2014 Tier 3 Rule, EPA acknowledged that E30—gasoline blended with 30% ethanol—"could help manufacturers who wish to raise compression ratios to improve vehicle efficiency as a step toward complying with [EPA's greenhouse gas and fuel efficiency] standards. This in turn could help provide a market incentive to increase ethanol use beyond E10 and enhance the environmental performance of ethanol as a transportation fuel by using it to enable more fuel efficient engines."[6] EPA also recognized that considering fuels and vehicles together as a system "enables emission reductions that are both technologically feasible and cost effective beyond what would be possible looking at vehicle and fuel standards in isolation."[7]

Auto manufacturers have endorsed the benefits of a higher ethanol fuel. In 2011, the Auto Alliance "recommend[ed] increasing the minimum gasoline octane rating, commensurate with increased use of ethanol" to "help achieve future requirements for the reduction of greenhouse gas emissions."[8]

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[5] *See* Letter from President Trump to Friends of Renewable Fuels and Attendees of the 2017 National Ethanol Conference, *available at* http://bit.ly/2ocHq7O.

[6] Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards, 79 Fed. Reg. 23414, 23528 (Apr. 28, 2014).

[7] *Id.* at 23417.

[8] Letter from Mitch Bainwol, President and CEO, Alliance of Automobile Manufacturers, to Lisa Jackson, Administrator, EPA (Oct. 6, 2011), *available at* http://bit.ly/2pr4Z27.

Likewise, in its 2013 comments on the Tier 3 Rule, Ford agreed with EPA that "increased octane rating from increased ethanol content has the potential to allow for fuel economy, performance and emissions improvements through more efficient engine designs."[9] Mercedes commented that "[o]ctane is the single most important property of gasoline when determining engine design," and "[h]igher octane fuels permit higher compression ratios which directly improve efficiency while downsizing engines also results in greater fuel efficiency."[10]

Even more recently, during EPA's Mid-Term Evaluation of its 2022-2025 greenhouse gas and fuel efficiency standards, the Auto Alliance pointed out that higher octane fuel "is a key enabler for the next phase of advanced engines."[11] Endorsing a systems approach, the Alliance stressed that "[t]he co-design of fuels and engines is an important pathway to improve fuel economy[,]" urging EPA to "bring[] high octane fuels to market that are aligned with future engine technologies[.]"[12]

Despite the universally acknowledged efficiency and emissions benefits of midlevel ethanol blends, auto manufacturers have not produced the vehicles needed to realize these benefits, and the fuel is not universally available. That is because EPA rules have restricted the use of such fuel in the certification of new vehicles and in the market. EPA can and should repeal and replace these counterproductive rules to open the fuel market to competition.

A. EPA Should Repeal and Replace Certification Fuel Rules that Inhibit Auto Manufacturers from Building More Efficient Vehicles.

In its comments describing the efficiency benefits of vehicles designed for midlevel ethanol blends, Ford Motor Company noted that these next-generation vehicles are "already

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[9] Ford Motor Company, Comments on Proposed Tier 3 Rule, EPA-HQ-OAR-2011-0135-4349 (July 1, 2013), at 17 (hereinafter "Ford Comments").

[10] Mercedes-Benz USA, EPA-HQ-OAR-2011-0135-4676 (June 28, 2013), at 3.

[11] Alliance of Automobile Manufacturers, Comments on Draft Technical Assessment Report, EPA-HQ-OAR-2015-0827-0095 (Sept. 26, 2016), at 71.

[12] *Id.*

found in Europe," and "the introduction of higher octane rated/intermediate level ethanol blend fuel would allow for a faster introduction of more efficient vehicle designs from Europe . . . without the need for significant design changes."[13]

Instead of facilitating the marketability of these new high-efficiency vehicles, current EPA rules impede manufacturers from certifying new vehicles on a mid-level ethanol fuel, and they prevent retailers from selling it.[14]

EPA should remove counterproductive regulatory barriers, and let the market drive innovation. That would mean letting manufacturers certify new vehicles on an alternative mid-level ethanol certification fuel—like E25—so that vehicle manufacturers could build and sell vehicles that are allowed to use the fuel.

In its Tier 3 Rule, EPA discouraged applications for new test fuels by purporting to require an automaker to demonstrate that a proposed alternative test fuel is already "readily available nationwide."[15] That was an impossible requirement for a new fuel. In subsequent litigation, however, EPA stated it has discretion to grant applications for test fuels that are not yet commercially available.[16] But EPA has not formally revised the relevant rule to align with the Agency's assurances in litigation.[17]

EPA should repeal and replace its alternative certification fuel rule to clearly state—*as the Agency has already conceded in litigation*—that an auto manufacturer need not demonstrate that a proposed alternative certification fuel is currently available in commerce

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[13] Ford Comments, *supra* note 9, at 17.

[14] Current EPA rules purport to require that a fuel be "commercially available" before it may be approved to certify new vehicles for compliance with emissions and efficiency rules. 40 C.F.R. § 1065.701(c). But EPA has interpreted the "sub-sim" law, 42 U.S.C. § 7545(f), to prohibit the introduction in commerce of fuel with higher levels of ethanol than the existing certification fuel. *See infra*. EPA's interpretation and application of these statutory and regulatory provisions created a regulatory catch-22, making it impossible to test fuels that are not already commercially available.

[15] Tier 3 Rule, 79 Fed. Reg. 23414 (Apr. 28, 2014) (interpreting 40 C.F.R. § 1065.701(c)).

[16] EPA Response to Pet'n for Panel Reh'g at 7 n.3, *Energy Future Coalition v. EPA*, No. 14-1123 (Sept. 21, 2015) ("The Agency has ample discretion to consider requests on a case-by-case basis, and may evaluate trends and future market projections when considering whether to approve an alternative test fuel that is not currently on the market.").

[17] *See* 40 C.F.R. § 1065.701(c).

nationwide. It should suffice for a manufacturer to declare, based on its judgment and experience, that the requested fuel would likely be marketable in the future. The rule should also make clear that EPA may approve such a certification fuel for vehicles that also run on ordinary gasoline, as dual-fueled vehicles do by definition. Clarifying the rule in this way will encourage auto manufacturers to apply for a new certification fuel and build more efficient, cleaner, and cost-effective vehicles.

The regulatory barriers posed by EPA's alternative certification fuel rule are explained in greater detail in an appendix to these comments.[18]

B. EPA Should Repeal and Replace Its Erroneous and Outdated Interpretation of the Sub-Sim Law as Capping Ethanol Use in Existing Vehicles.

EPA misinterprets the Clean Air Act to limit the concentration of ethanol that may be blended into gasoline for use in gasoline-fueled vehicles.[19] Current EPA rules prohibit the sale of midlevel ethanol blends in gasoline-fueled vehicles produced before model year 2001.[20] EPA's proposed Renewables Enhancement and Growth Support Rule (the REGS Rule) would go further—prohibiting the sale and (for the first time) the use of gasoline containing more than 15% ethanol in any gasoline-fueled vehicle.[21]

EPA's ban on higher concentrations of ethanol is based on a misinterpretation of the "sub-sim" law, section 211(f) of the Clean Air Act. That law restricts the sale of fuel additives that are not "substantially similar" to additives in the EPA-approved test fuels used to certify new vehicles.[22] But ethanol is already used in an EPA-approved test fuel and therefore satisfies the "substantially similar" requirement: As of 2017, the gasoline

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[18] *See* Appendix A, Repealing and Replacing EPA's Alternative Certification Fuel Rules.

[19] *See* Letter from Adam M. Kushner, Air Enforcement Div., EPA, to Bob Greco, Dir. Downstream and Industrial Operations, API, at 1 (July 31, 2008).

[20] *See* 40 C.F.R. § 80.1504(a)(1). *But cf.* 56 Fed. Reg. 5352 (Feb. 11, 1991) (interpretive rule limiting the oxygen content of gasoline to 2.7% by weight, equivalent to significantly less than 10% ethanol).

[21] *Renewables Enhancement and Growth Support Rule*, Proposed Rule, 81 Fed. Reg. 80828, 80975 (Nov. 16, 2016) (to be codified at 40 C.F.R. § 80.1564(a)(3)).

[22] 42 U.S.C. § 7545(f)(1)(B).

certification fuel contains 10% ethanol.[23] However, EPA says it "would need to approve a new waiver request [under the sub-sim law] for E16 or other higher-level ethanol blends to be used in gasoline vehicles."[24] That interpretation cannot be squared with the plain meaning of the statute.

EPA's misinterpretation of the sub-sim law evades the statutory requirements for regulating fuels. Under section 211(c), EPA must demonstrate that ethanol harms public health or emissions control devices before the Agency may limit its concentration in gasoline. EPA has not attempted to make this demonstration, and the best available science demonstrates that adding ethanol to gasoline reduces emissions of harmful pollutants.

By misinterpreting the sub-sim law, EPA has unfairly shifted its legal burden to ethanol producers, requiring them to prove (contrary to section 211(c)) that a given concentration of ethanol will *not* cause a vehicle's emissions control system to fail. Only then would EPA grant a waiver of the sub-sim law and allow the fuel to be sold.

Urban Air Initiative (UAI) and a broad coalition of ethanol plants and farming groups have filed comments asking EPA to correct its erroneous interpretation of the sub-sim law and to affirm that the law does not prohibit the use of mid-level ethanol blends in gasoline-fueled cars.[25] The proposed rule's purpose is to "facilitate further expansion of ethanol blended fuels,"[26] but codifying EPA's mistaken ban on mid-level ethanol blends would have the opposite effect. EPA should repeal prior rules and guidance misinterpreting the sub-sim law to limit the concentration of ethanol in gasoline,[27] and replace them with a rule that correctly interprets the sub-sim law according to its plain meaning: it cannot limit ethanol blending, because ethanol is a fuel additive used in certification.

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[23] 40 C.F.R. § 1065.710(b)(2).

[24] Proposed REGS Rule, *supra* note 21, 81 Fed. Reg. at 80831.

[25] Urban Air Initiative et al., Comments on Renewables Enhancement and Growth Support Rule, EPA-HQ-OAR-2016-0041 (Feb. 16, 2017).

[26] *Id.* at 80831.

[27] *See supra* note 20.

EPA's misinterpretation of the sub-sim law is explained in greater detail in an appendix to these comments.[28]

C. EPA Should Repeal and Replace Its Irrational RVP Rule that Limits the Viability of E15 and Mid-Level Ethanol Blends.

Even for ethanol blends that are not constrained by EPA's interpretation of the sub-sim law, the Agency's outdated RVP rule limits the times of year in which they may be used. The result is that most drivers today have no access to E15, even though, for several years, E15 has been approved for use in Model Year 2001 and newer vehicles.[29] That is because EPA has needlessly interpreted the Clean Air Act to deprive higher ethanol blends of the benefit of a partial waiver of the Reid Vapor Pressure (RVP) limit, a waiver that—by statute—ought to apply to all gasoline containing at least 10% ethanol.[30]

RVP is a measure of a fuel's tendency to evaporate. In general, fuel must have an RVP of 9 psi or less. But under section 211(h)(4) of the Clean Air Act, a less stringent standard of 10 psi governs "fuel blends containing gasoline and 10 percent denatured anhydrous ethanol."[31] EPA interprets this to apply only to gasoline containing 9 or 10 percent ethanol, effectively inserting the phrase *no more than* into the statute. But the text of the statute hardly requires that result; particularly given the statutory context and the properties of ethanol blends in excess of E10, the text makes better sense if it is read as encompassing fuel blends that contain at least 10 percent ethanol.

EPA's past interpretation is unreasonable, because fuel's evaporative tendency diminishes with increasing levels of ethanol over 10%. In other words, E15 has lower evaporative emissions than E10 does. But, as a result of EPA's double standard, retailers must stop selling E15—an otherwise legal fuel, with lower RVP than E10—during certain times of year or else use a separate low-vapor-pressure gasoline blendstock for E15. Thus, EPA regulations have artificially depressed the amount of clean-octane ethanol in the

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[28] *See* Appendix B, Repealing and Replacing EPA's Interpretation of the Sub-Sim Law.

[29] Partial Grant of Clean Air Act Waiver Application Submitted by Growth Energy To Increase the Allowable Ethanol Content of Gasoline to 15 Percent, 76 Fed. Reg. 4662 (Jan. 26, 2011).

[30] *Id.* at 4675.

[31] 42 U.S.C. § 7545(h)(4).

market, despite the economic and environmental benefits that would come with increased ethanol consumption.

This issue is also relevant to blends over E15. EPA's interpretation of the one-pound waiver would irrationally limit the use of E25 as well, even though E25 is an even cleaner (and more efficient) fuel with less evaporative emissions and lower RVP than both E10 and E15. Maintaining EPA's unnecessary and counterproductive interpretation of the waiver provision would delay commercial adoption of the fuel the auto industry needs for the next generation of highly efficient engines.

EPA should repeal its rule arbitrarily limiting the one-pound waiver to blends of no more than 10% ethanol. EPA's legal authority to reinterpret the one-pound waiver to extend to higher ethanol blends is explained in greater detail in an appendix to these comments.[32]

D. EPA Should Repeal and Replace Its Inaccurate Fuel Economy Formula.

EPA should repeal and replace its outdated fuel economy formula. EPA has admitted that part of its fuel efficiency formula is erroneous and that it unfairly penalizes fuel with ethanol in it; but EPA did not take steps to fix the problem. The problem is an important one for automakers that face increasingly stringent fuel economy standards, and it discourages them from developing high-efficiency engines that require higher octane ratings, which for present purposes means higher ethanol content, although that could change with new technology.

In brief, the fuel-economy calculation contains an "R-factor," which is intended to make fuel economy testing on today's fuel equivalent to fuel economy testing in 1975 by adjusting for the lower energy content of ethanol.[33] But as EPA has acknowledged, the current EPA-mandated R-factor of 0.6 is erroneous, and fails to achieve its statutory

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[32] *See* Appendix C, Repealing and Replacing EPA's Limit on Ethanol's One-Pound RVP Waiver.

[33] *See* 26 U.S.C. § 4064(c) ("Fuel economy . . . shall be measured in accordance with testing and calculation procedures . . . utilized by the EPA Administrator for model year 1975 . . . or procedures which yield comparable results.").

purpose.[34] The auto industry has asked EPA for an R-factor of 1.0.[35] In response, EPA has acknowledged that the current R-factor is wrong and suggested that a corrected value might lie "between 0.8 and 0.9."[36]

Although EPA has promised to fix the R-factor as necessary,[37] the Agency has failed to act.

More fundamentally, the current fuel economy formula fails to account for the reduction of petroleum consumption that is achieved by the ethanol portion of gasoline. Under the Energy Independence and Security Act of 2007 (EISA), EPA has authority to promote energy independence by "decid[ing] on the quantity of other fuel that is equivalent to one gallon of *gasoline*."[38] EPA has relied on that authority to calculate a fuel efficiency credit for electric vehicles, thus making compliance easier for auto manufacturers.[39] EPA should treat ethanol no differently than electricity for this purpose, treating (for example) gasoline with 10% ethanol (E10) as equivalent to 90% of a gallon of gasoline for purposes of fuel economy compliance.

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[34] The error of the current R-factor, and its negative impact on ethanol due to that fuel's lower energy density, is explained in detail in comments filed by Boyden Gray & Associates. Energy Future Coalition & Urban Air Initiative, Comments on Proposed Tier 3 Rule, EPA-HQ-OAR-2011-0135-4353 (July 1, 2013), at 41-43 & Appendix I, *available at* http://boydengrayassociates.com/comments-of-the-energy-future-coalition-and-urban-air-initiative-on-proposed-tier-3-motor-vehicle-emission-and-fuel-standards-july-1-2013/.

[35] Stephen Douglas & Julia Rege, Alliance of Automobile Manufacturers & Association of Global Automakers, Comments on Proposed Tier 3 Rule, EPA- HQ-OAR-2011-0135-4461 (July 1, 2013), at 93.

[36] Aron Butler, Analysis of the Effects of Changing Fuel Properties on the EPA Fuel Economy Equation and R-Factor, at 4–5, Memorandum to the Tier 3 Docket, EPA-HQ-OAR-2011-0135 (Feb. 28, 2013).

[37] 79 Fed. Reg. at 23531 ("While there has been some data evaluated to assess the impact of changing the emission test fuel on the 'R' factor, EPA did not propose a value in the NPRM and specifically stated that we would continue to investigate this issue and if necessary address it as part of a future action, as opposed to changing it in the Tier 3 final rule."); *id.* at 23532 ("EPA expects to have the needed data in early to mid 2015 and will then be in a position to conduct a thorough assessment of the impacts of different emission test fuels on Tier 3/LEV III vehicles and develop any appropriate adjustments and changes, in consultation and coordination with NHTSA.").

[38] 49 U.S.C. § 32904(c) (emphasis added).

[39] Response to Comments on the 2012 CAFE Rule, at 6-164.

The defects in EPA's fuel economy formula are explained in greater detail in an appendix to these comments.[40]

E. EPA Should Repeal and Replace Its Rule Requiring States To Use Incorrect Emissions Estimates in Pollution Reduction Planning.

EPA added a new regulatory impediment to higher ethanol usage when it published a vehicular emissions model called MOVES2014a that reports inaccurate estimates of ethanol's emissions effects. EPA rules require States to use the new model in constructing their State Implementation Plans (SIPs) for compliance with EPA's National Ambient Air Quality Standards (NAAQS).[41]

The MOVES2014a model is based on an EPA-commissioned fuel study that employed a faulty "match-blending" methodology to study emissions using test fuels that are not sold, and cannot legally be sold, in the marketplace. Contrary to multiple peer-reviewed fuel studies, this analysis erroneously blames ethanol for emissions effects that were actually caused by the addition of toxic aromatic hydrocarbons to the test fuel along with ethanol.[42] (The match-blending approach was later rejected in a peer-reviewed paper authored by Ford and GM engineers.)[43]

The MOVES2014a model is also flawed on procedural grounds. When EPA promulgated the rule mandating the use of MOVES2014, it failed to use the notice-and-comment procedure required by the Administrative Procedure Act, even though the Agency had given advance notice and accepted public comment on past models.[44] The States of

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[40] *See* Appendix D, Repealing and Replacing EPA's Erroneous Fuel Economy Calculation.

[41] Official Release of the MOVES2014 Motor Vehicle Emissions Model for SIPs and Transportation Conformity, 79 Fed. Reg. 60343 (Oct. 7, 2014).

[42] *See* State of Kansas et al., Request for Correction re EPAct/V2/E-89 Fuel Effects Study and Motor Vehicle Emissions Simulator Model (MOVES2014), RFC 17001 (Jan. 19, 2017), *available at* https://www.epa.gov/sites/production/files/2017-02/documents/epact_-_fuel_effects_study_rfc_17001.pdf.

[43] James E. Anderson et al., *Issues with T50 and T90 as Match Criteria for Ethanol-Gasoline Blends*, SAE International, 2014-01-9080, (Nov. 1, 2014).

[44] *See* Brief for Petitioners, *Kansas v. EPA*, No. 14-1268 (D.C. Cir. Oct. 28, 2015), *available at* http://boydengrayassociates.com/petitioners-opening-brief-kansas-v-epa-no-14-1268-d-c-cir-july-2-2015/.

Kansas and Nebraska challenged the MOVES2014 model on the basis of this procedural violation and the model's substantive defects. The D.C. Circuit did not reach the merits; it concluded that the States lacked standing, because they were currently in compliance with the air quality standards and thus did not yet have to use the model.[45] States will have standing if EPA finalizes nonattainment designations under the new air quality standard for ozone.

EPA is now developing the next version of the model while its MOVES Review Work Group reviews the current model. EPA has not indicated whether the new model will go through notice-and-comment rulemaking. Unless EPA changes its approach, the Agency will continue to rely on data from a flawed fuel study whose design process was, contrary to the requirements of the Executive Order, "insufficiently transparent to meet the standard of reproducibility."[46]

By requiring States to use this inaccurate model, EPA deprived States of their lawful discretion to decide whether to adopt NAAQS attainment strategies that encourage the use of ethanol in motor vehicle fuel within their borders. Instead, MOVES2014a encourages States to adopt counterproductive policies that *delay* NAAQS attainment by limiting the ethanol content of fuel. That not only violates basic cooperative federalism principles; it is perverse from an air quality and human health perspective. Increased levels of ethanol would reduce pollution, as demonstrated by numerous peer-reviewed studies.[47]

EPA should repeal its rule requiring the States to use flawed emission factors, and EPA should repeal and replace its flawed model with emission factors that accurately predict ethanol's effect on emissions. Until a replacement model can be developed, EPA

Boyden Gray & Associates represented the States of Kansas and Nebraska, the Energy Future Coalition, and Urban Air Initiative as petitioners challenging the model.

[45] *Kansas v. EPA*, 638 Fed. App'x 11 (D.C. Cir. 2016).

[46] Request for Comment, 82 Fed. Reg. at 17,793 (noting that Executive Order 13,777 requires EPA to "evaluate regulations that rely in whole or in part on data, information, or methods that are not publicly available or that are insufficiently transparent to meet the standard of reproducibility").

[47] Anderson, *supra* note 43, at 1031 & nn.1, 13, 14, 15, 16, 17, 18, 19) (citing studies).

should lock the MOVES2014 model's ethanol parameter at 10% to prevent spurious comparisons between fuels with different levels of ethanol content.

A more detailed explanation of the defects in the MOVES2014 emissions model is provided in an appendix to these comments,[48] and in a Request for Correction of Information.[49]

CONCLUSION

Ethanol is a price-competitive, safe, and efficient high-octane fuel additive, but its highest and best use is currently thwarted by counterproductive EPA rules. Each of these EPA regulatory barriers has senselessly limited competition in the market for transportation fuel, killing American jobs and depriving drivers of more economical and healthier alternatives to regular gasoline.

Repealing and replacing regulatory barriers that frustrate the market for midlevel ethanol blends would effectuate the President's regulatory reform orders.[50] These actions will also help EPA to comply with other Executive Orders by advancing energy independence and American agriculture.[51]

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[48] *See* Appendix E, Repealing and Replacing EPA's MOVES2014a Emissions Model.

[49] State of Kansas et al., Request for Correction re EPAct/V2/E-89 Fuel Effects Study and Motor Vehicle Emissions Simulator Model (MOVES2014), RFC 17001 (Jan. 19, 2017), *available at* https://www.epa.gov/sites/production/files/2017-02/documents/epact_-_fuel_effects_study_rfc_17001.pdf.

[50] *See* Executive Order 13,777, § 3(d)(v), 72 Fed. Reg. 12,285 (Mar. 1, 2017); Executive Order 13,771, 82 Fed. Reg. 9339 (Feb. 3, 2017) (Reducing Regulation and Controlling Regulatory Costs).

[51] Executive Order 13,790, 82 Fed. Reg. 20237 (Apr. 28, 2017).

Appendix A

Reforming EPA's Alternative Certification Fuel Rules

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May 15, 2017

To: Samantha K. Dravis
Regulatory Reform Officer and Associate Administrator, Office of Policy,
Environmental Protection Agency

Re: EPA Should Repeal Unnecessary Test Fuel Application Standards and Approve a Midlevel Ethanol Alternative Certification Fuel

Certification Fuel Properties Limit the Vehicles Automakers Can Build.

"Before a manufacturer may introduce a new motor vehicle into commerce, it must obtain an EPA certificate indicating compliance with the requirements of the Act and applicable regulations."[1] To obtain the necessary certificate, automobile manufacturers must test new vehicle models for compliance with air toxic emissions standards using a special "test fuel" (or "certification fuel") whose properties are defined by EPA.[2] The same procedures and test fuel are used to ensure that manufacturers meet NHTSA and EPA's increasingly stringent fuel efficiency and greenhouse gas standards on a fleet-wide basis.[3]

The makeup of the test fuel therefore determines the kinds of engines that car companies are able to design, build, and sell. It also determines the kinds of fuel that may lawfully be sold, because the composition of commercial fuel is governed by the Clean Air Act's "sub-sim" law,[4] and EPA interprets this requirement to limit the ethanol content of market fuel to the ethanol content of the test fuel.[5]

EPA Raised the Possibility of a Midlevel Ethanol Test Fuel.

Under 40 C.F.R. § 1065.701(c), EPA may approve an auto manufacturer's request for an alternative certification fuel.

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[1] *Ethyl Corp. v. EPA*, 306 F.3d 1144, 1146 (D.C. Cir. 2002); *see* 42 U.S.C. § 7522(a)(1) (prohibiting sale of vehicles without a certificate of conformity).

[2] *See* 42 U.S.C. § 7521 (authorizing EPA to prescribe emission standards); *id.* § 7525(a)(4)(A) (authorizing EPA to set and revise "test procedures" and test "fuel characteristics").

[3] *See* CAFE Rule, 77 Fed. Reg. 62624.

[4] 42 U.S.C. § 7545(f)(1)(B). Under the plain meaning of the sub-sim law, it does not limit ethanol blending, because ethanol is a fuel a "fuel additive utilized in the certification of any . . . vehicle." *Id.* But EPA recently proposed to codify its interpretation of the sub-sim law to prohibit the sale of gasoline blends with more than 15% ethanol for use in gasoline-fueled vehicles. *Renewables Enhancement and Growth Support Rule*, Proposed Rule, 81 Fed. Reg. 80828, 80975 (Nov. 16, 2016) (to be codified at 40 C.F.R. § 80.1564(a)(3)).

[5] *Renewables Enhancement and Growth Support Rule*, Proposed Rule, 81 Fed. Reg. 80828, 80975 (Nov. 16, 2016) (to be codified at 40 C.F.R. § 80.1564(a)(3)).

In the Tier 3 rulemaking that applied this rule to light-duty vehicles, EPA suggested that the Agency would approve an alternative certification fuel "if manufacturers were to design vehicles that required operation on a higher octane, higher ethanol content gasoline (*e.g.*, dedicated E30 vehicles or [flexible-fuel vehicles] optimized to run on E30 or higher ethanol blends)."[6]

EPA acknowledged that such a certification fuel with 30% ethanol "could help manufacturers who wish to raise compression ratios to improve vehicle efficiency as a step toward complying with the 2017 and later light-duty greenhouse gas and CAFE standards. This in turn could help provide a market incentive to increase ethanol use beyond E10."[7]

The Auto Industry Responded in Favor of a Midlevel Ethanol Test Fuel.

The auto industry responded favorably to the prospect of a new high-octane certification fuel with higher ethanol content. The Alliance of Automobile Manufacturers and the Association of Global Automakers explained that ethanol's "in cylinder cooling effect," along with its high octane rating, make a "mid-level gasoline-ethanol blend" particularly well suited for "improv[ing] vehicle efficiency and lower[ing] GHG emissions," through "increas[ing] the engine compression ratio" and "downsizing of the engine."[8]

General Motors, Ford, and Mercedes-Benz each filed separate comments endorsing the concept of a higher octane, mid-blend ethanol certification fuel.[9] Ford "strongly recommend[ed] that EPA pursue regulations . . . to facilitate the introduction of higher octane rating market fuels," noting that they "offer the potential for the introduction of more efficient vehicles."[10] In light of the increasing stringency of the CAFE Rule, Ford's recommendation

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[6] Tier 3 Rule, 79 Fed. Reg. at 23528.

[7] *Id.* at 23528-29.

[8] Stephen Douglas & Julia Rege, Alliance of Automobile Manufacturers & Association of Global Automakers, Comments on Proposed Tier 3 Rule, EPA-HQ-OAR-2011-0135-4461 (July 1, 2013), at 52 (hereinafter "Auto Alliance Comments"). The trade groups noted that "[w]hile higher ethanol, higher octane fuels can be useful in all types of engines to varying degrees, they are of particular benefit to direct-injection (DI) engines," which are becoming more prevalent because of their efficiency benefits. *Id.* at 53.

[9] *See* Julian Soell & R. Thomas Brunner, Mercedes-Benz, Comments on Proposed Tier 3 Rule, EPA-HQ-OAR-2011-0135-4676 (June 28, 2013), at 3-4 (hereinafter "Mercedes Comments"); GM Comments at 14) ("support[ing] the future of higher octane and higher ethanol content in order to provide a pathway to improved vehicle efficiency and lower GHG emissions"); Cynthia Williams, Ford Motor Company, Comments on Proposed Tier 3 Rule, EPA-HQ-OAR-2011-0135-4349 (July 1, 2013), at 16 (hereinafter "Ford Comments") ("Ford supports the development and introduction of an intermediate level blend fuel (E16-E50), with a minimum octane rating of 91 anti-knock index (AKI) that increases proportionally as ethanol is splash-blended on top of the base Tier 3 gasoline emission test fuel. The development of such a fuel would enable the first steps to the development of a new generation of highly efficient internal combustion engine vehicles. We look forward to future collaboration with the EPA on this item."); *id.* at 3 (commending the idea of "maximiz[ing] vehicle efficiency in tandem with use of renewable fuels").

[10] Ford Comments, *supra* note 9, at 3.

was time sensitive: "Progress on this issue will be a key parameter for consideration in [EPA and NHTSA's] . . . mid-term evaluation" of the light-duty CAFE Rule in 2017.[11]

The manufacturers expressed their need for a high-octane mid-level ethanol blend test fuel as a means of improving fuel efficiency through higher compression ratios.[12] The automakers explained why octane-rich ethanol's contribution to lower carbon emissions, increased fuel efficiency, and improved driving performance makes a mid-level ethanol blend the optimal solution for automakers' octane needs.[13] Finally, they explained that selling vehicles designed for such a fuel is not only feasible—it is being done already in foreign markets.[14]

EPA's "Readily Available Nationwide" Standard Would Have Blocked a Midlevel Ethanol Test Fuel.

The auto industry and other groups expressed concern that a request for an alternative certification fuel rule under 40 C.F.R. § 1065.701(c) would be thwarted by that rule's requirement that the proposed alternative certification fuel be "commercially available."[15] In

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[11] *Id.* (citing 77 Fed. Reg. 62624 (Oct. 15, 2012)).

[12] *See* Ford Comments, *supra* note 9, at App'x A: Literature Review of Benefits of High Octane/High Ethanol Fuels, at 2) ("Fuel with higher octane ratings will also be increasingly important for advanced engines now being introduced that provide greater efficiency through downsizing and/or turbocharging, and that operate more often at high load where the most efficient operating conditions are limited by knock."); Mercedes Comments, *supra* note 9, at 3–4 ("Octane is the single most important property of gasoline when determining engine design. . . . Higher octane fuels permit higher compression ratios which directly improve efficiency while downsizing engines also results in greater fuel efficiency. The optimized combination of those two actions with gasoline direct-injection provides remarkable gains in fuel economy but requires high octane market fuel—higher octane than is available today.").

[13] *See* Ford Comments, *supra* note 9, at 17 ("The higher octane number . . . for ethanol versus today's regular gasoline . . . and higher heat of vaporization associated with gasoline-ethanol blends can improve engine efficiency through engine redesign and use of higher compression ratios. . . . [I]ncreased octane rating from increased ethanol content has the potential to allow for fuel economy, performance and emissions improvements through more efficient engine designs. Raising the minimum octane rating requirement would allow manufacturers to design engines with greater thermal efficiency through higher compression ratios and/or smaller displacement turbo-charged engines. Current engines in the fleet could also benefit from the higher octane rating through more aggressive spark timing during certain driving conditions."); Mercedes Comments, *supra* note 9, at 4 ("This powerful fuel enjoys both reduced carbon intensity as well as the renewable aspects of ethanol. A vehicle equipped with a powertrain . . . optimized for a high-octane, mid-blend ethanol fuel . . . can simultaneously fulfill what the customer desires—performance and economy, while reducing the environmental impact.").

[14] *See* Ford Comments, *supra* note 9, at 17 ("High compression ratio engines are already found in Europe . . . . [T]he introduction of higher octane rated/intermediate level ethanol blend fuel would allow for a faster introduction of more efficient vehicle designs from Europe with lower CO_2 emissions and increased efficiency . . . without the need for significant design changes."); Mercedes Comments, *supra* note 9, at 4 ("Mercedes-Benz vehicle offerings include those with E25 capability in various global markets that could be introduced . . . to the U.S. market if regulatory and commercial conditions warrant.").

[15] 40 C.F.R. § 1065.701(c)(1)(ii); *see also* Energy Future Coalition & Urban Air Initiative, Comments on Proposed Tier 3 Rule, EPA-HQ-OAR-2011-0135-4353 (July 1, 2013), at 9.

the preamble to the Tier 3 Rule, EPA suggested that an alternative test fuel must be "readily available nationwide" to satisfy this requirement.[16]

The Energy Future Coalition and Urban Air Initiative challenged the alternative certification fuel rule in the D.C. Circuit, arguing that EPA's "readily available nationwide" standard was arbitrary and capricious because it was impossible to meet.

EPA Rescinded its "Readily Available Nationwide" Standard in Favor of Discretionary Consideration of Future Availability.

In the course of the litigation, EPA conceded that it could approve an automaker's application for alternative test fuels without requiring that the fuel be "readily available nationwide."[17] That language in the preamble was a nonbinding paraphrase of the rule itself. And EPA further conceded that the rule's "commercial available" standard is a discretionary "factor[] EPA would consider," rather than a "mandatory prerequisite" for approving a new test fuel.[18] At oral argument, EPA conceded that the rule's reference to "commercial availability" merely "codif[ies] the practice of the agency," which has been to consider a new fuel's potential to become commercially viable in the future.[19] Therefore, EPA has discretion to approve an alternative certification fuel that is not yet on the market, but is likely to be commercially viable.[20]

Moreover, EPA said that until Model Year 2022, an automaker's application for an alternative test fuel can be evaluated without regard to commercial availability or any other "substantive criteria." In its brief to the Court, EPA identified 40 C.F.R. § 86.113-94(g) as an alternate mechanism for requesting and approving a new test fuel, separate from § 1065.701(c), which "need not be used by vehicle manufacturers until model year 2022."[21] Section 86.113-94(g) does not mention commercial availability or any of the other requirements of § 1065.701(c). Relying on that rule, EPA emphasized that manufacturers could get permission to use alternative test fuel "without specifying any substantive criteria."[22]

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[16] Tier 3 Rule, 79 Fed. Reg. at 23528.

[17] EPA Brief at 50, *Energy Future Coal. v. EPA*, No. 14-1123 (D.C. Cir. Feb. 11, 2015).

[18] *Id.* at 26.

[19] Transcript of Oral Argument 23, *Energy Future Coal. v. EPA*, No. 14-1123 (D.C. Cir. Mar. 20, 2015).

[20] EPA Brief at 44 ("EPA did not require strict compliance with the listed factors."); id. ("§ 1065.701(c) identifies 'commercial availability' of a proposed test fuel as a factor EPA will consider, but does not require that all such listed factors be met for approval."); *see also* EPA Response to Pet'n for Reh'g at 7 n.3 ("The Agency has ample discretion to consider requests on a case-by-case basis, and may evaluate trends and future market projections when considering whether to approve an alternative test fuel that is not currently on the market."

[21] EPA Brief at 11.

[22] EPA Brief at 3; *see also id.* at 26 ("Tier 3 retained the existing alternative test fuel provision at 40 C.F.R. § 86.113-94(g), which does not specify criteria, such as commercial availability.").

The D.C. Circuit Suggested E30 Would Be Commercially Viable if Approved.

In light of these concessions, the D.C. Circuit upheld the rule: It was "reasonable for EPA to require vehicle manufacturers to use the same fuels in emissions testing that vehicles *will* use out on the road."[23] But the Court also suggested that a midlevel ethanol fuel could meet this forward-looking standard. Based on the automakers comments in support of a new fuel, the Court found that "if EPA permitted vehicle manufacturers to use E30 as a test fuel, there is substantial reason to think that at least some vehicle manufacturers would use it."[24]

EPA Should Repeal its Unnecessary "Commercially Available" Standard and Approve a Midlevel Ethanol Test Fuel.

EPA should repeal its unnecessary "commercially available" fuel standard to align with the commitment the Agency has already made in court. In addition, if the auto industry accepts EPA's invitation to apply for a midlevel ethanol certification fuel, EPA should grant that application, or unilaterally approve a new test fuel on its own initiative as the Agency has done in the past. As Ford said in its comments, a high-octane, high-ethanol certification fuel is relevant to the Midterm Evaluation of the GHG standard, because it is a key enabler of next-generation vehicle efficiency technology.[25] EPA could encourage an auto manufacturer's application by publicly reinforcing the interpretation it stated in litigation: immediate nationwide commercial availability is not a prerequisite for approval of an alternative certification fuel.

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[23] *Energy Future Coal. v. EPA*, 793 F.3d 141, 146 (D.C. Cir. 2015).

[24] *Id.*

[25] Ford Comments, *supra* note 9, at 3 (citing 77 Fed. Reg. 62624 (Oct. 15, 2012)).

Appendix B

Reforming EPA's Interpretation of the Sub-Sim Law

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May 15, 2017

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Re: EPA Should Correct its Misinterpretation of the Sub-Sim Law.

Last year, EPA proposed the Renewables Enhancement and Growth Support (REGS) Rule. If finalized, the REGS Rule would prohibit "the sale or introduction of gasoline containing greater than 15 volume percent ethanol . . . into any model year 2001 or newer . . . motor vehicle,"[1] with the exception of FFVs.[2] EPA implies that this policy is required by the "sub-sim" law, section 211(f) of the Clean Air Act.[3] It follows that EPA "would need to approve a new [sub-sim] waiver request for E16 or other higher-level ethanol blends to be used in [non-FFV] gasoline vehicles."[4]

The Proposed Rule should not be finalized, because EPA's interpretation violates the plain meaning of the "sub-sim" statute and would impose a needless regulatory burden on ethanol producers, fuel retailers, and drivers. In addition, EPA should repeal prior interpretative rules misinterpreting section 211(f), and replace them with an interpretative rule clarifying that section 211(f) does not prohibit the sale of midlevel ethanol blends.

The REGS Rule Is Based on a Misinterpretation of the Sub-Sim Law.

In the sub-sim law, Congress made it unlawful "to first introduce into commerce, or to increase the concentration in use of, any fuel or fuel additive for use by any person in motor vehicles . . . which is not substantially similar to any fuel or fuel additive utilized" in the certification of new motor vehicles.[5]

EPA has historically controlled ethanol levels in gasoline by interpreting the sub-sim law to "regulate the . . . *total concentration* of fuel and fuel additives."[6] Thus, in 2008, EPA declared that under CAA § 211(f), "it is illegal for owners or operators of retail gasoline stations to sell

[1] *Renewables Enhancement and Growth Support Rule*, 81 Fed. Reg. 80828, 80975 (Nov. 16, 2016) (hereinafter Proposed Rule) (to be codified at 40 C.F.R. § 80.1564(a)(3)).

[2] *Id.* (to be codified at 40 C.F.R. § 80.1564(a)(4)).

[3] *Id.* at 80830.

[4] *Id.* at 80831.

[5] 42 U.S.C. § 7545(f)(1)(B).

[6] Proposed Rule, *supra* note 1, at 80877–78 (emphasis added); *see Regulation of Fuels and Fuel Additives; Definition of Substantially Similar*, 56 Fed. Reg. 5352, 5354 (Feb. 11, 1991); Kelsi Bracmort, Cong. Research Serv., R40445, Intermediate-Level Blends of Ethanol in Gasoline, and the Ethanol 'Blend Wall' 7 (2011) ("EPA has defined gasoline content (by weight), effectively limiting the concentration to roughly 7.5% (by volume).").

gasoline blended with more than 10% ethanol for use in gasoline-only vehicles and engines."[7] And in 2011, EPA granted a sub-sim waiver allowing the use of gasoline with 15% ethanol in model year 2001 and newer vehicles.[8] This waiver reaffirmed EPA's view that the sub-sim law limited the allowable concentration of ethanol in gasoline. As a condition of the waiver, for example, EPA required fuel manufacturers to adopt "[r]easonable measures . . . ensuring that consumers do not misfuel" by using gasoline with more than 15% ethanol in "vehicles or engines not covered by the waiver."[9]

Beginning this year (2017), automakers are required to certify light-duty vehicles using a test fuel that contains 10% ethanol—in excess of the 2.7% percent oxygen cap in EPA's obsolete definition of "substantially similar."[10] Even though ethanol is now undoubtedly a fuel additive used in certification, the Proposed Rule insists that E16–E83 blends "cannot legally be used in a conventional gasoline vehicle" without a waiver of the sub-sim law.[11]

The Sub-Sim Law Does Not Limit the Concentration of Ethanol in Gasoline.

The sub-sim law prohibits increasing the concentration of fuel additives that are *not* substantially similar to a certification fuel,[12] but it does not limit ethanol content. To be sure, ethanol is a "fuel additive."[13] But ethanol is substantially similar to a fuel additive used in the certification of new vehicles. Indeed, ethanol itself *is* a fuel additive used in certification: the new gasoline test fuel, for example, contains 9.6% to 10% ethanol.[14] Whatever interpretations it may allow, the term "substantially similar" cannot reasonably be interpreted to *exclude* fuel additives that are *identical* to those used in certification.[15] Yet that is exactly what EPA's interpretation does by capping ethanol blending despite its use in certification fuel.

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[7] Letter from Adam M. Kushner, Air Enforcement Div., EPA, to Bob Greco, Dir. Downstream and Industrial Operations, API, at 1 (July 31, 2008).

[8] *Partial Grant of Clean Air Act Waiver Application Submitted by Growth Energy To Increase the Allowable Ethanol Content of Gasoline to 15 Percent*, 76 Fed. Reg. 4662, 4682 (Jan. 26, 2011).

[9] *Id.*

[10] 40 C.F.R. § 1065.710(b)(2).

[11] Proposed Rule, *supra* note 1, at 80843; *id.* at 80975 (to be codified at 40 C.F.R. § 80.1564(a)(3)).

[12] 42 U.S.C. § 7545(f)(1)(B).

[13] *See* 40 C.F.R. § 79.2(e) (defining additive).

[14] 40 C.F.R. § 1065.710(b)(2).

[15] *See United States v. Home Concrete & Supply, LLC*, 132 S. Ct. 1836, 1846 n.1 (2012) (Scalia, J., concurring in part and concurring in the judgment) ("It does not matter whether the word 'yellow' is ambiguous when the agency has interpreted it to mean 'purple' ") (citation omitted).

The Act's Structure Conflicts with EPA's Interpretation of "Substantially Similar."

EPA's interpretation of the sub-sim law is also "inconsistent with the administrative structure that Congress enacted into law."[16] A "telling indication that [EPA] has misconstrued the meaning of" the sub-sim law "is the plain language of a nearby provision, section 211(c)(1)."[17] That provision of the Act sets out the criteria that EPA is required to consider before "controlling or prohibiting the sale of fuel additives."[18]

Under section 211(c)(1), before controlling existing fuel additives, EPA must find that a fuel or additive (1) "causes, or contribute to, air pollution which may reasonably be anticipated to endanger the public health or welfare" or (2) causes "emissions products" that "impair to a significant degree the performance of any emission control device or system which is [or would soon be] in general use."[19]

Recognizing that regulatory controls on existing fuel additives can be disruptive, Congress limited EPA's discretion in subparagraph 211(c)(2)(A) to the control of fuels and additives that "may reasonably be anticipated to endanger the public health," and required the Agency to consider all relevant "medical and scientific evidence . . . including . . . other feasible means of achieving the emission standards" required by the Act.[20] As the D.C. Circuit has explained, this provision requires EPA to consider whether the evidence shows that a fuel or fuel additive would "significantly increase the total human exposure" to pollution "so as to cause a significant risk of harm to human health."[21] EPA has no "power to act on hunches and wild guesses."[22]

In an adjacent provision, subparagraph 211(c)(2)(B), Congress similarly limited EPA's discretion to prevent damage to vehicle emissions controls by requiring the Agency to consider "scientific and economic data, including a cost benefit analysis comparing" feasible regulatory alternatives, and to hold "public hearing[s] and publish findings" upon request.[23] Together, these requirements "establish[] a rebuttable presumption that the Agency should maintain a

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[16] *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 125 (2001).

[17] *Ethyl Corp. v. EPA*, 51 F.3d 1053, 1061 (D.C. Cir. 1995) (citing 42 U.S.C. 7545(c)).

[18] *Id.*

[19] 42 U.S.C. § 7545(c)(1).

[20] *Id.* § 7545(c)(2)(A).

[21] *Ethyl Corp. v. EPA*, 541 F.2d 1, 32 (1976).

[22] *Ethyl Corp.*, 541 F.2d at 28. A determination of significant risk requires an examination of the "probability and severity" of the risk being regulated. *Id.* at 18.

[23] 42 U.S.C. § 7545(c)(2)(B).

laissez faire posture with regard to fuel regulation."[24] EPA must show "why regulation, as opposed to no regulation, is necessary or otherwise advisable."[25]

Considered together, the detailed provisions of section 211(c) "demonstrate[] that Congress crafted a very definite scheme in which [EPA] was to consider certain criteria before . . . . prohibiting or controlling the manufacture or sale of fuel additives."[26]

The D.C. Circuit has rejected EPA's prior attempt to circumvent this "very definite scheme."[27] In *Ethyl Corp. v. EPA*, the Court rejected EPA's attempt to deny a sub-sim waiver for a fuel additive under 211(f)(4) because of "concern about the effects on public health that could result if EPA were to" grant such a waiver.[28] In rejecting EPA's claim that it could use section 211(f) to regulate fuels "in the public interest," the Court observed that the detailed scheme of regulation established by section 211(c) demonstrated that "Congress did not delegate to the Agency the authority to consider other factors 'in the public interest' such as public health when acting under section 211(f)(4)."[29]

As in *Ethyl*, the Proposed Rule's reliance on section 211(f) to regulate the concentration of ethanol in gasoline under a standard of its own making "operates in complete defiance of the plain terms of the statutory criterion and with no explanation whatsoever for the application of a different standard."[30] If EPA wishes to control the concentration of ethanol in gasoline, it "may initiate proceedings under section 211(c)(1)."[31]

The Proposed REGS Rule Would Shift EPA's Burden to Fuel Manufacturers.

The implications of EPA's subversion of the Clean Air Act's fuel regulation scheme are significant. Under section 211(c), it is EPA who bears the burden of finding that a fuel additive will "cause[], or contribute[], to air pollution" that will either "impair . . . any emission control device" or "endanger the public health or welfare."[32] By misconstruing section 211(f) to control fuel additive concentration, EPA unlawfully shifts its burden to fuel manufacturers who, to get a sub-sim waiver, must "establish" that the requested concentration "will not cause or contribute to a failure of any emission control device."[33]

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[24] *Amoco Oil Co. v. EPA*, 501 F.2d 722, 736 (D.C. Cir. 1974).

[25] *Id.*

[26] *Ethyl Corp.*, 51 F.3d at 1061.

[27] *Ethyl Corp.*, 51 F.3d at 1061.

[28] *Id.* at 1057.

[29] *Id.* at 1061.

[30] *Id.* at 1063.

[31] *Id.* at 1064.

[32] 42 U.S.C. § 7545(c)(1).

[33] *Id.* § 7545(f)(4).

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EPA should correct its interpretation and recognize that the sub-sim law does not limit the concentration of ethanol in gasoline. This would remove an unnecessary regulatory barrier to the penetration of higher ethanol blends, and it would preserve EPA's authority to promulgate any appropriate fuel controls under section 211(c).

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Appendix C

Reforming EPA's Limit on Ethanol's One-Pound RVP Waiver

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Re: EPA's Arbitrary RVP Regulation Limits the Viability of Midlevel Ethanol Blends

Although E15 was granted a waiver under EPA's interpretation of the sub-sim law,[1] President Obama's EPA arbitrarily limited the times of year in which it may be used, artificially suppressing the market for E15. The result is that most drivers today have no access to E15, even though, for several years, E15 has been approved for use in Model Year 2001 and newer vehicles.[2]

To control fuel volatility, the Clean Air Act prohibits the sale of "gasoline with a Reid Vapor Pressure of 9 pounds per square inch (psi)."[3] But recognizing that this standard would impose a burden on gasoline containing 10% ethanol or more, Congress allowed a 1 psi waiver "[f]or fuel blends containing gasoline and 10 percent denatured anhydrous ethanol."[4]

The Obama EPA interpreted that waiver provision to exclude blends with more than 10% ethanol, insisting that "a 1 psi RVP waiver was granted by Congress in 1990 to gasoline-ethanol blends of a least 9 volume percent *and no greater than* 10 volume percent ethanol."[5] But Congress did not limit the waiver to E10 fuels. Congress granted the 1 psi RVP waiver to "fuel blends containing gasoline and 10 percent denatured anhydrous ethanol."[6] And E15 fuel blends contain gasoline and 10 percent denatured anhydrous ethanol.

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[1] Partial Grant of Clean Air Act Waiver Application Submitted by Growth Energy to Increase the Allowable Ethanol Content of Gasoline to 15 Percent, 76 Fed. Reg. 4662 (Jan. 26, 2011) (hereinafter E15 Partial Waiver).

[2] *Id.* at 4682.

[3] 42 U.S.C. § 7545(h)(1) (emphasis added). Reid Vapor Pressure, or RVP, "is a standard measure of fuel volatility at 100°F." *Renewables Enhancement and Growth Support Rule*, 81 Fed. Reg. 80828, 80851 (Nov. 16, 2016) (hereinafter REGS Rule). "Volatility is a measure of the propensity of a liquid to evaporate." *Id.*

[4] 42 U.S.C. § 7545(h)(4).

[5] REGS Rule, 81 Fed. Reg. at 80851 n.95 (emphasis added); E15 Partial Waiver, 76 Fed. Reg. at 4675. EPA currently restricts the 1 psi waiver exemption to fuels with an ethanol content of "at least 9% and no more than 10% (by volume) of the gasoline." 40 C.F.R. § 80.27(d)(2). EPA did not limit the 1 psi waiver to E10 until 2002, more than a decade after the statute was enacted. *See Regulation of Fuel and Fuel Additives: Reformulated Gasoline Transition*, 67 Fed. Reg. 8729, 8736 (Feb. 26, 2002).

[6] 42 U.S.C. § 7545(h)(4).

The Obama EPA's needlessly restrictive interpretation of the waiver provision is "unmoored from the purposes and concerns" of the Clean Air Act.[7] As shown in Figure 1 and acknowledged by EPA, "the addition of ethanol to gasoline" above 10% ethanol "decreases blend volatility."[8] By restricting the 1 psi waiver to gasoline with no more than 10% ethanol, EPA's interpretation discourages the sale of a fuel with a lower volatility, undermining the objectives the RVP control program and increasing pollution.[9]

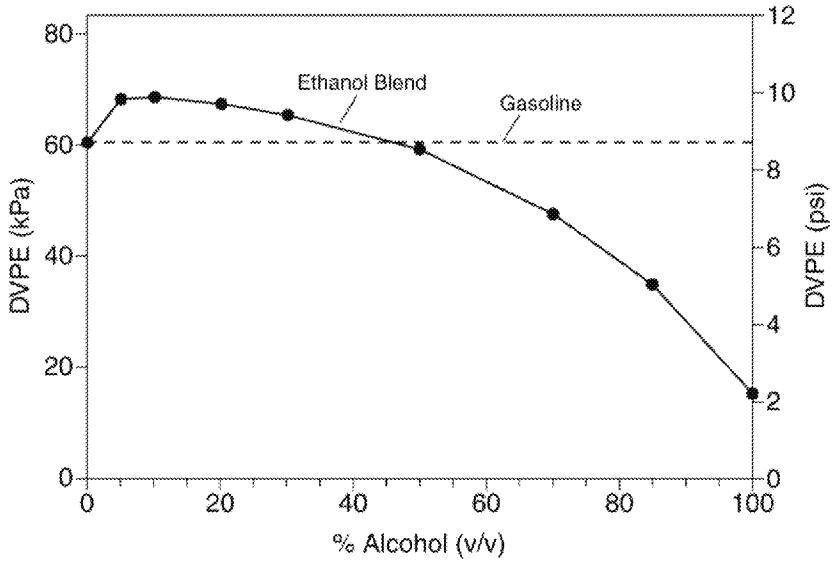

Figure 1. Source: Memorandum from Robert L. McCormick, NREL, to Kristy Moore, Renewable Fuels Association (Mar. 26, 2012), http://bit.ly/2oGf3QH.

EPA's needless interpretation also has serious deleterious consequences for small business owners. Every summer (the period of greatest gasoline demand) nearly a thousand retailers must stop selling E15 due to EPA's interpretation.[10] Small business owners have repeatedly testified before EPA about the real world burdens imposed by this interpretation. As the owner of convenience store in Nevada, Iowa, recently explained:

> "The only problem I have with the E15 comes every June 1st. On that day, I need to restrict the sales of E15 to flex fuel vehicles only. And on that day, I begin trying to explain to my customers the complex regulations that make the fuel that they buy one day off limits the next day. They are frustrated and I am frustrated. And let me tell you, when summer driving season starts, my E15 sales drop like a rock."[11]

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[7] *Judulang v. Holder*, 565 U.S. 42, 64 (2011).

[8] REGS Rule, 81 Fed. Reg. at 80851.

[9] Congress enacted the waiver to ensure the continued "beneficial environmental, economic, agricultural, energy security, and foreign policy implications" of "ethanol blending." S. Rep. No. 100-231, at 147-50 (1987), 1990 CAA Leg. Hist. 9436, 9585-89.

[10] EPA, Transcript of Public Hearing, Renewables Enhancement and Growth Support Rule at 25:7–9 (Dec. 6, 2016).

[11] *Id.* at 28:15–22, 29:16.

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Instead of acting on the pleas of small business owners, EPA officials in the Obama Administration repeatedly stated that this is "a difficult thing for us to sort through and work through."[12] But an interpretation that is not required by statute, produces no discernible environmental benefit, and harms small business owners should not be that difficult to sort out.

EPA should revoke its interpretation of the 1 psi RVP waiver provision and affirm that the statutory waiver extends to all gasoline containing *at least* 10% ethanol.

[12] *Id.* at 32:2–3.

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Appendix D

Reforming EPA's Erroneous Fuel Economy Calculation

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Re: EPA Should Correct Its Erroneous Fuel Economy Formula to Comply with the Law and Reduce Regulatory Burdens

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EPA has admitted that part of its fuel economy formula is erroneous and that it unfairly penalizes gasoline-ethanol blends, contrary to statutory requirements. This is an important consideration for automakers that face increasingly stringent fuel economy standards.

Under the Corporate Average Fuel Economy (CAFE) program, EPA calculates vehicle fuel economy in two steps.[1] EPA first measures the amount of carbon in the test fuel and in the exhaust emissions.[2] Then, using a complex fuel economy equation, EPA derives the fuel economy value.[3]

The current fuel economy equation includes adjustments meant to control for changes in the test fuel that affect fuel economy. These adjustments implement EPA's statutory obligation to make fuel economy testing on today's fuel comparable to fuel economy testing in 1975 by adjusting for changes in the test fuel that affect fuel economy.[4] This statutory requirement is intended to prevent EPA from changing the stringency of the CAFE standards through surreptitious changes in the test fuel, thereby ensuring that substantive changes in the CAFE standards happen in an accountable and transparent way.[5] EPA's current fuel economy equation fails to accurately adjust for changes in the test fuel, as required by law.

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[1] Aron Butler et al., Analysis of the Effects of Changing Fuel Properties on the EPA Fuel Economy Equation and R-Factor, at 1, Memorandum to the Tier 3 Docket, EPA-HQ-OAR-2011-0135 (Feb. 28, 2013).

[2] 40 C.F.R. § 600.113-12(f)(1).

[3] *Id.* § 600.113-12(h)(1) $((5174 \times 10^4 \times CWF \times SG)/[((CWF \times HC) + (0.429 \times CO) + (0.273 \times CO_2)) \times ((0.6 \times SG \times NHV) + 5471)])$; *see also id.* Pt. 600, App. II (sample fuel economy calculations).

[4] 26 U.S.C. § 4064(c) ("Fuel economy . . . shall be measured in accordance with testing and calculation procedures . . . utilized by the EPA Administrator for model year 1975 . . . or procedures which yield comparable results."); 49 U.S.C. § 32904(c) ("[T]he Administrator shall use the same procedures for passenger automobiles the Administrator used for model year 1975 . . . or procedures that give comparable results."); *see also General Motors Corp. v. Costle*, Nos. 80–3271, 80–3272, & 80–3655 (6th Cir. 1982) (Mem.) (requiring EPA to initiate a rulemaking that would establish an "adjustment factor" reconciling current test procedures with previous ones).

[5] *Ctr. for Auto Safety v. Thomas*, 847 F.2d 843, 846 (D.C. Cir.) (en banc) (Wald, C.J., concurring), *reh'g granted and opinion vacated on other grounds*, 856 F.2d 1557 (D.C. Cir. 1988) (per curiam) ("By inserting the comparability requirement, Congress meant to insure that auto manufacturers be credited only with real fuel economy gains, not illusory gains generated by changes in test procedures.").

The current fuel economy equation includes an adjustment to account for changes in the test fuel's energy content.[6] Such an adjustment is necessary because energy content affects fuel economy: In general, a fuel with a higher energy content increases volumetric fuel economy, whereas a fuel with a lower energy content reduces volumetric fuel economy.[7] Thus, unless the equation accurately adjusts for changes in the energy content of the test fuel, fuel economy calculations for test fuels with a lower energy content (like the new E10 gasoline certification fuel) would reflect illusory losses in fuel economy.

EPA's current fuel economy equation creates such an illusion. The source of this error is a sensitivity measure known as the R-factor. The R-factor is a measure of "how vehicles respond to changes in the energy content of the fuel."[8] The current R-factor of 0.6, for example, implies that a 10% change in the test fuel's energy content causes only a 6% change in vehicle fuel economy.[9]

The current R-factor is based on outdated vehicle data from the 1980s.[10] Many studies since then have shown that a higher R-factor is required to accurately measure changes in fuel economy.[11] EPA itself has acknowledged that the current R-factor is wrong and suggested a corrected value might lie "between 0.8 and 0.9."[12] The auto industry has asked EPA to adopt an R-factor of 1.0.[13]

EPA has repeatedly promised to fix the R-factor, but it has never done so. In 2012, EPA assured automakers that it would fix the R-factor "in a timely manner" when it changed the test fuel.[14] In 2014, EPA updated its test fuel to reflect in-use gasoline with 10 percent

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[6] Proposed Tier 3 Rule, 78 Fed. Reg. at 29913 ("[T]he existing fuel economy equation for gasoline . . .contains an adjustment for the energy content of the test fuel to calculate fuel economy equivalent to what would have been determined using the 1975 baseline test fuel.").

[7] *See id.* ("Because ethanol has a lower energy content than gasoline, i.e., fewer British thermal units (Btus) or joules per gallon, and fuel economy is defined in terms of miles per gallon of fuel, it is almost certain that the same vehicle tested on a test fuel with 15 percent ethanol content will yield a lower fuel economy value relative to the value if it were tested on the current test fuel with zero ethanol content.").

[8] Tier 3 Rule, 79 Fed. Reg. at 23531.

[9] *Id.* (stating that the R-factor's "value is presently set at 0.6"); Proposed Tier 3 Rule, 78 Fed. Reg. at 29913 (stating that the R-factor "account[s] for the fact that the change in fuel economy is not directly proportional to the change in energy content of the test fuel.").

[10] Butler et al., *supra* note 1, at 3 (citing 1985 studies).

[11] *Id.* at 3.

[12] *Id.* at 4–5.

[13] Tier 3 Rule, 79 Fed. Reg. at 23531 ("[T]he manufacturers commented that . . . EPA should finalize an appropriate test procedure adjustment in the Tier 3 rulemaking, including adoption of an 'R' factor of 1.0.").

[14] 2012 CAFE/GHG Rule, 77 Fed. Reg. at 62777–78 ("If the certification test fuel is changed to include ethanol through a future rulemaking, EPA would be required under EPCA to address the need for a test procedure adjustment to preserve the level of stringency of the CAFE standards. EPA is committed to doing so in

ethanol,[15] but it refused to change the R-factor.[16] Instead, EPA kicked the can down the road, requiring automakers to use the outdated test fuel for fuel economy testing until at least 2020.[17]

EPA should finalize an R-factor of 1. This would allow automakers to use the new test fuel for CAFE compliance purposes without being unfairly penalized for using a test fuel with a lower energy content.[18]

More fundamentally, the current fuel economy formula fails to account for the reduction in petroleum consumption that is achieved by the ethanol portion of gasoline. Under the Energy Independence and Security Act of 2007 (EISA), EPA has authority to promote energy independence by "decid[ing] on the quantity of other fuel that is equivalent to one gallon of gasoline."[19]

EPA has used this discretion to credit alternative fuels with the potential to reduce petroleum consumption.[20] EPA currently applies a "petroleum equivalency factor" to adjust the fuel economy of alternative fuel vehicles, including electric and flex-fuel vehicles.[21] For flex-fuel vehicles, EPA applies a petroleum equivalency factor of 0.15 (a rough measure of the amount of gasoline present in E85).[22]

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a timely manner to ensure that any change in certification fuel will not affect the stringency of future GHG emission standards.").

[15] 40 C.F.R. § 86.113-15; 40 C.F.R. § 1065.710.

[16] Tier 3 Rule, 79 Fed. Reg. at 23531 ("While there has been some data evaluated to assess the impact of changing the emission test fuel on the 'R' factor, EPA did not propose a value in the NPRM and specifically stated that we would continue to investigate this issue and if necessary address it as part of a future action, as opposed to changing it in the Tier 3 final rule."); *id.* at 23532 (stating that current studies "will provide data need to assess the 'R' value" and stating that "EPA expects to have the needed data in early to mid 2015 and will then be in a position to conduct a thorough assessment of the impacts of different emission test fuels on Tier 3/LEV III vehicles and develop any appropriate adjustments and changes, in consultation and coordination with NHTSA.").

[17] 40 C.F.R. § 600.117(a).

[18] The error of the current R-factor and the necessary correction to the fuel economy equation is explained in detail in comments filed by Boyden Gray & Associates. Energy Future Coalition & Urban Air Initiative, Comments on Proposed Tier 3 Rule, EPA-HQ-OAR-2011-0135-4353 (July 1, 2013), at 41-43 & Appendix I, *available at* http://boydengrayassociates.com/comments-of-the-energy-future-coalition-and-urban-air-initiative-on-proposed-tier-3-motor-vehicle-emission-and-fuel-standards-july-1-2013/.

[19] 49 U.S.C. § 32904(c).

[20] Response to Comments on the 2012 CAFE Rule, at 6-164.

[21] 10 C.F.R. § 474.3 (electric vehicles); 40 C.F.R. § 600.510-12(v) (alcohol duel-fueled vehicles).

[22] 49 U.S.C. § 32905(a)–(b).

EPA-HQ-2018-002296

Under this authority, EPA should determine that 1.11 gallons of E10 "is equivalent to one gallon of gasoline" (because E10 actually contains 90% gasoline).[23] EPA could also catalyze the development of vehicles dedicated to operate on high-octane, midlevel ethanol blends by extending a comparable petroleum equivalency factor for vehicles designed to operate on such blends. For example, if in the future manufacturers can certify vehicles on an alternative certification fuel containing 25% ethanol, EPA could decide that 1.33 gallons of E25 "is equivalent to one gallon of gasoline" (because E25 contains only 75% gasoline).[24] This would be consistent with EISA and with the Administration's goal of promoting energy independence and reducing regulatory burdens.[25]

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[23] To illustrate, a vehicle that receives a fuel economy rating of 25 mpg on the E10 test fuel would receive a fuel economy rating of 27.8 mpg after the petroleum equivalency factor is taken into account (25/0.90 = 27.8).

[24] To illustrate, a dedicated vehicle that receives a fuel economy rating of 25 mpg on the E25 test fuel would receive a fuel economy rating of 33.3 mpg after the petroleum equivalency factor is taken into account (25/0.75 = 33.3).

[25] Exec. Order No. 13783, 82 Fed. Reg. 16093 (Mar. 28, 2017) (energy independence); Exec. Order No. 13,771 82 Fed. Reg. 9,339 (Jan. 30, 2017) (regulatory burdens).

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Appendix E

Reforming EPA's MOVES2014a Emissions Model

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May 15, 2017

To: Samantha K. Dravis
Regulatory Reform Officer and Associate Administrator, Office of Policy,
Environmental Protection Agency

Re: EPA Should Correct the MOVES2014 Model's Anti-Ethanol Bias

The MOVES model, developed by EPA's Office of Transportation and Air Quality (OTAQ), estimates emissions for mobile sources at the national, county, and project level for criteria pollutants, greenhouse gases, and air toxics. MOVES2014 is the latest major revision of EPA's vehicular emissions model. It is profoundly biased against ethanol and it must be repealed and replaced with a corrected model.

EPA Imposed MOVES2014 on the States without Notice in Violation of the APA.

EPA imposed the MOVES2014 model on the States in a binding rule without notice and an opportunity for comment as required by the Administrative Procedure Act.[1] States were required to immediately begin using MOVES2014 in developing their State Implementation Plans (SIPs) for compliance with the National Ambient Air Quality Standards (NAAQS). Until it issued MOVES2014, EPA had promulgated all major revisions of its vehicular emissions model following notice and comment.

The States of Kansas and Nebraska challenged EPA's release of MOVES2014 in the D.C. Circuit, but they did not have standing because they were not yet in nonattainment with a NAAQS.[2] States will have standing to challenge MOVES2014 if EPA finalizes nonattainment designations under the new air quality standard for ozone.

In addition to the procedural deficiencies of EPA's promulgation of MOVES2014, the model is substantively flawed.

The MOVES2014 Model's Tailpipe Emissions Factors Are Flawed.

MOVES2014's tailpipe emissions factors are derived from the results of the "EPAct study," an ambitious but misguided analysis of the emissions effects of five fuel parameters (ethanol content, aromatics content, Reid Vapor Pressure (RVP), T50, and T90) based on 15 vehicles and 27 test fuels including so-called straight gasoline (E0) and blends of gasoline with 10%, 15%, and 20% ethanol (E10, E15, and E20).

[1] Official Release of the MOVES2014 Motor Vehicle Emissions Model for SIPs and Transportation Conformity, 79 Fed. Reg. 60343, 60344 (Oct. 7, 2014) (hereinafter Official Release of MOVES2014).

[2] *Kansas v. EPA*, 638 Fed. App'x 11 (D.C. Cir. 2016).

EPA conducted the EPAct study with the assistance of Southwest Research Institute (SwRI) and the Coordinating Research Council (CRC), a non-profit organization supported by the American Petroleum Institute,[3] and petroleum industry employees.[4] Contrary to EPA's own requirements of "objectivity" and "unbiased" information,[5] EPA did not solicit input from biofuel producers or other affected entities outside the oil industry.

EPA could have modeled ethanol's emissions effects by simply adding ethanol to commercial gasoline blendstocks ("splash blending"), or mimicking real-world refinery practices. Instead, the EPAct study's designers created novel fuels through an arbitrary "match blending" process in which they first adjusted the gasoline blendstock to hold constant selected parameters, including T50 and T90—the "distillation temperatures" at which 50% and 90% of the contents of the fuel are vaporized—even though refineries operate under no such constraints. To match the T50 and T90 of fuels with varying ethanol concentrations, high distillate aromatic and saturated hydrocarbons were added to fuels with higher ethanol content to counteract ethanol's beneficial effect of lowering T50 and T90.

But there is no good reason in science, engineering, or law to hold T50 and T90 constant when testing different levels of ethanol. Any semblance of uniformity among the test fuels is illusory, for the distillation profiles of blended fuels are not straight lines. The resulting test fuels deviated significantly from one another and from fuels available in the market—with some test fuels, for example, exceeding legal limits on driveability (a measure of cold-start and warm-up performance) and others containing unrealistically high octane ratings, thanks to the addition of costly and harmful high-distillate hydrocarbons.

The result of this "match blending" was the EPAct study's conclusion that "other factors being equal, increasing ethanol is associated with an increase in emissions."[6] This conclusion is misleading at best, because other factors are never equal in the real world.[7] There is no regulatory, mechanical, or health justification for adding high-boiling-point hydrocarbons to

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[3] In 2009, the CRC certified that it was "organized and operated exclusively for the benefit of, to perform the functions of, or to carry out the purposes" of the American Petroleum Institute. Return of Organization Exempt from Income Tax 2009, http://bit.ly/2dvu5b8. CRC's board of directors included several oil company employees. *See* CRC, Annual Report 80 (2009), *available at* http://bit.ly/2fwtjrw.

[4] Affiliated oil companies include BP, Chevron, ExxonMobil, Aramco, Marathon Petroleum, and Shell. *See* CRC, CRC Organizational Overview 5 (June 22, 2015), http://bit.ly/1T2nlfD.

[5] EPA, Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency 15 (Oct. 2002) (hereinafter Information Quality Guidelines), *available at* http://www.epa.gov/QUALITY/informationguidelines/documents/EPA_InfoQualityGuidelines.pdf.

[6] *Id.* at 7.

[7] *See* Anderson et al., *Issues with T50 and T90 as Match Criteria for Ethanol-Gasoline Blends*, 7 SAE Int'l J. Fuels & Lubr. 1027, 1034 (2014) ("[O]ther factors are not equal when ethanol is added to gasoline. Depending on the blendstock, the added ethanol reduces T50 due to near-azeotropic behavior and reduces T90 and aromatics content by dilution. Considered as a whole, these factors tend to reduce emissions with increasing ethanol.").

test fuels for the purpose of measuring ethanol's effect on tailpipe emissions.[8] And that is the only way to account for the EPAct study's results: ethanol has been shown in numerous empirical studies to *decrease* emissions.

Even when one accounts for the other four fuel parameters (aromatics, T50, T90, and RVP), it is impossible to derive accurate results from the EPAct study. The study fails to control for differences in the full range the test fuels' distillation temperatures (other than T50 and T90). Because of ethanol's non-linear effect on gasoline distillation, raising the T50 of higher ethanol blends to *match* the T50 of E0 and E10 blends results in elevated T60-80 distillation temperatures. This skewed the results of the higher ethanol fuels, because those high upper distillation temperatures impede complete combustion, producing pollution. And whenever more heat is required to vaporize fuel components, more emissions result. The EPAct study also fails to account for differences in the speciation of the test fuels' hydrocarbon content. The high-distillate hydrocarbons used to raise T50 and T90 have the greatest effect on emissions, but for purposes of its match blending methodology, the EPAct study treats all aromatics alike. EPA's neglect of these confounding variables undermines the integrity of the results.

The MOVES2014 Models' Evaporative Emissions Factors are Flawed.

MOVES2014 includes inaccurate evaporative emissions factors based on four flawed oil-funded studies. The model's "fuel adjustment" for ethanol predicts that blending any amount of ethanol into gasoline (E5 through E85) more than doubles permeation emissions[9]—a subset of evaporative emissions that contribute significantly to the total modeled emissions of VOCs. Specifically, the model predicts that ethanol raises permeation rates 113.8% in models year 2001 and newer vehicles, and 107.3% for model years 1997 to 2000.[10]

EPA developed this fuel adjustment factor for ethanol using data from four CRC studies funded by the oil industry.[11] All four studies are systematically biased against ethanol because

[8] *Id.* at 1030 ("[Blendstock] modifications should generally not be needed to control these parameters in studies evaluating the effects of ethanol content on emissions if starting with an E10 fuel or using an E10 intended [blendstock].").

[9] EPA, Evaporative Emissions from On-road Vehicles in MOVES2014, EPA-420-R-14-014, at 13 (Sept. 2014). "Permeation emissions are specific hydrocarbon compounds that escape through micro-pores in pipes, fittings, fuel tanks, and other vehicle components (typically made of plastic or rubber)." *Id.* at 15.

[10] EPA, Evaporative Emissions from On-road Vehicles in MOVES2014, EPA-420-R-14-014, at 16 (Sept. 2014).

[11] EPA, MOVES2010, Development of Evaporative Emissions Calculations for the Motor Vehicle Emissions Simulator MOVES2010, Final Report, at 10 (Sept. 2012) (citing Harold M. Haskew et al., *Fuel Permeation from Automotive Systems*, CRC Project No. E-65 (2004); Harold M. Haskew et al., *Fuel Permeation from Automotive Systems: E0, E6, E10, E20, and E85*, Final Report, CRC Project No. E-65-3 (2006); Harold M. Haskew et al., *Enhanced Evaporative Emissions Vehicles*, CRC Project No. E-77-2 (2010); Harold M. Haskew et al., *Evaporative Emissions from In-Use Vehicles: Test Fleet Expansion*, CRC Project No. E-77-2b, Final Report, EPA-420-R-10-025 (2010)).

they include ethanol test fuels with artificially elevated volumes of aromatics and other fuel components that contribute to permeation emissions. In particular, the ethanol test fuels in CRC studies E-65-3, E-77-2, and E-77-2b consistently have higher volumes of aromatics and a significantly higher BTEX content than non-ethanol fuels, contrary to market trends.[12] This introduces a significant systematic bias against ethanol in these studies, because "permeation increases exponentially with fuel aromatic content" and BTEX in particular.[13]

The four CRC studies are also biased against ethanol for the related reason that they fail to control for confounding variables. With the occasional exception of RVP, the CRC studies focus systematically on the effect of a single factor (ethanol), without adequately testing other fuel properties (or interactions of multiple properties) that are known to increase permeation emissions. For instance, highly volatile aromatics, like benzene,[14] and smaller molecular-size paraffins, like pentane, can contribute significantly to permeation.[15] Because the CRC studies focus on ethanol without controlling for other significant factors and aberrant vehicle data, the CRC studies confound the effect of ethanol content with the effects of other fuel or vehicle properties.

And, as CRC itself has reported, EPA's ethanol fuel adjustment factor is not even consistent with the studies' results. CRC itself recently concluded that MOVES2014 "significantly over-estimate[s] permeation" from model year 2004 and newer vehicles,[16] in part because the same CRC studies EPA relied on show that newer vehicles are "less sensitive to the increase in permeation due to ethanol" than EPA assumed.[17]

The MOVES2014 Model's Default Fuel Parameters Are Inconsistent with Market Fuel.

Even if the model itself were accurate, it would produce inaccurate results because of the models' mandatory inputs. States are at the mercy of MOVES2014's default fuel parameters.[18]

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[12] *See, e.g.*, Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards Final Rule: Regulatory Impact Analysis, at 3-3 (Mar. 2014).

[13] Sam R. Reddy, *Understanding Fuel Effects on Hydrocarbon Permeation through Vehicle Fuel System Maters*, SAE Technical Paper 2007-01-4089, at 1.

[14] Dan D. Koo, *Modified Permeation Coefficients for Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) Estimation through Polyethylene Pipe*, 5 Int'l J. of Emerging Tech. & Advanced Engineering 430–31 (Apr. 2014).

[15] Reddy, *supra* note 13, at 5.

[16] Sierra Research, *Review of EPA's MOVES2014 Model*, CRC Project No. E-101, at 34 (Aug. 11, 2016) (hereinafter CRC E-101). CRC found that the MOVES2014 permeation rates "omit key recent test data and significantly over-estimate permeation from Tier 2 certified vehicles (i.e., near-zero standards)," *id.* at 32; *see id.* at 34 ("Both the base [permeation] rate and the ethanol increment are less, and the net impact would be significantly reduced permeation emissions from the current fleet commencing with the model 2004 year.").

[17] *Id.* at 32.

[18] EPA's guidance allows substitution of the State's own parameters only "where precise local volumetric fuel property information is available." EPA, MOVES2014 and MOVES2014a Technical Guidance: Using

But the defaults are inconsistent with known data about the fuel actually sold throughout the country. As Department of Transportation scientists concluded, the default fuel parameters "likely do not have the same attributes" as real-world fuels.[19]

EPA Should Correct the MOVES2014 Model.

Because the EPAct study and MOVES2014 model fall short of EPA's information quality standards, the States of Kansas and Nebraska, the Energy Future Coalition, and Urban Air Initiative jointly filed a Request for Correction of Information under EPA's Information Quality Guidelines.[20] EPA has committed to respond by May 25, 2017.

EPA should withdraw the EPAct study and lock the MOVES2014 model's ethanol variable at 10% to prevent false comparisons between fuels with different levels of ethanol.

EPA should then develop a replacement model with corrected emissions factors based on an objective, accurate, and unbiased fuel effects study, following a meaningful opportunity for public comment. This could occur in conjunction with the "FACA MOVES Review Work Group" that EPA established in 2016 to evaluate MOVES2014 and provide advice to EPA as it produces a new emissions model as early as 2018.[21]

Urban Air Initiative has requested an opportunity to present the substance of its Request for Correction to the Work Group, but EPA has not yet responded to that request.

MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity 45, ¶ 4.9.1 (Nov. 2015).

[19] Roger L. Wayson et al., Evaluation of Ethanol Fuel Blends in EPA MOVES2014 Model 10 (Jan. 2016), *available at* http://bit.ly/1Q3L4u9.

[20] *See* State of Kansas et al., Request for Correction re EPAct/V2/E-89 Fuel Effects Study and Motor Vehicle Emissions Simulator Model (MOVES2014), RFC 17001 (Jan. 19, 2017), *available at* https://www.epa.gov/sites/production/files/2017-02/documents/epact_-_fuel_effects_study_rfc_17001.pdf.

[21] Although the FACA MOVES Review Work Group is a committee for purposes of the Federal Advisory Committee Act, it has not followed the requirements of that Act.

Message

From: Stephen Aaron [saaron@mercuryllc.com]
Sent: 5/18/2017 2:27:03 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: Following up

Hey Mandy,

Just wanted to check in with you and see how the Continental meeting went and if there is anything we can be doing to be helpful to talk. Any further information etc.

Let me know and we will talk soon.

Stephen

Mercury.

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Washington, DC | 20003
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Message

From: Kelly Poole [kpoole@ecos.org]
Sent: 6/14/2017 3:37:43 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
CC: Clint Woods [cwoods@csg.org]
Subject: Re: Introduction

Thanks, Clint!

Nice to meet you too, Mandy! I have not sent any previous emails, so no worries. I'm so glad to hear that the Cooperative Federalism 2.0 Report has been well received. The ECOS members put a lot of thought into it's content, and they are looking forward to continuing to work with this administration.

So, as for the ABA conference, I'm hoping to talk to you about the air update panel we have on the schedule for the ABA Section of Environment, Energy, and Resources 2017 Fall Meeting in Baltimore this October. I will send a separate email with more details.

I look forward to connecting later and hope your first day back goes well.

Best,

Kelly Poole, JD
Project Manager
Environmental Council of the States
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Washington, DC 20001
202-266-4939
kpoole@ecos.org

On Tue, Jun 13, 2017 at 6:45 PM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

Thank you, Clint.

Kelly, nice to e-meet you. Clint is the second person that I've talked to this week to speak highly of your report. I've yet to delve into it, but will soon.

I apologize if you sent an email and I didn't respond. I've been abroad for the past week so am playing catch up. I'm back in the office tomorrow so will try to connect in the afternoon.

Best,
Mandy

Sent from my iPhone

On Jun 13, 2017, at 5:12 PM, Clint Woods <cwoods@csg.org> wrote:

Mandy,

I hope all is well – I just wanted to send a quick note of introduction: Kelly Poole is a Project Manager with the Environmental Council of the States (ICYMI, their Cooperative Federalism 2.0 report this week is outstanding) who handles air issues, among other things. In addition to her work with ECOS, Kelly is working with the American Bar Association to help plan their Environment, Energy, and Resources Section fall meeting in October and was interested in talking with you about an air-related panel. I think she may be reaching out separately, but in case it's helpful she is copied here and her office # is 202-266-4939.

Thanks!

Clint Woods

Executive Director

Association of Air Pollution Control Agencies

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http://www.cleanairact.org

<image003.jpg>

Message

From: Jon Eisen [jeisen@ifdaonline.org]
Sent: 5/18/2017 9:10:02 PM
To: Gunasekara, Mandy [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=53d1a3caa8bb4ebab8a2d28ca59b6f45-Gunasekara,]
Subject: IFDA Meeting today

Mandy:
Thank you very much for taking the time to meet with us today. Your schedule is clearly pretty tough so we really appreciated the opportunity. We were very glad to hear that EPA is looking closely at the trailer regulations and considering a different path forward.

Please let us know if we can assist your efforts at the agency. Our members operate some of the largest private fleets in the country but as we mentioned, they are a bit unique in their usage. We would be happy to provide more information on this or other issues.

Jon

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