

**States of California, Connecticut, Illinois, Iowa, Maine, Maryland, New Jersey, New York,  
Oregon, Rhode Island, Vermont, and Washington, the Commonwealth of Massachusetts,  
and the City of Chicago**

December 17, 2018

*Via Electronic Transmission*

EPA Docket Center (EPA/DC)  
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U.S. Environmental Protection Agency  
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RE: Comments on Oil and Natural Gas Sector: Emission Standards for New, Reconstructed,  
and Modified Sources Reconsideration, 83 Fed. Reg. 52,056 (Oct. 15, 2018)

**Attention: Docket ID No. EPA-HQ-OAR-2017-0483**

Dear Acting Administrator Wheeler,

The States of California, Connecticut, Illinois, Iowa, Maine, Maryland, New Jersey, New York, Oregon, Rhode Island, Vermont, and Washington, the Commonwealth of Massachusetts, and the City of Chicago (“States and Cities”) respectfully submit these comments on the Environmental Protection Agency’s (“EPA”) proposed rule titled “Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Reconsideration,” 83 Fed. Reg. 52,056 (Oct. 15, 2018) (“Proposed Reconsideration Rule” or “Proposal”). As detailed in these comments, the States and Cities oppose the Proposed Reconsideration Rule and continue to support EPA’s 2016 emission standards for new, reconstructed, and modified sources in the oil and natural gas sector codified at 40 Code of Federal Regulations part 60, subpart OOOOa (“2016 Standard”).<sup>1</sup>

EPA’s Proposed Reconsideration Rule is the latest in a series of unlawful attempts by the Administration to undermine a common-sense rule that reduces emissions of harmful pollutants and recovers valuable natural gas that would otherwise be lost through fugitive emissions. EPA acknowledges that the Proposal will *increase* emissions of hazardous air pollutants, methane, and volatile organic compounds (“VOC”).<sup>2</sup> VOC emissions are a precursor to ozone formation, and exposure to ozone poses a significant threat to public health, particularly vulnerable populations including children, older adults, and those suffering from chronic lung disease and asthma.<sup>3</sup> Indeed, EPA admits that it “expects that the forgone VOC emission reductions” resulting from the Proposed Reconsideration Rule “may also degrade air quality and adversely affect health and

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<sup>1</sup> 81 Fed. Reg. 35,824 (June 3, 2016).

<sup>2</sup> 83 Fed. Reg. at 52,059.

<sup>3</sup> 81 Fed. Reg. at 35,837.

welfare effects associated with exposure to ozone, PM<sub>2.5</sub>, and [hazardous air pollutants].”<sup>4</sup> And, the federal government’s own scientists recently underscored the overwhelming evidence of the environmental, public health, economic, and national security impacts of climate change resulting from anthropogenic emissions of greenhouse gases (“GHG”), including methane.<sup>5</sup>

The Proposed Reconsideration Rule is unlawful for multiple reasons. First, EPA has not complied with the substantive requirements of section 111(b) of the Clean Air Act to revise a standard of performance. EPA fails to demonstrate that the Proposed Reconsideration Rule constitutes the “best system of emission reduction.” Nor does EPA provide factual support that the efficacy of the 2016 Standard is not adequately demonstrated or that its compliance costs are unreasonable. Notably, EPA does not rely upon, or even reference, data provided by industry to date relating to compliance with the 2016 Standard, despite the fact that EPA has that information readily accessible. Instead, EPA relies upon wholly unsupported assertions that the 2016 Standard is not as cost-effective as initially expected. Second, the Proposed Reconsideration Rule violates the Clean Air Act’s provisions governing administrative proceedings, because EPA has failed to provide any data or information to justify its significant proposed rollback of the 2016 Standard. *See* 42 U.S.C. § 7607(d)(1)(C) & (3)(A)-(C). EPA provides no factual support or evidence supporting the changes it now proposes. Indeed, in many cases EPA unlawfully attempts to evade its duty altogether, claiming only “uncertainty” and requesting that the public and industry provide the data and information EPA needs to justify the proposed changes. EPA’s action thus resembles not a proposed rule, but an advanced notice of proposed rulemaking or an information collection request, and is therefore insufficient to support amending an existing rule. Third, the Proposal fails to meet the requirements for alternative means of emissions limitations under section 111(h)(3) of the Clean Air Act.

Fourth and finally, EPA’s Proposed Reconsideration Rule is arbitrary and capricious. To begin, EPA fails to justify its abrupt change in position from 2016 as to the best system of emission reduction or to reconcile its Proposal with the underlying record. EPA also ignores and fails to analyze relevant data and relies on purportedly “new” data that was already considered by the Agency in 2016. Further, EPA’s Regulatory Impact Analysis underlying the Proposed Reconsideration Rule improperly relies upon the “interim” domestic social cost of methane, which vastly understates the benefits of reducing GHG emissions.

For these reasons, as detailed further below, our States and Cities strongly oppose the Proposed Reconsideration Rule and respectfully request that EPA withdraw it and continue to implement and enforce the 2016 Standard’s important public health and environmental protections.

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<sup>4</sup> *Id.*

<sup>5</sup> *See* U.S. Global Change Research Program, “Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II,” (D.R. Reidmiller et al. eds., 2018), available at <https://nca2018.globalchange.gov/> (the “Assessment”).

## **I. FACTUAL BACKGROUND**

### **A. GHG Emissions – Including Methane – Threaten Human Health and Welfare**

Climate change poses an existential threat to the States and Cities and their citizens. Within the borders of the States, climate change is causing a host of environmental problems: loss of land due to rising seas; more frequent and severe flooding due to increased rainfall and higher tides; reduced drinking water supplies due to less snow cover and earlier snow melt; decimation of biodiversity and overall ecosystem health; and increased heatwaves, insect-borne diseases, wildfires, and severe storms.<sup>6</sup>

In 2009, the EPA Administrator found that anthropogenic emissions of methane, along with five other GHGs, endanger human health and welfare.<sup>7</sup> Methane is 28 to 36 times more powerful than carbon dioxide in its ability to trap heat in the atmosphere over a 100-year timeframe, and up to 86 times more powerful over a 20-year timeframe.<sup>8</sup> Some of those public health impacts include increased ozone pollution with an associated increased risk of morbidity and mortality; extreme weather events (e.g., hurricanes, storms, heat waves) resulting in increased risk of death, injuries, illness, infections and disease; and rising sea levels with coastal areas at risk of damage to property, land erosion, and habitat loss.<sup>9</sup> Children, the elderly, and the poor are most vulnerable to climate-related health effects.<sup>10</sup>

Scientific assessments since the 2009 Endangerment Finding have only strengthened the case that anthropogenic GHG emissions endanger public health and welfare, and we are currently seeing new records for climate change indicators such as increased global average surface temperatures (fifteen of the last sixteen years have been the warmest on record), Arctic sea ice retreat, and increased GHG concentrations in the atmosphere.<sup>11</sup> Indeed, the Assessment, which concludes that “[g]reenhouse gas emissions from human activities are the only factors that can account for the observed warming over the last century” and emphasizes that “[t]he impacts

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<sup>6</sup> See, e.g., *Massachusetts v. EPA*, 549 U.S. 497, 522-23 (2007) (citing evidence that “rising seas have already begun to swallow Massachusetts’ coastal land”); Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496, 66,497-99, 66,525-26, 66,531-35 (Dec. 15, 2009) (concluding that greenhouse gases endanger public health and welfare); see also the Assessment.

<sup>7</sup> See “Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final Rule,” 74 Fed. Reg. 66,496 (Dec. 15, 2009).

<sup>8</sup> 81 Fed. Reg. at 35,830, 35,838-39; Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016, at 3-2 to 3-3; Intergovernmental Panel on Climate Change, Climate Change 2014: Synthesis Report, at 87 (2014), available at <https://www.ipcc.ch/report/ar5/syr/>.

<sup>9</sup> See 81 Fed. Reg. at 35,824, 35,833-34.

<sup>10</sup> *Id.* at 35,833.

<sup>11</sup> *Id.* at 35,834-36.

of climate change are already being felt in the United States and are projected to intensify in the future.”<sup>12</sup> To highlight just two of its troubling findings, the Assessment states that, “[i]mpacts from climate change on extreme weather and climate-related events, air quality, and the transmission of disease through insects and pests, food, and water increasingly threaten the health and well-being of the American people, particularly populations that are already vulnerable.”<sup>13</sup> Similarly, the Assessment concludes that “[o]ur aging and deteriorating infrastructure is further stressed by increases in heavy precipitation events, coastal flooding, wildfires, and other extreme events, as well as changes to average precipitation and temperature.”<sup>14</sup>

The States and Cities have a demonstrated, legally protected interest in protecting our residents from harmful air pollution that contributes to climate change and endangers public health and welfare. Indeed, our States and Cities have already begun to experience adverse impacts from climate change as reflected in the attached declarations.<sup>15</sup> These climate-related impacts will only get worse and their costs will mount dramatically if GHG emissions continue unabated.<sup>16</sup> While the Assessment credits emissions-reduction strategies the States and Cities have already put into action, it concludes that “[w]hile mitigation and adaptive measures have expanded substantially in the last four years, they do not yet approach the scale considered necessary to avoid substantial damages to the economy, environment, and public health over the coming decades.”<sup>17</sup> Thus, the overwhelming scientific consensus is that immediate and continual progress toward a near-zero GHG-emissions economy by mid-century is necessary to avoid truly catastrophic climate change impacts.<sup>18</sup>

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<sup>12</sup> Assessment at 2, 8-9 (2018).

<sup>13</sup> Assessment, *Summary Findings* at ch. 6.

<sup>14</sup> Assessment at ch. 10.

<sup>15</sup> See Climate Change Impacts of the States and Cities, attached hereto.

<sup>16</sup> Assessment at 26 (“With continued growth in emissions at historic rates, annual losses in some economic sectors are projected to reach hundreds of billions of dollars by the end of the century—more than the current gross domestic product (GDP) of many U.S. states.”)

<sup>17</sup> *Id.* at ch. 29.

<sup>18</sup> See Assessment at 26, 1347, 1488; see also Intergovernmental Panel on Climate Change (IPCC), 1.5°C Report, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global GHG emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development and efforts to eradicate poverty, Summary for Policymakers (“In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO<sub>2</sub> emissions decline by about 45% from 2010 levels by 2030 . . . , reaching net zero around 2050 . . . . Non-CO<sub>2</sub> emissions in pathways that limit global warming to 1.5°C show deep reductions that are similar to those in pathways limiting warming to 2°C (high confidence).”)



## **B. EPA Enacted the 2016 Standard to Protect Human Health and Welfare**

The 2016 Standard is a critical component of that progress and is expected to help to prevent and mitigate the harms that climate change poses to human health and the environment. The production, processing, and transportation of oil and natural gas constitute the largest industrial source of the potent GHG methane in the United States.<sup>19</sup> Indeed, according to EPA, these emissions “exceed the national-level emissions totals for all GHG and all anthropogenic sources for Greece, the Czech Republic, Chile, Belgium, and about 150 other countries.”<sup>20</sup> For this reason, the States and Cities have long called for the federal government to regulate methane emissions from new and existing sources in the oil and natural gas sector.

In 2014, EPA began answering that call by conducting an extensive public outreach and review process to develop standards of performance to regulate these harmful emissions. Among other steps, EPA published five technical white papers that received more than 43,000 public comment submissions and additional technical information from independent experts and various stakeholders. Many of the undersigned Attorneys General filed comments on these white papers,<sup>21</sup> and States that had previously noticed their intent to sue EPA over its failure to address oil and natural gas sector methane emissions withheld suit as EPA’s efforts took shape.<sup>22</sup> In September 2015, EPA issued a notice of proposed rulemaking, hosted three public hearings, and allowed for a 99-day comment period on the proposed rule, in which EPA received over 900,000 comments.<sup>23</sup>

On June 3, 2016, pursuant to its authority under section 111(b) of the Clean Air Act,<sup>24</sup> EPA finalized the 2016 Standard to reduce emissions of methane, VOCs, and hazardous air

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<sup>19</sup> 81 Fed. Reg. at 35,839.

<sup>20</sup> *Id.*, at 35,840.

<sup>21</sup> See Letter from Eric T. Schneiderman, et al., to Gina McCarthy, “Re: Comments on EPA Methane White Papers” (June 16, 2014) (signed by Attorneys General of Delaware, Maryland, Massachusetts, New York, Oregon, Rhode Island, and Vermont); see Letter from Eric Schneiderman, et al., to Janet McCabe, “Re: Addressing Methane Emissions from Distribution Sector” (Sept. 12, 2014) (signed by Attorneys General of Delaware, Maryland, Massachusetts, New York, Oregon, Rhode Island, and Vermont).

<sup>22</sup> See Clean Air Act Notice of Intent to Sue Letter to Lisa P. Jackson, Administrator, U.S. Environmental Protection Agency, from New York, Connecticut, Delaware, Maryland, Massachusetts, Rhode Island, and Vermont (Dec. 11, 2012).

<sup>23</sup> 81 Fed. Reg. at 35,831.

<sup>24</sup> EPA’s issuance of the 2016 Standard also triggered the agency’s duty to propose guidelines for states to develop plans to limit methane emissions from existing sources under Clean Air Act section 111(d). 42 U.S.C. § 7411(d); 40 C.F.R. § 60.21(a); see Letter from 15 Attorneys General and Chicago Corporation Counsel to Administrator Pruitt (June 29, 2017), *available at* [https://ag.ny.gov/sites/default/files/2017\\_06\\_29\\_ltr\\_oag-epa\\_clean\\_air\\_act\\_notice\\_of\\_intent\\_to\\_sue.pdf](https://ag.ny.gov/sites/default/files/2017_06_29_ltr_oag-epa_clean_air_act_notice_of_intent_to_sue.pdf). Regulation of emissions from existing sources is

pollutants from new and modified production, gathering, processing, transmission, and storage equipment in the oil and natural gas sector.<sup>25</sup> Specifically, the 2016 Standard targets the following sources of methane and VOC emissions: hydraulically fractured oil well completions, pneumatic pumps, fugitive emissions from well sites and compressor stations, and equipment leaks at natural gas processing plants.<sup>26</sup> The 2016 Standard sets a fixed schedule for monitoring leaks of twice per year for all well sites and four times per year for all compressor stations, and requires the repair of any detected leaks within thirty days.<sup>27</sup> The 2016 Standard also requires owners and operators of affected facilities to submit annual compliance reports that include data on the number of components found leaking at each well site during an inspection, the types of components found most frequently with leaks, the time expended by a surveyor to conduct an inspection, and the percentage of leaking components repaired.

According to EPA, the 2016 Standard is expected to reduce 300,000 tons of methane, 150,000 tons of VOCs, and 1,900 tons of hazardous air pollutants (as a co-benefit of reducing VOCs) in 2020.<sup>28</sup> In 2025, the rule would reduce 510,000 tons of methane, 210,000 tons of VOCs, and 3,900 tons of hazardous air pollutants.<sup>29</sup> EPA analyzed the costs and benefits of the 2016 Standard, including the revenues from recovered natural gas that would otherwise be lost through fugitive emissions, and determined that the 2016 Standard would result in a net benefit estimated at \$35 million in 2020 and \$170 million in 2025.<sup>30</sup>

### **C. The Proposed Reconsideration Rule: EPA’s Latest Effort to Undermine the 2016 Standard**

Under the current Administration, there has been a significant reversal in federal efforts to address methane emissions from the oil and natural gas sector. In March 2017—in response to a request from Attorneys General with whom he was previously allied in opposing EPA rules<sup>31</sup>— the then-EPA Administrator withdrew, without any notice or opportunity to comment, EPA’s information collection request (“ICR”) to the oil and natural gas industry requesting

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critical because existing sources comprise the vast majority of the sector’s emissions. *See* Environmental Defense Fund, *Rising Risk: Improving Methane Disclosure in the Oil and Gas Industry* (Jan.2016), *available at* [https://www.edf.org/sites/default/files/content/rising\\_risk\\_full\\_report.pdf](https://www.edf.org/sites/default/files/content/rising_risk_full_report.pdf) (stating that “roughly 90% of emissions in 2018 are forecast to come from existing sources.”).

<sup>25</sup> 81 Fed. Reg. 35,824 (June 3, 2016).

<sup>26</sup> *Id.*, at 35,825.

<sup>27</sup> *Id.*, at 35,826, 35,846.

<sup>28</sup> *Id.*, at 35,827.

<sup>29</sup> *Id.*

<sup>30</sup> *Id.*, at 35,827-28.

<sup>31</sup> *See* Letter from Ken Paxton, Texas AG, et al., to Scott Pruitt, U.S. EPA Administrator (Mar. 1, 2017), *available at* [https://www.epa.gov/sites/production/files/2017-03/documents/letter\\_from\\_attorneys\\_general\\_and\\_governors.pdf](https://www.epa.gov/sites/production/files/2017-03/documents/letter_from_attorneys_general_and_governors.pdf)

information on methane emissions from existing sources.<sup>32</sup> The ICR would have collected information including major equipment and component counts at low production wells and the effectiveness of any ongoing leak detection and repair program to which the reporting facility was subject<sup>33</sup> (both topics in connection with which EPA now claims to lack sufficient information, causing it to doubt the cost-effectiveness of the 2016 Standard).<sup>34</sup> Many of our States and Cities objected to EPA's unexplained withdrawal of the ICR.<sup>35</sup>

EPA followed the ICR withdrawal with an announcement that it had convened a proceeding for reconsideration of the 2016 Standard.<sup>36</sup> EPA then issued its first, administrative, three-month stay of the rule, which was immediately challenged and summarily vacated by the D.C. Circuit as unlawful. *Clean Air Council v. Pruitt*, 862 F.3d 1, 14 (D.C. Cir. 2017). EPA again attempted to halt implementation of the 2016 Standard by proposing a twenty-seven month stay, purportedly supported by “notices of data availability” that failed to make any data available to the public. The States and Cities submitted comments opposing EPA's proposed stay and notices, asserting, in relevant part, that EPA's proposed action exceeded its statutory authority under the Clean Air Act, and was arbitrary and capricious because of EPA's failure to justify its change of position.<sup>37</sup> EPA never finalized its proposed stay and its actions reflect a systematic attempt to dismantle the 2016 Standard and other efforts to limit methane emissions from the oil and natural gas sector.

The Proposed Reconsideration Rule—the latest salvo in EPA's dogged attempt to unravel sensible, cost-effective methane-reduction measures—would weaken the 2016 Standard in a number of significant ways. Most notably, it would reduce the required frequency of monitoring for fugitive emissions and repair of leaks detected by such monitoring: (1) from twice per year at all well sites, to once per year at non-low production well sites and once every two years at low

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<sup>32</sup> *Notice Regarding Withdrawal of Obligation to Submit Information; Notice*, 82 Fed. Reg. 12,817 (Mar. 7, 2017).

<sup>33</sup> See Information Collection Request Supporting Statement at 95, EPA ICR No. 2548.01 (Nov. 9, 2016), *available at* <https://www.epa.gov/sites/production/files/2016-11/documents/oil-natural-gas-icr-supporting-statement-epa-icr-2548-01.pdf>; *see also* EPA Fact Sheet at 1, *available at* <https://www.epa.gov/sites/production/files/2016-11/documents/oil-gas-final-icr-factsheet.pdf>.

<sup>34</sup> 83 Fed. Reg. at 52,062, 52,066, 52,069.

<sup>35</sup> See Letter re: Withdrawal of Final Methane Information Collection Request to Scott Pruitt, Administrator, from Massachusetts, California, District of Columbia, Illinois, Maine, Maryland, New York, Rhode Island, and Vermont (Apr. 3, 2017).

<sup>36</sup> See Letter re: Convening a Proceeding for Reconsideration of Final Rule, “Oil and Natural Gas Sector: Emission Standards for New, Reconstructed and Modified Sources,” published June 3, 2016, to Counsel for Entities that Petitioned for reconsideration, *available at* (Apr. 18, 2017), *available at* [https://www.epa.gov/sites/production/files/2017-04/documents/oil\\_and\\_gas\\_fugitive\\_emissions\\_monitoring\\_reconsideration\\_4\\_18\\_2017.pdf](https://www.epa.gov/sites/production/files/2017-04/documents/oil_and_gas_fugitive_emissions_monitoring_reconsideration_4_18_2017.pdf).

<sup>37</sup> The States and Cities comments regarding EPA's proposed stay and “notices of data availability” are attached hereto.

production well sites;<sup>38</sup> and (2) from four times per year at all compressor stations, to twice per year at compressor stations not located on the Alaskan North Slope and once per year at compressor stations located on the Alaskan North Slope.<sup>39</sup> The Proposed Reconsideration Rule would also exempt from monitoring and repair requirements wellhead-only well sites from which all major production and processing equipment has been removed.<sup>40</sup> EPA's reckless Proposal will increase emissions of methane by 380,000 tons between 2019 and 2025 as compared to the 2016 Standard.

In addition to increasing methane emissions, EPA's Proposed Reconsideration Rule would increase emissions of VOCs and hazardous air pollutants. The public health impacts of VOCs are also well documented.<sup>41</sup> VOCs are a main precursor to the formation of ozone, which can cause harmful respiratory symptoms such as airway inflammation and asthma.<sup>42</sup> Long-term exposure to VOCs can also result in premature death from lung and heart disease.<sup>43</sup> Children and people with respiratory disease are most at risk.<sup>44</sup> EPA has further found that harmful hazardous air pollutants associated with natural gas, like formaldehyde and benzene, are known to cause cancer and other adverse health effects.<sup>45</sup> EPA's Proposed Reconsideration Rule would upend the 2016 Standard's important safeguards against these harms and will adversely impact public health and the environment. Between 2019 and 2025 alone, 100,000 tons of VOCs and 3,800 tons of hazardous air pollutants will be emitted that would have been controlled and prevented under the 2016 Standard.<sup>46</sup>

If EPA finalizes the Proposed Reconsideration Rule, residents of the States and Cities will be exposed to and harmed by the impacts from methane, VOCs, and hazardous air pollutant emissions that would otherwise have been avoided if the 2016 Standard's requirements remained in force. Thus, the Proposed Reconsideration Rule threatens to harm the public that EPA is obligated to protect and, as detailed below, fails to pass legal muster.

## **II. THE PROPOSED RECONSIDERATION RULE EXCEEDS EPA'S AUTHORITY UNDER THE CLEAN AIR ACT**

The Proposed Reconsideration Rule would significantly increase emissions of harmful methane, VOCs, and hazardous air pollutants compared to the 2016 Standard based upon nothing more than industry's unsupported and unverified "concerns" regarding compliance with the 2016

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<sup>38</sup> 83 Fed. Reg. at 52,062.

<sup>39</sup> *Id.* at 52,069-52,072

<sup>40</sup> 83 Fed. Reg. at 52,066.

<sup>41</sup> *Id.* at 35,837.

<sup>42</sup> *Id.*

<sup>43</sup> *Id.*

<sup>44</sup> *Id.*

<sup>45</sup> *Id.* at 35,824, 35,837 ("[B]enzene . . . can lead to a variety of health concerns such as cancer and noncancer illnesses (e.g., respiratory, neurological).").

<sup>46</sup> *See* 83 Fed. Reg. at 52,059.

Standard. EPA's Proposed Reconsideration Rule violates sections 111(b), 307(d), and 111(h) of the Clean Air Act. The Agency has failed to cite any data or evidence to support its broad claims regarding the benefits of the Proposed Reconsideration Rule. And, EPA has failed to show that its Proposal constitutes the best system of emission reduction. In fact, EPA has proposed a rule that, if finalized, would substantially relax the monitoring and recordkeeping requirements of the 2016 Standard and would significantly increase emissions of GHGs, VOCs, and hazardous air pollutants. Finally, the Proposal fails to meet the requirements of section 111(h) of the Clean Air Act for alternative means of emissions limitations. The Proposal thus exceeds EPA's authority under the Clean Air Act.

**A. The Proposed Reconsideration Rule Violates Section 111(b) of the Clean Air Act**

Section 111 of the Clean Air Act contains the New Source Performance Standards program, which requires EPA to regulate all categories of stationary (non-vehicle) sources that cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare. 42 U.S.C. § 7411(b)(1)(A) ("Section 111(b)"). Section 111(b) requires EPA to establish standards of performance governing the emission of air pollutants from new sources, and to review and, if appropriate, revise, those standards at least every eight years. *Id.* § 7411(b)(1)(B). "Standard of performance" means "a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated." *Id.* § 7411(a)(1). EPA sets performance standards for new sources by reference to emissions levels that can be achieved using the most up-to-date control technology or method of limiting emissions that is both feasible and cost-effective for each type of pollutant, but it does not mandate any specific equipment, technology, or method. *Id.* § 7411(a)(1) & (b)(5). Under the Clean Air Act, an existing source that is modified or reconstructed after regulations are proposed for new sources is also considered a new source. 42 U.S.C. § 7411(a)(2); 40 C.F.R. § 60.15.

For EPA's proposed revisions to the 2016 Standard to be permissible under the Clean Air Act, EPA must likewise comply with the substantive requirements of Section 111(b). *See* 42 U.S.C. § 7411(b)(1)(B) (requiring EPA to "revise such standards following the procedures required by this subsection for promulgation of such standards"). Thus, EPA must demonstrate that the revised standard "reflects the degree of emission limitation achievable through the application of the best system of emission reduction" ("BSER"). *Id.* § 7411(a).<sup>47</sup> EPA may not

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<sup>47</sup> EPA seeks to revise standards of performance in the 2016 Standard promulgated under section 111(b), as well as "work practice" standards promulgated under section 111(h). "Work practice" standards must reflect "the best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, and any nonair quality health and environmental impact and energy requirements) the Administrator determines has

ignore Section 111(b)'s technology-forcing mandate to consider the emission limitations and percent reductions achieved in practice. *Id.* § 7411(b)(1)(B); *see also Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 391 (D.C. Cir. 1973) (recognizing that Section 111(b) "looks toward what may fairly be projected for the regulated future, rather than the state of the art at present").

Here, EPA has not complied with the substantive factors required by Section 111(b). In developing the 2016 Standard, EPA compiled a robust administrative record demonstrating that the 2016 Standard meets the BSER. EPA supported its determination with an appropriate balance of factors under Section 111(b), including "the amount of the pollutant that is being emitted from the source category, the availability of technically feasible control options, and the costs of those control options."<sup>48</sup> In contrast, the Proposed Reconsideration Rule does not comply with Section 111(b)'s requirements because the agency has failed to demonstrate that its revised standards of performance reflect the BSER. EPA does not point to any facts or data that support decreasing the monitoring frequency for well sites, compressor stations, and low-production wells, or any of its proposed amendments to the 2016 Standard. Indeed, EPA has "received no information that resulted in any change to EPA's BSER analysis for monitoring and reducing fugitive VOC and methane emissions at compressor stations."<sup>49</sup>

Further, EPA does not, because it cannot, assert that the efficacy of the 2016 Standard is not "adequately demonstrated." The 2016 Standard, which has been in place for over two years, is based upon technologies widely used and required. The agency does not allege (and cites no data to suggest) that either the industry as a whole or significant numbers of individual affected sources have had difficulty complying with the 2016 Standard. Indeed, the agency points to no evidence suggesting that *any* sources have been unable to meet those standards. Nowhere in the Proposal does EPA argue or even imply that the current 2016 Standard's compliance costs are exorbitant or in any way unreasonable; to the contrary, EPA admits that these costs of control for semiannual monitoring at non-low production well sites—which is the level of frequency required at such sites under the 2016 Standard —"appear to be reasonable."<sup>50</sup>

Although state and voluntary corporate programs are not a substitute for EPA's mandatory national standards, they further support that the requirements of the 2016 Standard are achievable, cost-effective, and adequately demonstrated. For example, California's regulation, approved by the California Air Resources Board in March 2017, requires quarterly monitoring and repairing of methane leaks from both onshore and offshore oil and natural gas wells, natural gas processing facilities, compressor stations, and other equipment used in the processing and

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been adequately demonstrated." 42 U.S.C. § 7411(h). Thus, both section 111(h) and section 111(b) standards of performance are referred to as BSER standards. *See* 42 U.S.C. § 7411(h)(5).

<sup>48</sup> 81 Fed. Reg. at 35,842.

<sup>49</sup> EO 12866 Interagency Comments on EPA draft proposed rule titled, "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Reconsideration," (RIN 2060-AT54).

<sup>50</sup> 83 Fed. Reg. at 52,065.

delivery of oil and natural gas.<sup>51</sup> California's regulation requires oil and natural gas operators above a certain size to implement vapor recovery systems that will capture methane so that it can be reused. It seeks to curb methane emissions at oil and natural gas production facilities by up to forty-five percent over the next nine years.<sup>52</sup> Colorado similarly adopted rules in February 2014 that govern new and existing wells and natural gas compressor stations. Colorado requires leak inspections monthly, quarterly, annually, or one time, depending on facility emissions.<sup>53</sup> These regulations are expected to reduce methane and ethane emissions from Colorado's oil and natural gas sector by approximately 64,000 tons per year. Colorado strengthened those regulations in June 2018 to increase the frequency of leak detection inspections for oil and natural gas wells in ozone nonattainment areas, and to require leak detection and repair for pneumatic controllers.<sup>54</sup> California and Colorado are not alone: Pennsylvania, Texas, Utah, and Wyoming have proposed or enacted leak detection and repair standards, all of which require more frequent inspections than does EPA's Proposed Reconsideration Rule. In addition, several large oil and natural gas corporations, including Shell, BP, and Exxon Mobil, have recently committed to reducing methane emissions from their oil and natural gas operations by targeting leaks, venting, and incomplete combustion of fuel, demonstrating that such measures are a cost-effective way to reduce harmful methane emissions and save valuable fuel.<sup>55</sup>

Finally, while the Proposed Reconsideration Rule evaluates the costs and benefits of reducing inspection frequencies at well sites and compressor stations, as EPA admits "the net benefit analysis, alone, is not sufficient for determining BSER as required."<sup>56</sup> And, even if cost-effectiveness could justify weakening the 2016 Standard, which the States and Cities do not concede, EPA seemingly ignores relevant compliance data that directly speaks to the cost-effectiveness of the 2016 Standard (see Sections II.B. and III.B.). Thus, EPA's Proposed Reconsideration Rule rests entirely, without support, on the existence of "uncertainties" and "concerns" regarding the 2016 Standard. EPA cannot point to any substantial flaws in the analysis underpinning the 2016 Standard. It simply defies logic for EPA to assert that the "best system of emission reduction" is actually removal of requirements that have been in place for nearly two years resulting in significant increase in methane, VOCs, and hazardous air pollutant

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<sup>51</sup> See Cal. Code Regs., tit. 17, §§ 95665, *et al.*

<sup>52</sup> New York is also moving ahead to develop, propose and adopt, as necessary, regulations to limit emissions from existing oil and natural gas transmission facilities, such as compressor stations, not regulated by the federal New Source Rule. See New York Methane Reduction Plan (May 2017), available at [http://www.dec.ny.gov/docs/administration\\_pdf/mrpfinal.pdf](http://www.dec.ny.gov/docs/administration_pdf/mrpfinal.pdf).

<sup>53</sup> *Id.*

<sup>54</sup> 5 Colo. Code Regs. 1001-0, Section XII.L (2018).

<sup>55</sup> See Climatewire article, "Shell latest firm to make 'smart' move to reduce methane," (Sept. 18, 2018).

<sup>56</sup> EO 12866 Interagency Comments on EPA draft proposed rule titled, "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Reconsideration," (RIN 2060-AT54).

emissions. For these reasons, EPA's unsubstantiated claims do not meet the substantive requirements for revising a performance standard under Section 111(b).

**B. EPA's Proposed Reconsideration Rule Violates Section 307(d) of the Clean Air Act**

EPA's Proposal violates the Clean Air Act's procedural requirements because EPA has failed to provide the data substantiating its proposal. Under section 307(d) of the Clean Air Act, the notice of any proposed rulemaking "shall be accompanied by a statement of its basis and purpose" which "shall include a summary of (A) the factual data on which the proposed rule is based; (B) the methodology used in obtaining the data and in analyzing the data; and (C) the major legal interpretations and policy considerations underlying the proposed rule." 42 U.S.C. § 7607(d)(3) ("Section 307(d)"). Further, "[a]ll data, information, and documents referred to in this paragraph on which the proposed rule relies shall be included in the docket on the date of publication of the proposed rule." *See id.*

This information is crucial to our ability to meaningfully comment on the Proposed Reconsideration Rule. "In order to allow for useful criticism, it is especially important for the agency to identify and make available technical studies and data that it has employed in reaching the decisions to propose particular rules." *Connecticut Light & Power Co. v. Nuclear Regulatory Com.*, 673 F.2d 525, 530-531 (D.C. Cir. 1982). Courts have found that EPA's failure to make data relating to the basis for its Clean Air Act regulations publicly available made "meaningful comment on the merits of EPA's assertions impossible" and constituted reversible error. *Kennecott Corp. v. EPA*, 684 F.2d 1007 (D.C. Cir. 1982); *see also Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 392-95 (D.C. Cir. 1973) ("It is not consonant with the purpose of a rule-making proceeding to promulgate rules on the basis of inadequate data, or on data that, (in) critical degree, is known only to the agency.")

Here, it is impossible for the public to meaningfully comment on the Proposed Reconsideration Rule based on EPA's say-so, where EPA cites only its "concerns" and "uncertainties" and has not provided any data or information supporting the rule for the public to review and critique. Throughout the Proposed Reconsideration Rule, EPA repeatedly references "uncertainties" and "absences of information," and in numerous instances seeks not just public comment regarding its proposed amendments, but also data and information to support the very changes EPA has proposed.<sup>57</sup> In fact, EPA appears to be using the Proposed Reconsideration Rule improperly to *gather* data to support its preferred result, instead of following the Clean Air Act's prescribed procedure for rule revision, wherein EPA would first assemble data supporting any proposed action and make it available for public comment through a proposal. To the extent EPA gathers any supportive data in response to its flawed Proposed Reconsideration Rule, the public will not have any opportunity to comment on that data, undermining the entire purpose of notice and comment and violating the Clean Air Act's clear requirements. *See Small Refiner*, 705 F.2d at 549-50 ("EPA must *itself* provide notice of a regulatory proposal. Having failed to do so,

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<sup>57</sup> 83 Fed. Reg. at 52,065-52,081.



it cannot bootstrap notice from a comment.”); *see Costle*, 657 F.2d at 398 (public must be able to meaningfully comment on factual underpinnings of rule). In fact, the Proposed Reconsideration Rule resembles an advance notice of proposed rulemaking (ANPRM) rather than the notice of proposed rulemaking it purports to be. Given that an ANPRM cannot generally be the only support for a final rule, it would be improper as a matter of law for EPA to ultimately rely upon information provided during the public comment period on the Proposed Reconsideration Rule to make additional changes to the 2016 Standard.

Moreover, and despite Section 307(d)’s unambiguous requirements, the Proposal is devoid of any of the data and information required by that section. For example, one aspect of the 2016 Standard intended to significantly curb methane leaks from new sources in the oil and natural gas industry is the leak detection and reporting (LDAR) requirements, which require routine monitoring for and reporting of leaks and impose timeframes for repair of any identified leaks.<sup>58</sup> As discussed below, since these requirements have been in place, thousands of compliance reports have been submitted to EPA by the oil and natural gas industry. Such reports provide actual data regarding the ability of industry to comply with, and the cost-effectiveness of compliance with, the 2016 Standard so as to bolster (or undermine) EPA’s stated rationale for its reconsideration.<sup>59</sup> Yet, EPA does not reference such reports at all in its discussion of the revised LDAR requirements or any of its proposed amendments. To the extent EPA relied on the compliance reports for the Proposed Reconsideration, EPA must make them available for public review and comment.<sup>60</sup> In those few instances where EPA does cite to data or information in support of the Proposed Reconsideration Rule, it does so without sufficient detail or appropriate citations, again meaning the public cannot reasonably review and meaningfully comment upon the Proposed Reconsideration Rule. For example, EPA states that it has considered “available data,” but never explains what that “available data” is or whether it includes compliance data submitted to EPA pursuant to the 2016 Standard.<sup>61</sup> EPA cannot vaguely refer to available information, but must make clear precisely the data on which the Proposed Reconsideration Rule is based.

In order to conduct a reasoned analysis of the Proposed Reconsideration Proposal and whether amendments of the 2016 Standard are even warranted, EPA must provide to the public all relevant data regarding the 2016 Standard and a failure to make this information fully available for public comment renders it impossible for interested parties to provide meaningful

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<sup>58</sup> *See* 81 Fed. Reg. at 35,846-47.

<sup>59</sup> *See id.*

<sup>60</sup> As stated below (*infra* Section III.B.), the States and Cities submitted a request under the Freedom of Information Act over one year ago seeking the compliance reports, but EPA has only produced a portion of this data. EPA should not proceed with the Proposed Reconsideration Rule while at the same time refusing to publicly release all the data it possesses concerning industry compliance with the 2016 Standard.

<sup>61</sup> *See, e.g.*, 83 Fed. Reg. at 52,062 (“EPA has reviewed the data provided by the petitioner, *as well as other data that have become available* since promulgation of the 2016 NSPS OOOOa . . .” (emphasis added)), 52,068 (citing “other available information”).

comments. *See Conn. Light & Power Co. v. Nuclear Regulatory Comm’n*, 673 F.2d 525, 530-31 (D.C. Cir. 1981) (“An agency commits serious procedural error when it fails to reveal portions of the technical basis for a proposed rule in time to allow for meaningful commentary.”) For these reasons, on November 19, 2018, many of the undersigned sent a letter to EPA requesting that EPA make public all compliance data submitted to EPA pursuant to the 2016 Standard, including all second annual compliance reports that were due by October 31, 2018. EPA failed to respond, so the States and Cities hereby respectfully reiterate their request that: (1) EPA make all requested information available immediately; and (2) EPA extend the comment period of the Proposed Reconsideration Rule for an additional 60 days after such disclosure to afford the States and Cities and the public a reasonable opportunity to review and comment.

**C. The Proposed Reconsideration Rule Does Not Meet The Requirements of Section 111(h) of the Clean Air Act**

Additionally, the Proposal fails to meet the requirements for alternative means of emissions limitations (“AMEL”) under section 111(h)(3) of the Clean Air Act. That section provides:

If after notice and opportunity for public hearing, any person establishes to the satisfaction of the Administrator that an alternative means of emission limitation will achieve a reduction in emissions of any air pollutant at least equivalent to the reduction in emissions of such air pollutant achieved under the requirements of paragraph (1), the Administrator shall permit the use of such alternative by the source for purposes of compliance with this section with respect to such pollutant.

42 U.S.C. § 7411(h)(3). In the 2016 Standard, EPA provides for AMEL and states that, “owners and operators may . . . submit an application requesting that EPA approve certain state requirement[s] as ‘alternative means of emission limitations’ under the [2016 Standard] for their affected facilities.”<sup>62</sup> The AMEL application must demonstrate that the emission reductions achieved under the state program would be “at least equivalent to the emission reductions achieved under the [2016 Standard] for a given affected facility.”<sup>63</sup>

In the Proposed Reconsideration Rule, EPA seeks to bypass this tailored process and instead incorporate various state programs into the AMEL process ab initio. Specifically, EPA proposes AMEL fugitive emission standards for California, Colorado, Ohio, and Pennsylvania for both well sites and compressor stations, and Texas and Utah for well sites only.<sup>64</sup> EPA has “not determined whether Pennsylvania’s Exemption No. 38 for well sites should be included in the alternative standards.”<sup>65</sup> The States and Cities incorporate by reference the comments of the California Air Resources Board submitted on this issue, and emphasize the following: (1) EPA

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<sup>62</sup> 81 Fed. Reg. at 35,837.

<sup>63</sup> *Id.*

<sup>64</sup> 83 Fed. Reg. at 52,081.

<sup>65</sup> *Id.*

must retain the 2016 Standard as the baseline for making AMEL determinations (*see supra* Section II.A. and *infra* Section III.A. and B.); and (2) EPA must make a quantitative determination that a specific AMEL application submitted by “any person” will achieve a reduction in emissions at least equivalent to reductions under the 2016 Standard.

### **III. EPA’S PROPOSED RECONSIDERATION RULE IS ARBITRARY AND CAPRICIOUS AND CONSTITUTES AN ABUSE OF EPA’S DISCRETION**

EPA’s Proposed Reconsideration Rule is arbitrary and capricious and contrary to relevant law because EPA fails either to justify reversal of its position as set forth in the 2016 Standard, or to reconcile its decision to revise the 2016 Standard with the determination in its rulemaking record that the 2016 Standard is necessary to address harm to public health and welfare. Therefore, the Proposed Reconsideration Rule constitutes an abuse of EPA’s discretion.

#### **A. EPA Fails to Justify its Change of Position or Reconcile the Proposed Reconsideration Rule with Its Own Rulemaking Record**

As the Supreme Court has explained, “[o]ne of the basic procedural requirements of administrative rulemaking is that an agency must give adequate reasons for its decisions.” *Encino Motorcars LLC v. Navarro*, 136 S. Ct. 2117, 2125 (2016). The requirement is satisfied “when the agency’s explanation is clear enough that its ‘path may reasonably be discerned.’” *Id.* (citing *Bowman Transp., Inc. v. Arkansas-Best Freight System, Inc.*, 419 U.S. 281, 286 (1974)); *see also Motor Vehicle Mfrs. Ass’n of the United States v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (an agency must “examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.”). “But where the agency has failed to provide even that minimal level of analysis, its action is arbitrary and capricious and so cannot carry the force of law.” *Encino*, 136 S. Ct. at 2125.

EPA’s Proposed Reconsideration Rule represents a reversal of EPA’s “former views as to the proper course.” *See Public Citizen v. Steed*, 733 F.2d 93, 98 (D.C. Cir. 1984). Because the Proposed Reconsideration Rule represents a change in EPA’s position, EPA must: display “awareness that it is changing position;” show that “the new policy is permissible under the statute;” “believe[]” the new policy is better; and provide “good reasons” for the new policy. *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009); *see also Lone Mountain Processing, Inc. v. Secretary of Labor*, 709 F.3d 1161, 1164 (D.C. Cir. 2013) (“[A]n agency changing its course must supply a reasoned analysis indicating that prior policies and standards are being deliberately changed, not casually ignored. Failing to supply such analysis renders the agency’s action arbitrary and capricious.”). And if the Proposed Reconsideration Rule rests upon factual findings that contradict a prior policy, then the agency must include “a reasoned explanation . . . for disregarding facts and circumstances that underlay or were engendered by the prior policy.” *Fox*, 556 U.S. at 515-16.

Here, EPA has not met any of these requirements. First, as discussed above, EPA has not demonstrated and cannot demonstrate that the Proposed Reconsideration Rule is permissible under section 111(b) of the Clean Air Act. *See supra* Section III.A. Additionally, EPA has not provided “good reasons” for the Proposed Reconsideration Rule. *Fox*, 556 U.S. at 515. Indeed, EPA has not offered any explanation for rejecting and ignoring its 2016 findings, let alone “good” ones. In support of the 2016 Standard, EPA developed an extensive factual record. In addition to the mandatory notice and comment procedure, EPA issued white papers for peer review and public input to facilitate a more complete understanding of data on emissions and controls for oil and natural gas facilities. Through this enhanced process, which included more than 900,000 public comments and three public hearings, EPA “improved [its] understanding of the methane and VOC emissions from these sources and the mitigation techniques available to control them,” including an abundance of available, adequately demonstrated, and cost-effective technology to limit methane and VOC emissions.<sup>66</sup> The Agency also found that the 2016 Standard would achieve cost-effective emission reductions, explaining what it considered to be a reasonable threshold for cost-effectiveness and why the various requirements were determined to be cost-effective.<sup>67</sup> The 2016 Standard also expressly recognized the importance of reducing methane emissions from the oil and natural gas sector to reduce the threat that climate change poses to public health and welfare.

Now, EPA seeks to reverse its position, asserting that it can no longer conclude that the requirements of the 2016 Standard are cost-effective while completely ignoring the Proposal’s impact on public health and welfare. The oil and natural gas sector remains the largest industrial source of methane in the United States. And scientific studies issued since 2016 – including reports by the federal government itself – only confirm the dangers of climate change. Yet, the Proposed Reconsideration Rule fails to evaluate the threat to public health and the environment posed by the increase in methane emissions, nor does it reconcile the increase in emissions with the underlying record that major reductions in GHG emissions are necessary for climate stabilization. EPA does not explain how weakening the 2016 Standard can be reconciled with the existing record. Instead, EPA bases its change on numerous unspecified “uncertainties” and “absences of information” and suggests without support that its prior position, as codified in the 2016 Standard, may have been wrong. In fact, as already discussed, EPA attempts to utilize the public comment period for the Proposed Reconsideration Rule to obtain data and information to after-the-fact support the very revisions to the 2016 Standard embodied in the Proposed Reconsideration Rule.

Indeed, EPA has not provided *any* reasoned basis for rejecting or revising the conclusions set forth in the rulemaking record for the 2016 Standard and has not explained on what basis it can now reject those findings. For example, one of the significant changes in the Proposed Reconsideration Rule relates to low-producing wells: in the 2016 Standard, such wells were required to be tested for leaks semi-annually, but the Proposed Reconsideration Rule modifies this requirement to biennially. Further, under the 2016 Standard, such leaks must be repaired

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<sup>66</sup> 81 Fed. Reg. at 35,842, 35,827; *see also* 80 Fed. Reg. at 56,595.

<sup>67</sup> *Id.*

within 30 days. However, the Proposed Reconsideration Rule requires only a first attempt at repair within 30 days, followed by actual repair within 60 days. Together, these modified requirements mean that a leaking component at a “low-producing well” could emit methane undetected for up to two years and could even continue to leak for longer once identified. For this proposed change, EPA relies primarily on the “Fort Worth Study” containing “component level emissions information for well sites in the Dallas/Forth Worth area,” which EPA asserts it received after promulgation of the 2016 Standard.”<sup>68</sup> But, the Fort Worth Study is not new: contrary to EPA’s assertion, EPA relied on the Fort Worth Study in the 2016 Standard.<sup>69</sup> EPA fails to explain how the very same study can be relied upon to justify such a drastic change in position regarding low production wells. As in *Encino*, EPA has “offered barely any explanation” for its change in position. 136 S. Ct. at 2126.

An agency’s action is arbitrary and capricious if it “entirely failed to consider an important aspect of the problem [or] offered an explanation for its decision that runs counter to the evidence before the agency.” *North Carolina v. EPA*, 531 F.3d 896, 906 (D.C.Cir. 2008) (quoting *Motor Vehicle Mfrs. Ass’n*, 463 U.S. at 43)). Because EPA fails to justify its change of position or to reconcile the Proposed Reconsideration Rule with its own rulemaking record, the Proposed Reconsideration Rule is arbitrary and capricious and contrary to the law.

**B. The Proposed Reconsideration Rule is Arbitrary and Capricious Because it Ignores Evidence and Fails to Analyze Relevant Data**

Not only does EPA fail to justify the Proposed Reconsideration Rule, but the Proposed Reconsideration Rule is arbitrary and capricious and an abuse of discretion because it fails to examine the relevant data and articulate a satisfactory explanation for its action including a “rational connection between the facts found and the choice made.” *Motor Vehicle Mfrs. Ass’n of U.S., Inc.*, 463 U.S. at 43. As stated, the 2016 Standard has been in effect for over two years, requiring owners and operators to submit various compliance reports to EPA.<sup>70</sup> The second annual reports were due by October 31, 2018, a mere two weeks after EPA rushed to publish the Proposed Reconsideration Rule. Despite the import of this information, however, EPA has only made available a limited number of compliance requests publicly available.<sup>71</sup> Although the

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<sup>68</sup> 83 Fed. Reg. at 52,067.

<sup>69</sup> 81 Fed. Reg. at 35,860; *see also*, <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0505-7589>.

<sup>70</sup> 81 Fed. Reg. 35,824 (June 3, 2016).

<sup>71</sup> In November 2017, the States submitted a request to EPA under the Freedom of Information Act (“FOIA”), U.S.C. § 552, seeking all records related to the 2016 Standard, including, but not limited to, all compliance reports. EPA has released some reports to the States pursuant to that FOIA request, but has indicated it is withholding numerous documents from public disclosure due to their supposed inclusion of proprietary business information. *See* Letter from Martha Segall, Acting Director, Monitoring, Assistance and Media Programs Division, Office of Compliance, EPA, to Daniel Lucas, Deputy Attorney General, California Office of the Attorney

publicly-available compliance reports represent a small fraction of the natural gas wells subject to the 2016 Standard, an initial analysis of the reports demonstrates that they offer key data that is directly relevant to the Proposed Reconsideration Rule, including the number of components found leaking at each well site during an inspection, the types of components found most frequently with leaks, the time expended by a surveyor to conduct an inspection, and the percentage of leaking components repaired.

Thus, EPA has in its possession thousands of reports of industry compliance with the 2016 Standard, yet does not reference that direct information regarding feasibility and costs of compliance to resolve its alleged “uncertainties.” EPA even acknowledges that “there are several well sites that have incorporated fugitive monitoring programs prior to the 2016 [Rule] ... Data from these programs could provide the information necessary to refine our model plant analysis,” but EPA then seemingly failed to analyze this data to determine whether it helps resolve EPA’s “uncertainties” regarding the feasibility and cost-effectiveness of the 2016 Standard. In order to conduct a reasoned analysis of the Proposed Reconsideration Rule and whether amendments of the 2016 Standard are even warranted, EPA must consider and analyze all relevant data—including all compliance reports submitted to date—and EPA’s failure to do so renders the Proposed Reconsideration Rule arbitrary and capricious and contrary to law.

### **C. EPA’s Regulatory Impact Analysis Is Arbitrary and Capricious in Relying on the “Interim” Social Cost of Methane**

The Proposed Reconsideration Rule is also arbitrary and capricious because it improperly calculates its costs and benefits on an inherently flawed Regulatory Impact Analysis. *See Center for Biological Diversity v. Bureau of Land Mgmt.*, 422 F. Supp. 2d 1115, 1149 (N.D. Cal. 2006) (finding it arbitrary and capricious for agency’s economic analysis “to rely on a critical assumption that lacks support in the record to justify” decision). Not only does EPA’s new social cost of methane calculation depart from agency practice, it also violates Executive Order 13,783 and the Office of Management and Budget’s (OMB) Circular A-4—both of which EPA concedes guide its analysis here—by failing to use the best available science and an appropriate discount rate.

To justify the Proposed Reconsideration Rule, EPA has recalculated the costs and benefits of the 2016 Standard using an “interim domestic Social Cost of Methane” metric that greatly undervalues the impacts of increased methane emissions by failing to consider the full, global impacts of these emissions.<sup>72</sup> This new interim measure instead considers only “domestic”

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General (Sept. 26, 2018), attached hereto. A limited number of reports submitted via EPA’s Compliance and Emissions Data Reporting Interface are also available through EPA’s public WebFIRE database. Moreover, the compliance reports collect “emission data” within the meaning of section 114 of the Clean Air Act, and so EPA is required by the statute to make this information public.

<sup>72</sup> 2018 Regulatory Impact Analysis at A-1.

impacts and “EPA approximates U.S. damages as 10 percent of the global values”—effectively dismissing 90% of the costs of increased methane emissions.<sup>73</sup> The effect of this swap is to significantly reduce the estimated benefits of the 2016 Standard, rendering them lower than largely unchanged compliance costs, without reasoned justification or basis in the record. EPA claims that it relied on this “interim” measure because Executive Order 13,783 withdrew the Technical Support Documents upon which the Regulatory Impact Analysis for the 2016 Standard relied for the valuation of changes in methane emissions.<sup>74</sup> However, Executive Order 13,783 still requires agencies to “monetiz[e] the value of changes in greenhouse gas emissions” and ensure that such estimates are “consistent with the guidance contained in OMB Circular A-4.”<sup>75</sup> Additionally, OMB Circular A-4, in turn, requires that agencies use “the best reasonably obtainable scientific, technical, and economic information available. To achieve this, you should rely on peer-reviewed literature, where available.”<sup>76</sup>

The Interagency Working Group (“IWG”)’s approach continues to represent the best available science in monetizing the impacts of changes in GHG emissions even though Executive Order 13,783 disbanded the Interagency Working Group and withdrew the technical support documents upon which the prior social cost of methane calculation was based. The social cost of GHGs was first developed by federal agencies under President George W. Bush, and the IWG was specifically organized to develop a single, harmonized value for federal agencies to use in their regulatory impact analyses under Executive Order 12,866. This approach was developed over several years, through robust scientific and peer-reviewed analyses and public processes.

By contrast, EPA’s “interim” measure lacks substantial analysis, much less peer review, and arbitrarily ignores nearly 90% of the costs imposed by methane emissions. As EPA itself admits, “[t]he SC-CH<sub>4</sub> estimates presented here are interim values developed under E.O. 13783 for use in regulatory analyses until an improved estimate of the impacts of climate change to the U.S. can be developed based on the best available science and economics.”<sup>77</sup> EPA’s substitution of the IWG’s social cost of methane with an unvetted and outcome-driven “interim” measure is arbitrary and capricious. Moreover, even EPA’s underlying estimate of “U.S. damages” as 10% of the global values is flawed.<sup>78</sup> The 2017 paper by William D. Nordhaus on which EPA relies for that estimate demonstrates that such estimates vary based on the model used, and the author himself states that “regional damage estimates are both incomplete and poorly understood,” and “[a] key message here is that there is little agreement on the distribution of the SCC by region.”<sup>79</sup>

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<sup>73</sup> *Id.*

<sup>74</sup> *Id.*, at 3-8.

<sup>75</sup> 82 Fed. Reg. at 16,096.

<sup>76</sup> OMB Circular A-4 at 17.

<sup>77</sup> 2018 Regulatory Impact Analysis at 3-7.

<sup>78</sup> 2018 RIA at A-1.

<sup>79</sup> Nordhaus, William D., “Revisiting the social cost of carbon,” Proceedings of the National Academy of Sciences of the United States, 114(7) (2017), at 1518-1523, *available at*

Furthermore, neither Executive Order 13,783, OMB Circular A-4, nor Executive Order 12,866 allows EPA to completely ignore international impacts in its 2018 Regulatory Impact Analysis. To the contrary, OMB Circular A-4 specifically recognizes that a regulation may “have effects beyond the borders of the United States,” and states that an agency’s economic analysis should encompass “all the important benefits and costs likely to result from the rule,” including “any important ancillary benefits.”<sup>80</sup> Further, OMB Circular A-4 provides guidance for the implementation of Executive Order 12866, which directs agencies to assess “all costs and benefits” of regulatory actions.<sup>81</sup>

Nor does the best available science support the use of a “domestic-only” value of the social cost of GHG emissions.<sup>82</sup> By calculating the social cost of methane on a domestic rather than a global basis, EPA fails to account for the global effects of GHGs that impact the U.S. and its citizens.<sup>83</sup> The effects of GHGs do not stop at the U.S. border; emissions in India and China, for example, can cause damage to U.S. companies and citizens (and vice versa). EPA’s use of a domestic number to justify greater U.S. emissions creates a dangerous precedent that other countries may also follow to relax their own emissions. Such increased global emissions will, in turn, harm the U.S. and its citizens.<sup>84</sup> EPA’s domestic social cost of methane also omits important spillover effects on U.S. corporations. The negative effects of global climate change—such as increased armed conflicts and extreme weather events—impact U.S. corporations both directly (through assets they own) and indirectly (through disruptions of supply chains).<sup>85</sup> Using a domestic social cost of methane also fails to consider the welfare of nine million U.S. citizens living abroad and 450,000 men and women serving in the U.S. armed forces abroad who are affected by extreme weather events outside U.S. borders. Moreover, despite sound science demonstrating that climate change will lead to an increase in the frequency of conflict domestically and globally, EPA fails to account for the likelihood that the number of American troops who will be deployed abroad will increase.<sup>86</sup> The “domestic only” approach is further belied by the Assessment, which contains an entire chapter on “Climate Effects on U.S. International Interests.”<sup>87</sup> Consequently, it was arbitrary and capricious for EPA to completely

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<http://www.pnas.org/content/114/7/1518.full.pdf>.

<sup>80</sup> Office of Management and Budget, Circular A-4 (Sept. 17, 2003), *available at* [https://www.whitehouse.gov/omb/circulars\\_a004\\_a-4](https://www.whitehouse.gov/omb/circulars_a004_a-4).

<sup>81</sup> Executive Order 12866, 58 Fed. Reg. 51,735 (Oct. 4, 1993).

<sup>82</sup> See Expert Report by Maximilian Auffhammer et al., The Use of the Social Cost of Carbon in the Federal Proposal “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks,” (Oct. 19, 2018) (EPA-HQ-OAR-2018-0283-5842), attached hereto.

<sup>83</sup> See *id.*

<sup>84</sup> *Id.*, at 7-8.

<sup>85</sup> *Id.*, at 9-10.

<sup>86</sup> *Id.*, at 10-11.

<sup>87</sup> Assessment at ch. 16.



ignore the global costs of increased methane emissions that will result from the Proposed Reconsideration Rule.

Furthermore, the use of a seven percent discount rate used in the 2018 Regulatory Impact Analysis is contrary to the best available science and thus arbitrary and capricious. Established economic analyses have discounted future damages from GHGs at rates from two and a half percent to five percent, a range that captures uncertainty in future impacts and intergenerational equity.<sup>88</sup> Because of the long-term, irreversible consequences of climate change, the effects of emissions today will be felt for many years into the future. In fact, as OMB explained in 2015, “the use of 7 percent is not considered appropriate for intergenerational discounting. There is wide support for this view in the academic literature, and it is recognized in Circular A-4 itself.”<sup>89</sup> The Proposed Reconsideration Rule fails to provide a reasonable justification for adding consideration of a seven percent discount rate.

Finally, the 2018 Regulatory Impact Analysis fails to provide any weight to the unquantified, foregone benefits, such as the public health consequences of many additional tons of VOC emissions. As OMB Circular A-4 provides, “when there are important non-monetary values at stake, you should also identify them in your analysis so policymakers can compare them with the monetary benefits and costs. When your analysis is complete, you should present a summary of the benefit and cost estimates for each alternative, including the qualitative and non-monetized factors affected by the rule, so that readers can evaluate them.”<sup>90</sup> EPA has failed to consider such impacts in its Proposed Reconsideration Rule.

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<sup>88</sup> Drupp, M.A., Freeman, M., Groom, B. and Nesje, F., “Discounting disentangled,” *American Economic Journal: Economic Policy*, American Economic Association, vol. 10(4) at 109-134 (November 2018).

<sup>89</sup> Interagency Working Group on the Social Cost of Carbon, *Response to Comments: Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12,866* at 36 (July 2015).

<sup>90</sup> OMB Circular A-4 at 3.

#### IV. CONCLUSION

For these reasons, the States and Cities strongly oppose EPA's Proposed Reconsideration Rule and respectfully request that EPA not finalize the Proposal.

Sincerely,

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Page 23

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**Attachment 1: Climate Change Impacts**

**Submitted with Comments by:**

**the States of California, Connecticut, Illinois, Iowa, Maine, Maryland,  
New Jersey, New York, Oregon, Rhode Island,  
Vermont, and Washington, the Commonwealth of Massachusetts, and the  
City of Chicago on**

**the Environmental Protection Agency's Oil and Natural Gas Sector: Emission  
Standards for New, Reconstructed, and Modified Sources Reconsideration, 83  
Fed. Reg. 52,056 (Oct. 15, 2018)  
Docket ID No. EPA-HQ-OAR-2017-0483**

Our States and Cities have already begun to experience adverse impacts from climate change. Based on the overwhelming scientific evidence, those harms are likely to increase in number and severity unless aggressive steps are taken to reduce emissions of carbon dioxide and other greenhouse gases. Summarized below are some of those most significant threats being faced by our States and Cities.

### **California**

Climate change's adverse effects have become impossible to ignore in California. The state weathered a historic five-year drought only to face record-setting fire seasons and a variety of other unprecedented phenomena increasingly harming the health and prosperity of Californians from all walks of life and all parts of the state, as described in more detail in a recent report of the California Air Resources Board.<sup>1</sup>

Drought conditions beginning in 2012 left reservoirs across the state at record low levels, often no more than a quarter of their capacity. The Sierra snowpack—critical to California's water supply, tourism industry, and hydroelectric power—was the smallest in at least 500 years.<sup>2</sup> The resulting cutbacks threatened the livelihoods of farmers and fishermen alike. In the Central Valley, the drought cost California agriculture about \$2.7 billion and more than 20,000 jobs in 2015 alone.<sup>3</sup> In addition, the drought led to land subsidence, due to reduced precipitation and increased groundwater pumping, and the death of 129 million trees throughout the state.<sup>4</sup>

Even prior to the drought, the U.S. Forest Service had found that California was at risk of losing 12 percent—over 5.7 million acres—of the total area of forests and woodlands in the state due to insects and disease thriving in a hotter climate.<sup>5</sup> Several pine species are projected to lose around half of their basal area.<sup>6</sup> And a majority of the ponderosa pine in the foothills of the central and southern Sierra Nevada Mountains has already died, killed by the western pine beetle and other bark beetles.<sup>7</sup> The increasing threat from these insects is driven in large part by warmer

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<sup>1</sup> See generally California Air Resources Board, *California's 2017 Climate Change Scoping Plan Update: The Strategy for Achieving California's 2030 Greenhouse Gas Target*, (Nov. 2017), [https://www.arb.ca.gov/cc/scopingplan/scoping\\_plan\\_2017.pdf](https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf).

<sup>2</sup> See NOAA, National Centers for Environmental Information: "Multi-Century Evaluation of Sierra Nevada Snowpack," <https://www.ncdc.noaa.gov/news/multi-century-evaluation-sierra-nevada-snowpack>.

<sup>3</sup> *California's 2017 Climate Change Scoping Plan Update*, *supra*, at 7.

<sup>4</sup> U.S. Forest Service, *Record 129 Million Dead Trees in California* (2017), [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd566303.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd566303.pdf).

<sup>5</sup> *California's 2017 Climate Change Scoping Plan Update*, *supra*, at 7.

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

summer temperatures attributable to climate change.<sup>8</sup> The very high levels of tree mortality led Governor Brown to issue an Emergency Proclamation on October 30, 2015, directing state agencies to identify and take action to reduce wildfire risk through the removal and use of the dead trees.<sup>9</sup>

Notwithstanding the Governor's Proclamation, the hotter, drier weather and millions of dead trees have increasingly accelerated the damage from wildfires. The 2017 season—the worst on record—killed dozens of people, destroyed thousands of homes, forced hundreds of thousands to evacuate, and burned more than half a million acres.<sup>10</sup> Prior to 2017, the worst year on record was 2015. In between, California faced the most expensive wildfire in U.S. history, the Soberanes fire, which burned for three months in 2016 and cost more than \$250 million to put out.<sup>11</sup> Climate change is expected to make longer and more severe wildfire seasons “the new normal” for California.<sup>12</sup> Besides the immediate threats they pose to life and property, wildfires significantly impair both air quality (via smoke and ash that can hospitalize residents) and water quality (via the erosion of hillsides stripped of their vegetation).

Off the coast, rising ocean temperatures and ocean acidification have spurred toxic algal blooms, resulting in high levels of the neurotoxin domoic acid.<sup>13</sup> This toxin has hit California's economically valuable Dungeness crab fishery particularly hard. From 2015 to 2017, domoic acid contamination forced California to close the fishery for parts of the season in order to protect consumers from serious health risks, with the 2015-16 season declared a federal disaster.<sup>14</sup> Other fisheries have suffered a similar fate. The Dungeness crab fishery is expected to decline significantly in the future as acidification increases.<sup>15</sup> In addition, high levels of domoic

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<sup>8</sup> Jeffry B. Mitton and Scott M. Ferrenberg, *Mountain Pine Beetle Develops an Unprecedented Summer Generation in Response to Climate Warming*, THE AMERICAN NATURALIST, Vol. 179, No. 5 (May 2012).

<sup>9</sup> “Proclamation of a State of Emergency,” [https://www.gov.ca.gov/wp-content/uploads/2017/09/10.30.15\\_Tree\\_Mortality\\_State\\_of\\_Emergency.pdf](https://www.gov.ca.gov/wp-content/uploads/2017/09/10.30.15_Tree_Mortality_State_of_Emergency.pdf).

<sup>10</sup> Lauren Tierney, *The Grim Scope of 2017's California Wildfire Season Is Now Clear. The Danger's Not Over.*, WASH. POST (Jan. 4, 2018), <https://www.washingtonpost.com/graphics/2017/national/california-wildfires-comparison/>.

<sup>11</sup> Lyndsey Gilpin, *The 10 Most Expensive Wildfires in the West's History*, HIGH COUNTRY NEWS (Oct. 5, 2016), <https://www.hcn.org/articles/the-10-most-expensive-wildfires-in-the-west-s-history>.

<sup>12</sup> California Department of Forestry and Fire Protection, *California's Forests and Rangelands: 2010 Assessment*, Ch. 3-7 (2010).

<sup>13</sup> S. Morgaine McKibben et al., *Climatic Regulation of the Neurotoxin Domoic Acid*, 114 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES 2 (2007).

<sup>14</sup> See Tara Duggan, *Toxin again an issue as Dungeness crab season nears*, S.F. CHRONICLE (Oct. 30, 2017), <https://www.sfchronicle.com/food/article/Dungeness-crab-season-could-be-delayed-again-by-12318483.php>; Mary Callahan, *California's crab fleet awaits share of \$200 million in disaster relief*, SANTA ROSA PRESS-DEMOCRAT (Feb. 15, 2018), <http://www.pressdemocrat.com/news/7996795-181/californias-crab-fleet-awaits-share?sba=AAS>.

<sup>15</sup> Marshall, K.N. et al., *Risks of Ocean Acidification in the California Current Food Web and Fisheries: Ecosystem Model Projections*, 21 GLOB. CHANGE BIOL. 4 (2017).

acid are poisoning marine mammals, and have been linked to reproductive failure (including high rates of miscarriage and premature birth) among California sea lions.<sup>16</sup>

California's many miles of coastline, particularly coastal bluffs, make it uniquely vulnerable to sea-level rise and more intense storms. Even if storms do not become more intense or frequent, sea-level rise itself will magnify the adverse impact of any storm surge and high waves on the California coast. Some observational studies report that the largest waves are already getting higher and winds are getting stronger.<sup>17</sup> California is likely to face greater than average sea-level rise, because of gravitational forces and the rotation of the Earth. Recent projections indicate that if no significant greenhouse gas mitigation efforts are taken, the San Francisco Bay Area may experience sea level rise between 1.6 to 3.4 feet, and in an extreme scenario involving the rapid loss of the Antarctic ice sheet, sea levels along California's coastline could rise up to 10 feet by 2100.<sup>18</sup>

In addition to damage to the physical environment, increased temperatures California will experience due to climate change will put the health of state residents at risk. Increased hospitalizations for multiple diseases, including cardiovascular disease, ischemic heart disease, ischemic stroke, respiratory disease, pneumonia, dehydration, heat stroke, diabetes, and acute renal failure are associated with increases in same-day temperature.<sup>19</sup> Such temperature increases have also been found to be associated with increased risk of preterm delivery<sup>20</sup> and stillbirths.<sup>21</sup> Recent California studies suggest increased mortality risk not only with extreme heat, but also with increasing ambient temperature.<sup>22</sup>

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<sup>16</sup> T. Goldstein et al., *The Role of Domoic Acid in Abortion and Premature Parturition of California Sea Lions (Zalophus californianus) on San Miguel Island, California*, JOURNAL OF WILDLIFE DISEASES. 45(1): 91-108 (2009).

<sup>17</sup> National Research Council of the National Academy of Sciences, *Sea-Level Rise for the Coasts of California, Oregon and Washington: Past, Present, and Future*. National Academies Press (2012).

<sup>18</sup> Griggs, G, Árvai, J, Cayan, D, DeConto, R, Fox, J, Fricker, HA, Kopp, RE, Tebaldi, C, Whiteman, EA (California Ocean Protection Council Science Advisory Team Working Group). *Rising Seas in California: An Update on Sea-Level Rise Science*. California Ocean Science Trust, April 2017.

<sup>19</sup> Green R, Basu R, Malig B, Broadwin R, Kim J and Ostro B (2010). *The Effect of Temperature on Hospital Admissions in Nine California Counties*. INTERNATIONAL JOURNAL OF PUBLIC HEALTH 55(2): 113-121. See also Basu R, Pearson D, Malig B, Broadwin R and Green S (2012). *The effect of elevated ambient temperature on emergency room visits in California*. EPIDEMIOLOGY 23(6):813-20; Sherbakov T, Malig B, Guirguis K, Gershunov A, Basu R. (2018) *Ambient temperature and added heat wave effects on hospitalizations in California from 1999 to 2009*. ENVIRON RES. 160:83-90.

<sup>20</sup> Basu R, Malig B and Ostro B (2010). *High ambient temperature and the risk of preterm delivery*. AM J EPIDEMIOLOGY 172(10): 1108-1117.

<sup>21</sup> Basu R, Sarovar V, Malig BJ (2018) *Association Between High Ambient Temperature and Risk of Stillbirth in California*. AM J EPIDEMIOL. 183(10):894-901.

<sup>22</sup> Basu R and Ostro BD (2008a). *A multicounty analysis identifying the populations vulnerable to mortality associated with high ambient temperature in California*. AM J EPIDEMIOL. 168(6): 632-637; Basu R, Feng W and Ostro B (2008b). *Characterizing temperature and mortality in nine California counties, 1999-2003*. EPIDEMIOLOGY 19(1): 138 -145; Basu R and Malig B (2011). *High ambient*



## **California 2018 Supplement**

In 2018, the State of California produced two substantial reports on the impacts of climate change in California, which incorporate the latest scientific research on the impacts of climate change in California.

The first report, published May 2018 titled “*Indicators of Climate Change in California*” examines thirty-six separate indicators and reflects the contributions of dozens of scientists from California’s universities, and state agencies, as well as the U.S. National Oceanic and Atmospheric Administration and the U.S. Department of Energy’s Lawrence Berkeley National Laboratory.<sup>23</sup> A copy of the full “Indicators” report is included in the attachments to the States’ comments.

The second report, published August 2018 titled “*California’s Fourth Climate Assessment*” includes thirty-three papers from State-funded research, and eleven papers from externally funded researchers, as well as regional summaries and a statewide summary of climate vulnerabilities, and a key findings paper.<sup>24</sup> A copy of selected research papers and the regional and statewide summaries and key findings reports are included in the attachments to the States’ comments.

Key findings from those reports and other sources include the following:

### **Temperature Changes and Air Quality Impacts**

“Since 1895, annual average air temperatures have increased throughout the state, with temperatures rising at a faster rate beginning in the 1980s. The last four years were notably warm, with 2014 being the warmest on record, followed by 2015, 2017, and 2016. Temperatures at night have increased more than during the day: minimum temperatures (which generally occur at night) increased at a rate of 2.3 degrees Fahrenheit (°F) per century, compared to 1.3°F per century for maximum temperatures.”<sup>25</sup>

“Extremely hot days and nights — that is, when temperatures are at or above the highest 2 percent of maximum and minimum daily temperatures, respectively — have become more frequent since 1950. Both extreme heat days and nights have increased at a faster rate in the past 30 years. Heat waves, defined as five or more consecutive extreme heat days or nights,

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*temperature and mortality in California: Exploring the roles of age, disease, and mortality displacement.* ENVIRONMENTAL RESEARCH 111(8): 1286-1292.

<sup>23</sup> See Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (2018). *Indicators of Climate Change in California*. Available at [www.oehha.ca.gov/climate-change/document/indicators-climate-change-california](http://www.oehha.ca.gov/climate-change/document/indicators-climate-change-california) (last visited October 24, 2018) (hereinafter “California Climate Indicators 2018”).

<sup>24</sup> See California Natural Resources Agency, *California’s Fourth Climate Change Assessment* (2018), available at [www.ClimateAssessment.ca.gov](http://www.ClimateAssessment.ca.gov) (last visited October 24, 2018) (hereinafter “California 4<sup>th</sup> Assessment”).

<sup>25</sup> California Climate Indicators 2018 at S-4.

are also increasing, especially at night. Nighttime heat waves, which were infrequent until the mid-1970s, have increased markedly over the past 40 years.”<sup>26</sup>

In addition, rising temperatures “could lead to increases in ground-level ozone and reduce the effectiveness of emission reductions taken to achieve air quality standards....”<sup>27</sup>

“A recent detailed analysis suggests that adoption of low-carbon energy in California to reduce GHG emissions 80 percent below 1990 levels would lead to a 55 percent reduction in air pollution mortality rates relative to 2010 levels (Zapata et al., 2018). These public health improvements have a value of \$11-20 billion/year in California (Zapata et al., 2018).”<sup>28</sup>

## **Human Health Impacts**

Climate change poses direct and indirect risks to public health, as people will experience earlier death and worsening illnesses.

“Nineteen heat-related events occurred from 1999 to 2009 that had significant impacts on human health, resulting in about 11,000 excess hospitalizations. However, the National Weather Service issued Heat Advisories for only six of the events. Heat-Health Events (HHEs), which better predict risk to populations vulnerable to heat, will worsen drastically throughout the state: by midcentury, the Central Valley is projected to experience average Heat-Health Events that are two weeks longer, and HHEs could occur four to ten times more often in the Northern Sierra region.”<sup>29</sup>

“The 2006 heat wave killed over 600 people, resulted in 16,000 emergency department visits, and led to nearly \$5.4 billion in damages. The human cost of these events is already immense, but research suggests that mortality risk for those 65 or older could increase ten-fold by the 2090s because of climate change.”<sup>30</sup>

## **Environmental Justice Impacts**

“Multiple studies of vulnerability and climate impacts indicate that existing inequities can be exacerbated by climate change. For example, the consequences of climate-related water impacts are particularly acute for communities already dealing with a legacy of inequalities. A recent study on drought and equity in California found that low-income households, people of color, and communities already burdened with environmental pollution suffered the most severe impacts caused by water supply shortages and rising cost of water (Feinstein et al., 2017). In a report prepared as part of the Fourth Assessment, Ekstrom et al. (2018) found

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<sup>26</sup> *Id.* at S-5.

<sup>27</sup> California’s Fourth Climate Change Assessment, California’s Changing Climate 2018: Statewide Summary Report at 40 (Aug. 2018), *available at* <http://www.climateassessment.ca.gov/state/docs/20180827-StatewideSummary.pdf>. (hereinafter “California Statewide Summary”).

<sup>28</sup> *Id.* at 71.

<sup>29</sup> *Id.* at 10.

<sup>30</sup> *Id.*

that while all water districts faced similar challenges during the drought, small water districts (defined as those serving less than 10,000 people or less than approximately 3,300 connections) were less likely to have the resources and capacity to overcome those challenges. These districts are most likely to serve small, rural communities in California. Furthermore, for marginalized populations in rural areas of the state, agricultural actions in response to the drought, including increases in groundwater pumping and crop choices, are increasing and reshaping their vulnerability to drought and water shortage (Greene, 2018).<sup>31</sup>

“Inequities not only exist in varying exposures to climate risk, but also in the availability and implementation of potential adaptation or resilience solutions. Recent research analyzed differences in tree canopy, an important tool for adapting to the effects of extreme heat, at the census block group scale in coastal Los Angeles and found disparities between canopy in high-income and low-income neighborhoods (Locke et al., 2017). This disparity can have implications for communities because of the benefits tree canopy provides in reducing the negative effects of extreme heat events. A study prepared for the Fourth Assessment provides one of the first estimates of these benefits in one location (Taha et al., 2018).”<sup>32</sup>

### **Tribal and Indigenous Communities Impacts**

“Tribes and Indigenous communities in California face unique challenges under a changing climate. Tribes maintain cultural lifeways and rely on traditional resources (e.g., salmon fisheries) for both social and economic purposes. However, tribes are no longer mobile across the landscape. For many tribes in California, seasonal movement and camps were a part of living with the environment. Today these nomadic options are not available or are limited. This is the result of Euro-American and U.S. policy and actions and underpins several climate vulnerabilities. Tribes with reservations/Rancherias/allotments are vulnerable to climate change in a specific way: tribal lands are essentially locked into fixed geographic locations and land status. Only relatively few tribal members are still able to engage in their cultural traditions as livelihoods.”<sup>33</sup>

### **Precipitation and Water Supply Impacts**

“California has the highest variability of year-to-year precipitation in the contiguous United States.”<sup>34</sup> By 2050, “the average water supply from snowpack is projected to decline by 2/3 from historical levels.”<sup>35</sup>

“Statewide precipitation has become increasingly variable from year to year. In seven of the last ten years, statewide precipitation has been below the statewide average (22.9

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<sup>31</sup> California Statewide Summary at 36-37.

<sup>32</sup> *Id.* at 37.

<sup>33</sup> *Id.* at 10.

<sup>34</sup> *Id.* at 24.

<sup>35</sup> California’s Fourth Climate Change Assessment, California’s Changing Climate 2018: A Summary of Key Findings from California’s Fourth Climate Change Assessment 6 (Aug. 2018), available at <http://www.climateassessment.ca.gov/state/docs/20180827-SummaryBrochure.pdf>. (hereinafter “California Key Findings”) at 5.

inches). In fact, California’s driest consecutive four-year period occurred from 2012 to 2015. In recent years, the fraction of precipitation that falls as rain (rather than snow) over the watersheds that provide most of California’s water supply has been increasing — another indication of warming temperatures.”<sup>36</sup>

“Spring snowpack, aggregated over the Sierra Nevada and other mountain catchments in central and northern California, declines substantially under modeled climate changes (Figure 6). The mean snow water equivalent (SWE) declines to less than two-thirds of its historical average by 2050, averaged over several model projections under both RCP 4.5 and 8.5 scenarios. By 2100, SWE declines to less than half the historical median under RCP 4.5, and less than one-third under RCP 8.5. Importantly, the decline in spring snowpack occurs even if the amount of precipitation remains relatively stable over the central and northern California region; the snow loss is the result of a progressively warmer climate. Furthermore, while the models indicate that strong year-to-year variation will continue to occur, the likelihood of attaining spring snowpack that reaches or exceeds historical average is projected to diminish markedly (Pierce et al., 2018) (Figure 6).”<sup>37</sup>

## **Agriculture Impacts**

“Agricultural production could face climate-related water shortages of up to 16% in certain regions. Regardless of whether California receives more or less annual precipitation in the future, the state will be dryer because hotter conditions will increase the loss of soil moisture.”<sup>38</sup>

“Winter chill has been declining in certain areas of the Central Valley. This is the period of cold temperatures above freezing but below a threshold temperature needed by fruit and nut trees to become and remain dormant, bloom, and subsequently bear fruit. When tracked using “chill hours,” a metric used since the 1940s, more than half the sites studied showed declining trends; with the more recently developed “chill portions” metric, fewer sites showed declines.”<sup>39</sup>

“[I]t is evident from recent droughts that agricultural production will be challenged by water shortages, higher temperatures, changing atmospheric conditions, and conversion of agricultural land to developed uses (Medellín-Azuara et al., 2018; Wilson et al., 2017). Agriculture is the economic foundation for many of California’s communities, particularly rural communities where other employment opportunities are limited. Roughly 6.7 percent of jobs statewide are generated by farms and farm processing, and in the Central Valley the figure is much higher (22 percent) (UC Agricultural Issues Center, 2012). This means that climate change impacts to agriculture, and even nuanced impacts such as shifting cropping patterns, may create hardships in the rural communities where agriculture is foundational.

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<sup>36</sup> California Climate Indicators at S-5.

<sup>37</sup> California Statewide Summary at 27.

<sup>38</sup> *Id.*

<sup>39</sup> California Climate Indicators at S-5.

Different crops have different labor demands (Medellín-Azuara et al., 2016), and shifting crop patterns may result in changes in employment throughout the agricultural sector (Greene, 2018; Villarejo, 1996). A Fourth Assessment study found that in the 2012-2016 drought, to access higher market prices and compensate for the higher cost of water, many farms switched to higher value crops, for which cultivation and harvesting could be largely automated— leaving agricultural workers with employment shortages beyond the drought (Greene, 2018). A report by the University of California found that in 2016, the drought resulted in a \$603 million loss to the economy and the loss of 4,700 jobs due to the impacts on agriculture (Medellín-Azuara et al., 2016).<sup>40</sup>

## Forest Impacts

A new paper published on October 18, 2018, estimates that “human-caused climate change caused over half of the documented increase in fuel aridity since the 1970s and doubled the cumulative forest fire area since 1984,” contributing an additional 4.2 million ha [hectares] of forest fire.<sup>41</sup> As the paper notes, “[i]ncreased forest fire activity across the western United States in recent decades has contributed to widespread forest mortality, carbon emissions, periods of degraded air quality and substantial fire suppression expenditures.”<sup>42</sup>

“A changing climate combined with anthropogenic factors has already contributed to more frequent and severe forest wildfires in the western U.S. as a whole (Abatzoglou & Williams, 2016; Mann et al., 2016; Westerling, 2016).”<sup>43</sup>

“One Fourth Assessment model suggests large wildfires (greater than 25,000 acres) could become 50% more frequent by the end of century if emissions are not reduced. The model produces more years with extremely high areas burned, even compared to the historically destructive wildfires of 2017 and 2018.”<sup>44</sup>

“By the end of the century, California could experience wildfires that burn up to a maximum of 178% more acres per year than current averages.”<sup>45</sup> Increased wildfire smoke will also lead to more respiratory illness.<sup>46</sup>

In addition, the changes in climate make trees more vulnerable to pest infestations.

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<sup>40</sup> California Statewide Summary at 59.

<sup>41</sup> John T. Abatzoglou and A. Park Williams, Impact of Anthropogenic Climate Change on Wildfire Across the Western U.S. Forests, *Proceedings of the National Academy of Science*, vol. 113, no. 42 (Oct. 18, 2018), available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5081637/pdf/pnas.201607171.pdf>.

<sup>42</sup> *Id.*

<sup>43</sup> California Statewide Summary at 28.

<sup>44</sup> California Key Findings at 6.

<sup>45</sup> *Id.*

<sup>46</sup> *Id.* at 8.

“Moisture stress in conifer forests enhances tree vulnerability to insect infestation, particularly by bark beetles (Anderegg et al., 2015; Bentz et al., 2010; Berryman, 1976; Gaylord et al., 2013; Hart et al., 2014; Kolb et al., 2016; Raffa et al., 2008). Between 2010 and 2017, an estimated 129 million trees have died (Young et al., 2017). Bark beetle outbreaks may be promoted by warming for multiple reasons (Bentz et al., 2010). Warming may promote successful beetle overwintering (Weed et al., 2015) and may also promote earlier timing of adult emergence and flight in spring/early summer, which may enable beetles to increase the frequency at which they can mate, lay eggs, and emerge as adults (Bentz et al., 2016).”<sup>47</sup>

## **Drought and Land Subsidence Impacts**

“The recent 2012-2016 drought was exacerbated by unusual warmth (Williams, Seager, et al., 2015), and disproportionately low Sierra Nevada snowpack levels (Dettinger & Anderson, 2015). This drought has been described as a harbinger of projected dry spells in future decades, whose impacts will likely be worsened by increased heat (Mann & Gleick, 2015). A very wet winter in 2016-2017 followed this drought, a further indication of potential continued climate volatility in the future (Berg & Hall, 2015; Polade, et al., 2017; Swain et al., 2018).”<sup>48</sup>

“Warming air temperatures throughout the 21st century will increase moisture loss from soils, which will lead to drier seasonal conditions even if precipitation increases (Thorne et al., 2015). Warming air temperatures also amplify dryness caused by decreases in precipitation (Ault et al., 2016; Cayan et al., 2010; Diffenbaugh et al., 2015). These changes affect both seasonal dryness and drought events. Climate projections from the previous and present generation of GCMs (e.g. Pierce et al., 2014; Swain et al., 2018) show that seasonal summer dryness in California may become prolonged due to earlier spring soil drying that lasts longer into the fall and winter rainy season. The extreme warmth during the drought years of 2014 and 2015 intensified some aspects of the 2012-2016 drought (Griffin & Anchukaitis, 2014; Mao et al., 2015; Stephenson et al., 2018; Williams, Seager, et al., 2015) and may be analogous for future drought events (Diffenbaugh et al., 2015; Mann & Gleick, 2015; Williams, Seager, et al., 2015).”<sup>49</sup>

In addition, a “secondary, but large, effect of droughts is the increased extraction of groundwater from aquifers in the Central Valley, primarily for agricultural uses. The pumping can lead to subsidence of ground levels, which around the San Joaquin-Sacramento Delta has been measured at over three-quarters of an inch per year.”<sup>50</sup>

“This subsidence compounds the risk that sea-level rise and storms could cause overtopping or failure of the levees, exposing natural gas pipelines and other infrastructure to damage or structural failure. At this rate of subsidence, the levees may fail to meet the federal levee

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<sup>47</sup> California Statewide Summary at 64.

<sup>48</sup> *Id.* at 13.

<sup>49</sup> *Id.* at 26.

<sup>50</sup> *Id.* at 14.

height standard (1.5 ft. freeboard above 100-year flood level) between 2050-2080, depending on the rate of sea-level rise.”<sup>51</sup>

### **Sea-Level Rise, Coastal Erosion and Infrastructure Impacts**

“Along the California coast, sea levels have generally risen. Since 1900, mean sea level has increased by about 180 millimeters (7 inches) at San Francisco and by about 150 millimeters (6 inches) since 1924 at La Jolla. In contrast, sea level at Crescent City has declined by about 70 millimeters (3 inches) since 1933 due to an uplift of the land surface from the movement of the Earth’s plates. Sea level rise threatens existing or planned infrastructure, development, and ecosystems along California’s coast.”<sup>52</sup>

“If emissions continue at current rates, Fourth Assessment model results indicate that total sea-level rise by 2100 is expected to be 54 inches, almost twice the rise that would occur if greenhouse gas emissions are lowered to reduce risk.”<sup>53</sup>

“31 to 67% of Southern California beaches may completely erode by 2100 without large-scale human interventions.”<sup>54</sup>

“Flooding from sea-level rise and coastal wave events leads to bluff, cliff, and beach erosion, which could affect large geographic areas (hundreds of kilometers). In research conducted for the Fourth Assessment, Erikson et al. (2018) found that if a 100-year storm occurs under a future with 2m (6.6 feet) of SLR, resultant flooding in Southern California could affect 250,000 people and lead to damages of \$50 billion worth of property and \$39 billion worth of buildings.”<sup>55</sup>

In addition, airports in major urban areas will be susceptible to major flooding from sea-level rise and storm surge by 2040-2080, and 370 miles of coastal highway will be susceptible to coastal flooding by 2100.<sup>56</sup>

### **Ocean Acidity and Health Impacts**

“Increasing evidence shows that climate change is degrading California’s coastal and marine environment. In recent years, several unusual events have occurred along the California coast and ocean, including a historic marine heat wave, record harmful algal bloom, fishery closures, and a significant loss of northern kelp forests.”<sup>57</sup>

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<sup>51</sup> California Statewide Summary at 12.

<sup>52</sup> California Climate Indicators at S-7.

<sup>53</sup> California Key Findings, at 6.

<sup>54</sup> *Id.* at 15.

<sup>55</sup> California Statewide Summary at 31.

<sup>56</sup> *Id.* at 54-55.

<sup>57</sup> *Id.* at 12.

In addition:

“[o]cean acidification ... is predicted to occur especially rapidly along the West Coast (e.g., Gruber et al., 2012). Ocean acidification presents a clear threat to coastal communities through its significant impacts on commercial fisheries and farmed shellfish (Ekstrom et al., 2015) as well as to ocean ecosystems on a broader scale. Ocean acidification affects many shell-forming species, including oysters, mussels, abalone, crabs, and the microscopic plankton that form the base of the oceanic food chain (Kroeker et al., 2013; Kroeker et al., 2010). Significant changes in behavior and physiology of fish and invertebrates due to rising CO<sub>2</sub> and increased acidity have already been documented (e.g., Hamilton et al., 2017; Jellison et al., 2017; Kroeker et al., 2013; Munday et al., 2009). Species vulnerable to ocean acidification account for approximately half of total fisheries revenue on the West Coast (Marshall et al., 2017).”<sup>58</sup>

### **Connecticut**

In April 2010, the Governor’s Steering Committee on Climate Change produced a report that predicted the impact of climate change on Connecticut’s agriculture, infrastructure, natural resources and public health.<sup>59</sup> In general the report concluded that the impact of climate change on these four areas would be largely negative; Connecticut crops such as maple syrup, apple and pear production, and shellfish will suffer; infrastructure to control coastal flooding and storm water could be substantially damaged; rare habitats and critical species face elimination; and Connecticut’s public health, particularly of the most vulnerable communities, is threatened by a decrease in air quality, extreme heat and the favorable conditions for increased disease.

The Connecticut Institute for Resilience and Climate Adaptation or CIRCA, an institute housed at the University of Connecticut, has projected a rise in sea level of approximately twenty inches by 2050. In response to this latest analysis, Governor Malloy signed Public Act 18-82, *An Act Concerning Climate Change Planning and Resiliency*, into law which requires state and federally funded projects to plan for a scenario of 50 centimeters of sea level rise by 2050, ensuring the success of future projects undertaken in the state, the prudence of state investments, and the safety of those residing on or near the shoreline. In addition to preparations for the imminent rise in sea level, Public Act 18-82 sets an interim target of a 45% reduction in greenhouse gas emissions from a 2001 baseline by 2030, ensuring Connecticut remains on a path to achieve an 80% reduction in emissions by 2050 as mandated under the state’s Global Warming Solutions Act.

### **Observed Change**

Connecticut has already begun to experience the severe consequences of climate change induced by unchecked, increasing GHG emissions. Between 1895 and 2011, temperatures in the

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<sup>58</sup> *Id.* at 66-67.

<sup>59</sup> Adaptation Subcommittee to the Governor’s Steering Committee on Climate Change, *The Impacts of Climate Change on Connecticut Agriculture, Infrastructure, Natural Resources and Public Health* (2010), available at <http://www.ct.gov/deep/lib/deep/climatechange/impactsofclimatechange.pdf>.



Connecticut increased by almost 2 °F (0.16 °F per decade), and precipitation increased by approximately five inches, or more than 10% (0.4 inches per decade).<sup>60</sup> Between 1980 and 2018, average annual temperature in Connecticut has risen by over 2° F. Over the same period, winter temperatures have warmed by 3° F.

The Northeast has experienced a greater recent increase in extreme precipitation than any other region in the United States; between 1958 and 2010, Connecticut saw more than a 70% increase in the amount of precipitation falling in very heavy events. In 2011 Hurricane Irene caused power outages affecting 754,000 customers and over \$1 billion in damage, and in 2012 Hurricane Sandy caused power outages affecting more than 600,000 customers and over \$360 million in damage. The latter forced thousands of Connecticut residents evacuate, saw thousands apply for FEMA assistance, damaged roads and infrastructure, and took nine days for utilities to restore power.<sup>61</sup> Many of Connecticut's coastal communities and assets remain at risk to more frequent future storm events exacerbated by climate change.

## Projections

Connecticut is highly vulnerable to changes in mean and extreme climate due to regional characteristics like a dense population and aging infrastructure. In conservative estimates, climate projections for Connecticut robustly indicate that annual mean temperature will rise by 5-10°F by the end of the 21<sup>st</sup> Century.

Mean annual precipitation is also likely to increase, particularly in winter and spring seasons, contributing to increased flooding risk through the region. Additionally, weather and climate extremes are projected to be more frequent and intense which will impact both natural and socioeconomic sectors. As temperatures increase along the coast, humidity will also rise, resulting in amplified heat stress during summer months. For inland areas, drought events will become more severe and longer-lived, causing increased competition for limited water resources, agricultural crop damage, ecosystem stress, and risk of wildfire. Communities in Connecticut should expect that coastal flooding intensity and frequency to increase in coming decades due to accelerating trends in coastal erosion, extreme precipitation, and storms.

## Sea Level

Direct and remotely sensed measurements of sea level have shown that the annual mean level of the ocean surface is rising. In the Northeast, coastal flooding has increased due to approximate one foot rise in sea level since 1900. This rate of sea level rise exceeds the global

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<sup>60</sup> Horton, R., Yohe, G., Easterling, W., Kates, R., Matthias, R., Sussman, E., Whelchel, A., Wolfe, D., and Lipschultz, F. (2014). Ch. 16: Northeast. *Climate Change Impacts in the United States: The Third National Climate Assessment*, J. M. Melillo, Terese (T.C.) Richmond, and G. W. Yohe, Eds., U.S. Global Change Research Program, 16-1-nn.

<sup>61</sup> Burgeson, John, *Rising Above the Tide: 5 Years Since Sandy*, CTPost, (Oct. 28, 2017), <https://www.ctpost.com/local/article/Rising-above-the-tide-5-years-since-Sandy-12313727.php>

average of approximately eight inches, due primarily to land subsidence and thermal expansion (of ocean water) along the Northeastern coast. In moderately conservative estimates, sea level rise along the Connecticut coast is projected to be ~0.76 ft (0.23 meters) higher than 2000 levels by 2050.<sup>62</sup> However, the upper range of projected sea level rise by 2050 is over 1.5 feet. This will strongly impact the many coastal communities and businesses in Connecticut.

## **Illinois**

Climate change is affecting Illinois in a number of ways—both by fundamentally altering the state’s environment in ways never seen before and by intensifying well-recognized weather hazards. The fundamental changes can be seen in Illinois’ farming industry and in the state’s greatest environmental asset, Lake Michigan.

The farming sector is particularly vulnerable to extreme precipitation caused by climate change. 2012 was Illinois’ third driest summer on record. The very next year, heavy rainfall caused flooding in parts of the state that, together with the wettest January-to-June period ever recorded in Illinois, forced farmers to delay planting and lose revenue.<sup>63</sup> Heat waves during the crop pollination season may reduce future yield: hotter weather and altered rain patterns could cause 15% loss in the next 5 to 25 years and up to a 73% average loss by the end of the next century.<sup>64</sup> Milder winters will lead to more weeds, insects, and diseases surviving throughout winter, also hurting yield and quality.<sup>65</sup>

Climate disruption also contributes to whipsawing water levels on Lake Michigan. In January 2013, the lake fell to an all-time low water level. In 2015, it climbed to its highest level since 1998, the second-largest recorded gain over a 24-month span.<sup>66</sup> Rapidly swinging water levels hurt the commercial shipping industry, recreational boaters, wildlife, and beach-goers. For example, for every inch the lake loses, a freighter must forgo 270 tons of cargo. High water erodes beaches and damages property.<sup>67</sup>

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<sup>62</sup> O’Donnell, J., *Sea Level Rise in Connecticut*. Draft Report, Connecticut Institute for Resilience and Climate Adaptation (March 27, 2018), available at [https://circa.uconn.edu/wp-content/uploads/sites/1618/2017/10/SeaLevelRiseConnecticutFinalDraft-Posted-3\\_27\\_18.pdf](https://circa.uconn.edu/wp-content/uploads/sites/1618/2017/10/SeaLevelRiseConnecticutFinalDraft-Posted-3_27_18.pdf).

<sup>63</sup> University of Illinois–Institute of Government & Public Affairs, *Preparing for Climate Change in Illinois: An Overview of Anticipated Impacts*, <https://igpa.uillinois.edu/sites/igpa.uillinois.edu/files/reports/Preparing-for-Climate-Change-in-Illinois.pdf> (last visited Oct. 11, 2018).

<sup>64</sup> *Id.*

<sup>65</sup> *Id.*

<sup>66</sup> Tony Briscoe, *Lake Michigan Water Levels Rising at Near Record Rate*, CHICAGO TRIBUNE (July 12, 2015), available at <http://www.chicagotribune.com/news/local/breaking/ct-lake-michigan-water-levels-met-20150710-story.html>.

<sup>67</sup> *Id.*

Climate change has already turned up the volume on well-recognized catastrophic extreme weather events, causing stronger storms, increased precipitation, and higher average temperatures. In recent years, the state has been struck by deadly tornadoes in November 2013 and the 2014 polar vortex.<sup>68</sup>

Illinois also suffers from frequent flooding, and climate change has and will cause the frequency and strength of these floods to increase. For instance, flooding caused by increased precipitation causes dramatic damage to the lives and property of Illinois residents; this toll will increase as climate change intensifies. For example, in 2009, a freight train carrying ethanol derailed in Cherry Valley, Illinois due to washout of train tracks following heavy rains.<sup>69</sup> Fourteen of the tanker cars carrying ethanol caught fire, killing a woman in her car waiting for the train to pass. Seven other people were injured and about 600 nearby homes were evacuated.<sup>70</sup> A few days later, a 54-mile-long fish kill occurred on the Rock River when ethanol that was not consumed by the fire flowed downstream, killing over 70,000 fish.<sup>71</sup>

### CHERRY VALLEY TRAIN DERAILMENT



*Image from Rockford Register Star*

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<sup>68</sup> National Weather Service, *Historic Tornado Outbreak of November 17, 2013*, <https://www.weather.gov/ilx/17nov13> (last visited Oct. 11, 2018); National Weather Service, *The Bitterly Cold Air of January 27-28, 2014*, <https://www.weather.gov/lot/2014jan28> (last visited Oct. 11, 2018).

<sup>69</sup> National Transportation Safety Board, *Derailement of CN Freight Train U70691-18 with Subsequent Hazardous Materials Release and Fire*, <https://www.nts.gov/investigations/AccidentReports/Pages/RAR1201.aspx> (last visited Oct. 11, 2018).

<sup>70</sup> CBC.ca, *CN Blamed for Fatal Train Derailment in Illinois*, <https://www.cbc.ca/news/canada/cn-blamed-for-fatal-train-derailment-in-illinois-1.1139430> (last visited Oct. 12, 2018).

<sup>71</sup> Illinois Attorney General, *Attorney General Madigan Reaches Settlement to Recover Costs of Rockford Train Derailment, Ethanol Leak*, [http://www.illinoisattorneygeneral.gov/pressroom/2015\\_03/20150305.html](http://www.illinoisattorneygeneral.gov/pressroom/2015_03/20150305.html) (last visited Oct. 12, 2018).

In another instance, a major flood struck Jo Daviess County in northwestern Illinois in 2011 after 15 inches of rain fell during a 12-hour time period. The flood waters caused extensive damage to roads and train tracks and at least one fatality.<sup>72</sup> Illinois has also struggled with urban flooding caused by heavy rains falling on impervious surfaces.<sup>73</sup>

### 2011 JO DAVIESS COUNTY FLOOD



*Images from Rockford Register Star*

Furthermore, rising average temperatures injures Illinois residents. Hotter weather will inevitably harm public health and lead to heat-related deaths. For instance, over 700 Illinois residents died due to the historically intense heat wave in July 1995.<sup>74</sup> Intensified drought conditions strengthen these impacts—the inverse of heavy precipitation.

Though catastrophes such as these have occurred from time to time throughout Illinois' history, climate change will cause them to happen more frequently and with more ferocity than ever before, at the cost of the lives and health of Illinois residents.

### **Iowa**

Climate change increases Iowa's propensity for flooding and droughts, creates challenges for the state's agricultural economy, and poses risks to public health. While already experiencing

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<sup>72</sup> *Crews Find Body of Woman Swept Away by Flood in Galena*, ROCKFORD REGISTER STAR (July 30, 2011), available at [www.rrstar.com/x555032097/Crews-find-body-of-woman-swept-away-by-flood-in-Galena](http://www.rrstar.com/x555032097/Crews-find-body-of-woman-swept-away-by-flood-in-Galena)

<sup>73</sup> NOAA National Centers for Environmental Information, *State Climate Summaries: Illinois*, <https://statesummaries.ncics.org/il> (last visited Oct. 11, 2018).

<sup>74</sup> Jan C. Semenza, *et al.*, *Heat Related Deaths During the 1995 Heat Wave in Chicago*, THE NEW ENGLAND JOURNAL OF MEDICINE (July 11, 1996), available at <https://www.nejm.org/doi/full/10.1056/NEJM199607113350203>.



some of climate change's adverse effects, Iowa will likely only become more susceptible to climate change-related harms as average temperatures continue to increase.

Climate change influences the frequency and duration of precipitation events, and Iowa is feeling the effects.<sup>75</sup> Over the past half century, Iowa has seen an increase in annual precipitation and a greater frequency of extreme rain events.<sup>76</sup> The latest science suggests that the increase in precipitation will continue, while Iowa will also continue experiencing more significant drought in some areas.<sup>77</sup> The increased rain events are due to higher surface evaporation from a warmer world, while dry spells are due to reduced evaporation stemming from a lack of moisture.<sup>78</sup> In other words, changes in Iowa's climate will likely continue to make wet seasons wetter and dry seasons dryer.

Extreme rain events have caused significant flooding throughout Iowa, and with Iowa's over 70 interior rivers,<sup>79</sup> the flooding has adversely affected much of Iowa's population. Since 1990, Iowa has had over 30 presidentially declared flood-related disaster declarations.<sup>80</sup> The flooding has caused an estimated 13.5 billion dollars worth of property-related damage.<sup>81</sup> In 2016, a presidential declaration identified 19 counties affected by severe flooding, many of which were also hit hard by flooding in 2008.<sup>82</sup> In 2018 alone, 30 counties have already been identified in presidential disaster declarations due to severe storms and flooding.<sup>83</sup>

Heavy rainfall and melting snow have also led to significant flooding in Iowa's bordering Mississippi and Missouri Rivers. In 2011, the high level of the Mississippi River forced navigation closures and caused billions of dollars in damage downstream.<sup>84</sup> That same year,

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<sup>75</sup> *Iowa Climate Statement 2017*, CTR. FOR GLOBAL & REGIONAL ENVTL. RES., 1 (2017), [https://cgrer.uiowa.edu/sites/cgrer.uiowa.edu/files/wysiwyg\\_uploads/Iowa%20Climate%20Statement%202017\\_It's%20not%20just%20the%20heat,%20it's%20the%20humidity!\\_FINAL\\_August\\_10\\_2017.pdf](https://cgrer.uiowa.edu/sites/cgrer.uiowa.edu/files/wysiwyg_uploads/Iowa%20Climate%20Statement%202017_It's%20not%20just%20the%20heat,%20it's%20the%20humidity!_FINAL_August_10_2017.pdf).

<sup>76</sup> Iman Mallakpour & Gabriele Villarini, *The Changing Nature of Flooding Across the Central United States*, 5 NATURE CLIMATE CHANGE, 250, 250–54 (2015).

<sup>77</sup> *What Climate Change Means for Iowa*, EPA 1 (Aug. 2016), <https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-ia.pdf>.

<sup>78</sup> Chia Chou et al., *Increase in the Range Between Wet and Dry Season Precipitation*, 6 NATURE GEOSCIENCE, 263, 263–67 (2013).

<sup>79</sup> *Interior Rivers*, IOWA DEP'T OF NAT. RESOURCES, <http://www.iowadnr.gov/Fishing/Where-to-Fish/Interior-Rivers> (last visited Oct. 2, 2018).

<sup>80</sup> *Iowa Disaster History*, IOWA HOMELAND SECURITY & EMERGENCY MGMT., [https://www.homelandsecurity.iowa.gov/disasters/iowa\\_disaster\\_history.html](https://www.homelandsecurity.iowa.gov/disasters/iowa_disaster_history.html) (last visited Oct. 2, 2018).

<sup>81</sup> *Iowa Flood Center: For Legislators*, U. IOWA, <https://iowafloodcenter.org/resources/for-legislators/> (last visited Oct. 2, 2018).

<sup>82</sup> *Iowa Disaster History*, IOWA HOMELAND SECURITY & EMERGENCY MGMT., *supra*.

<sup>83</sup> *Id.*

<sup>84</sup> HENRY DEHAAN ET AL., USACE, MISS. VALLEY DIV., MISSISSIPPI RIVER AND TRIBUTARIES SYSTEM 2011 POST-FLOOD REPORT V-12 (2012).

flooding along the Missouri River led to hundreds of millions of dollars in damages<sup>85</sup> and also closed the river to navigation.<sup>86</sup> Iowa's Sioux City and Council Bluffs were two of the cities affected most by the flood, experiencing extensive property damage and crop loss.<sup>87</sup>

Iowa also has felt the impacts of climate change in its dry seasons. As recently as 2017, drought conditions throughout the state left locations with rainfall at less than 50 percent of normal precipitation.<sup>88</sup> In 2012, a prolonged drought cost the region more than \$250 million when the scarcity of water led to narrowed navigation channels, forced lock closures, and dozens of barges running aground on the Mississippi River.<sup>89</sup>

Iowa has warmed between one-half to one degree in the last century, and a continued increase in temperature may lead to more challenges for Iowa's agricultural economy.<sup>90</sup> Iowa leads the nation in egg production, harvested acreage of principal crops, corn export value, corn for grain production, and hog and pig inventory.<sup>91</sup> Climate change may put additional heat stress on farmers' crops and livestock, posing a greater risk of substantial decreases in crop yields and livestock productivity.<sup>92</sup> Under some estimates, absent significant adaptation by Iowa farmers, the state could face declines in its corn crop of 18-77 percent—a significant blow to a corn industry currently worth nearly \$10 billion.<sup>93</sup> Crop production can be inhibited by changing rain patterns such as wetter springs—which delay planting and increase flood risk—and less rain

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<sup>85</sup> DEP'T OF HOMELAND SEC., MISSOURI RIVER FLOOD COORDINATION TASK FORCE REPORT, 12, 39 (2011).

<sup>86</sup> David Bailey & David Hendee, *The Mighty Missouri River: The Flooding and the Damage Done*, (Sep. 3, 2011, 8:45 AM), <http://www.reuters.com/article/us-missouri-flooding/the-mighty-missouri-river-the-flooding-and-the-damage-done-idUSTRE78213720110903>.

<sup>87</sup> DEP'T OF HOMELAND SEC., MISSOURI RIVER FLOOD COORDINATION TASK FORCE REPORT, *supra*, at 39.

<sup>88</sup> Craig Cogil, *Extreme Drought Expands in Southern Iowa*, NAT'L WEATHER SERV. 1 (Sep. 18, 2017), <https://www.weather.gov/media/dmx/Climate/Drought.pdf>.

<sup>89</sup> U.S. ARMY CORPS OF ENG'RS, EVENT STUDY: 2012 LOW-WATER AND MISSISSIPPI RIVER LOCK 27 CLOSURES, 6–7, 37 (2013), [http://www.lrd.usace.army.mil/Portals/73/docs/Navigation/PCXIN/Drought\\_2012\\_Report\\_-\\_FINAL\\_2013-08-30.pdf](http://www.lrd.usace.army.mil/Portals/73/docs/Navigation/PCXIN/Drought_2012_Report_-_FINAL_2013-08-30.pdf); See Harry J. Hillaker, *The Drought of 2012 in Iowa*, IOWA DEP'T OF AGRIC. AND LAND STEWARDSHIP, <http://www.iowaagriculture.gov/climatology/weatherSummaries/2012/DroughtIowa2012Revised.pdf> (last visited Oct. 2, 2018).

<sup>90</sup> *What Climate Change Means for Iowa*, *supra*, at 1.

<sup>91</sup> *Iowa's Rank in United States Agriculture*, USDA (May 2018), [https://www.nass.usda.gov/Statistics\\_by\\_State/Iowa/Publications/Rankings/IA-2018-Rankings.pdf](https://www.nass.usda.gov/Statistics_by_State/Iowa/Publications/Rankings/IA-2018-Rankings.pdf).

<sup>92</sup> *What Climate Change Means for Iowa*, *supra*, at 2.; J. L. Hatfield et al., *Vulnerability of Grain Crops and Croplands in the Midwest to Climatic Variability and Adaptation Strategies*, 146 CLIMATIC CHANGE, 263, 263–64 (2018).

<sup>93</sup> Kate Gordon et al., *Heat in the Heartland: Climate Change and Economic Risk in the Midwest*, RISKY BUSINESS 33 (2015); <http://riskybusiness.org/site/assets/uploads/2015/09/RBP-Midwest-Report-WEB-1-26-15.pdf>

during the increasingly hot summers.<sup>94</sup> Farmers may also face the survival and spread of more unwanted pests because of warmer winters and a longer growing season.<sup>95</sup>

Climate change also puts Iowans' public health at risk. The higher temperatures can increase air pollutants such as ozone and fine particulates, which increase the risk of heart and lung-related illness.<sup>96</sup> Allergic diseases and asthma are expected to become more widespread and more severe due to exposure to new plants and increases in pollen counts.<sup>97</sup> The warmer, wetter climate can even increase the risk of infectious diseases transmitted by insects that will be better able to live in a more humid and warm Iowa environment.<sup>98</sup> Iowans' health risks will only likely increase as average temperatures continue to increase.

## **Maine**

Maine is experiencing significant, negative effects of climate change through rising sea levels, ocean acidification, and invasive species that are expanding their range northward as the environment warms. By way of example, The Gulf of Maine is warming faster than 99% of the world's ocean waters.<sup>99</sup> These warmer waters have brought with them an invasion of non-native green crabs that are devastating soft-shell clam flats throughout southern and mid-coast Maine.<sup>100</sup> At the same time, ocean waters globally have become approximately 30% more acidic over the last century, and features of the Gulf of Maine, including its extensive freshwater inputs, make it particularly vulnerable to acidification.<sup>101</sup> The increasing acidity inhibits shell formation in all shellfish, including lobsters, which just five years ago were the basis of an industry estimated to be worth \$1.7 billion in Maine.<sup>102</sup> These symptoms of climate change threaten both the health of the State's marine ecosystem and a coastal economy that depends on it.

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<sup>94</sup> *What Climate Change Means for Iowa*, *supra*, at 1.

<sup>95</sup> Sara C. Pryor et al., *Midwest*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES: THE THIRD NATIONAL CLIMATE ASSESSMENT 418, 435 (J. M. Melillo et al. eds., 2014).

<sup>96</sup> *What Climate Change Means for Iowa*, *supra*, at 2.

<sup>97</sup> *Climate Change*, IOWA DEP'T OF NAT. RESOURCES, <http://www.iowadnr.gov/Conservation/Climate-Change> (last visited Oct. 2, 2018).

<sup>98</sup> *Id.*

<sup>99</sup> Woodard, C., *Mayday: Gulf of Maine in Distress*, Portland Press Herald, October 25, 2015, <http://www.pressherald.com/2015/10/25/climate-change-imperils-gulf-maine-people-plants-species-rely/>

<sup>100</sup> *Id.*

<sup>101</sup> Gledhill, D.K., et al., Ocean and Coastal Acidification off New England and Nova Scotia. *Oceanography* 28(2):182–197, 2015, <http://dx.doi.org/10.5670/oceanog.2015.41> <https://climate.nasa.gov/evidence/>; <http://tos.org/oceanography/article/ocean-and-coastal-acidification-off-newengland-and-nova-scotia>.

<sup>102</sup> *Id.*; Dahlman, L, *Climate Change, Ocean Heat Content*, National Oceanic and Atmospheric Administration, <https://www.climate.gov/news-features/climate-and/climate-lobsters>; Hall, J., *From Bought to Caught, Lobsters all about Economics*, Portland Press Herald, August 11, 2012, [http://www.pressherald.com/2012/08/11/market-forces-make-everyone-feel-the-pinch\\_2012-08-12/](http://www.pressherald.com/2012/08/11/market-forces-make-everyone-feel-the-pinch_2012-08-12/).

Similar changes are occurring in Maine's interior. Iconic species that drive the State's tourist economy are suffering from the effects of global warming. Longer, hotter summers and more frequent droughts are shrinking brook trout habitat<sup>103</sup> and undermining efforts to restore sea-run salmon in Maine's downeast rivers.<sup>104</sup> A plague of winter ticks brought on by decreased snowpack has taken a significant toll on Maine's moose population.<sup>105</sup> Milder winters have also hurt the ski industry,<sup>106</sup> while shorter and earlier springs are interfering with maple sugaring operations.<sup>107</sup>

## **Maryland**

With more than 3,000 miles of coastline, Maryland's coast is particularly vulnerable to rising sea levels and the more extreme weather events associated with climate change: shoreline erosion, coastal flooding, storm surges, inundation, and saltwater intrusion into groundwater supplies.

In 2007, the Maryland Commission on Climate Change (MCCC) was established by Executive Order 01.01.2007.07 and was charged with evaluating and recommending state goals to reduce Maryland's greenhouse gas emissions to 1990 levels by 2020 and to reduce those emissions to 80 percent of their 2006 levels by 2050. The MCCC was also tasked with developing a plan of action that addressed the causes and impacts of climate change and included firm benchmarks and timetables for policy implementation. As a result of the work of more than 100 stakeholders and subject matter experts, the MCCC produced a climate action plan. That plan was the impetus for Maryland's Greenhouse Gas Emissions Reduction Act of 2009, an enhanced version of which became law in 2016.<sup>108</sup>

As emphasized by the MCCC's Science and Technical Working Group, estimates show that "Maryland is projected to experience between 2.1 and 5.7 feet of sea level rise over the next

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<sup>103</sup> Pennsylvania State University, *For Trout Fishermen, Climate Change Will Mean More Driving Time, Less Angling*, ScienceDaily, August 20, 2015, [www.sciencedaily.com/releases/2015/08/150820123648.htm](http://www.sciencedaily.com/releases/2015/08/150820123648.htm).

<sup>104</sup> The National Academies Press, *Atlantic Salmon in Maine*, 2004, at 50-53, <https://www.nap.edu/read/10892/chapter/5>.

<sup>105</sup> Fleming, D., *Winter Ticks Raise Concerns about the Future of Maine's Moose Herd*, Portland Press Herald, June 14, 2014, <http://www.pressherald.com/2014/06/14/winter-ticks-raise-concerns-about-future-of-maines-moose-herd/>.

<sup>106</sup> Seelye, K., *Rising Temperatures Threaten Fundamental Change for Ski Slopes*, The New York Times, December 12, 2012, <http://www.nytimes.com/2012/12/13/us/climate-change-threatens-ski-industrys-livelihood.html>.

<sup>107</sup> Taylor, C., *How Climate Change Threatens Your Breakfast*, Science Friday, March 17, 2017, <https://www.sciencefriday.com/segments/how-climate-change-threatens-your-breakfast/>.

<sup>108</sup> Maryland Commission on Climate Change, 2016 Annual Report 7, [http://mde.maryland.gov/programs/Air/ClimateChange/MCCC/Documents/MCCC\\_2016\\_final.pdf](http://mde.maryland.gov/programs/Air/ClimateChange/MCCC/Documents/MCCC_2016_final.pdf) ("MCCC 2016 Annual Report").



century. In fact, sea level could be as much as 2.1 feet higher in 2050 along Maryland's shorelines than it was in 2000."<sup>109</sup>

Sea level rise could inundate some facilities of the Port of Baltimore, placing one of the most important ports along the East Coast at risk. In 2016, for instance, the Port generated nearly \$3 billion in wages and salaries, supported over 13,000 direct jobs, and moved 31.8 million tons of international cargo.<sup>110</sup>

The state's tourism sector is also likely to feel the impact of climate change.<sup>111</sup> In 2015, for instance, tourism resulted in \$2.3 billion in tax revenue, which directly supported more than 140,000 jobs with a payroll of \$5.7 billion.<sup>112</sup> Rising sea levels, flooding, and heightened storm surges will place further strain on Maryland's low-lying urban and coastal lands, making tourism less feasible and increasing the costs of maintaining bridges, roads, boardwalks, and other tourism infrastructure.<sup>113</sup> Beaches, moreover, "will move inland at a rate 50 to 100 times faster than the rate of sea level elevation" and "the cost of replenishing the coastline after a 20-inch rise in sea level would be between \$35 million and \$200 million."<sup>114</sup>

Further, skiing and other snow sports "are at obvious risk from rising temperatures, with lower-elevation resorts facing progressively less reliable snowfalls and shorter seasons."<sup>115</sup> Wisp Mountain Park, for example, is a popular skiing destination in Western Maryland, and the only ski resort in the State. Even in late December of 2015, only one of the resort's 35 trails was open because of the difficulty keeping snow on the ground in above-freezing temperatures.<sup>116</sup>

Climate change may also adversely impact Maryland's agricultural industry, which employs some 350,000 people.<sup>117</sup> In 2015, the market value of agricultural products produced in Maryland was \$2.2 billion, with net farm income exceeding \$500 million.<sup>118</sup> By 2050, absent

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<sup>109</sup> Maryland Commission on Climate Change, 2015 Annual Report 13, <http://mde.maryland.gov/programs/Air/ClimateChange/MCCC/Publications/MCCC2015Report.pdf> ("MCCC 2015 Annual Report").

<sup>110</sup> Maryland Commission on Climate Change, 2017 Annual Report 12, [http://www.mde.state.md.us/programs/Air/ClimateChange/MCCC/Documents/MCCC\\_2017\\_final.pdf](http://www.mde.state.md.us/programs/Air/ClimateChange/MCCC/Documents/MCCC_2017_final.pdf) ("MCCC 2017 Annual Report").

<sup>111</sup> Center for Climate and Energy Solutions, Cost of Inaction Supplement, September 2015, <https://www.c2es.org/document/climate-change-the-cost-of-inaction-for-marylands-economy/>.

<sup>112</sup> Maryland Office of Tourism Development, Fiscal Year 2016 Tourism Development Annual Report, 2016, available at: <http://industry.visitmaryland.org/research/annual-reports/annual-reports-archive/>.

<sup>113</sup> MCCC 2015 Annual Report 14, *supra*.

<sup>114</sup> MCCC 2017 Annual Report 16, *supra*.

<sup>115</sup> MCCC 2016 Annual Report 18-19, *supra*.

<sup>116</sup> MCCC 2017 Annual Report 15, *supra*.

<sup>117</sup> *Id.* at 13.

<sup>118</sup> *Id.* at 14.

additional action, rising summer temperatures could result in nearly \$150 million in median annual losses for corn, soy, and wheat.<sup>119</sup> Increased flooding could adversely affect the stability, salinity, drainage, and nutrient balance of soil in low-lying areas, causing declines in crop production and making farming less viable. Rising seas could lead salt water to flow into aquifers used for irrigation. Livestock could suffer from higher temperatures, too, and would need more access to cooler areas. By causing soil erosion and nutrient runoff, moreover, increased rainfall could adversely affect water quality, including in the Chesapeake Bay.<sup>120</sup>

Climate change will have significant effects on forests, which contribute some \$2.2 billion to the Maryland economy, as well as \$24 billion in ecological services.<sup>121</sup> Climate change will exacerbate species' existing stressors and alter their distribution, with some species likely to leave or decline and others likely to arrive or increase. Further, the services that forests provide—such as temperature regulation and water filtration—may be affected by climate change.<sup>122</sup>

Climate change also threatens the Chesapeake Bay, the largest estuary in the United States. Development and pollution have made the Bay and its ecosystems more vulnerable to stressors, including those resulting from climate change. Already, the Bay has warmed by three degrees Fahrenheit. Further temperature increases could change the composition of commercial fisheries and deprive aquatic life of the oxygen needed to survive. Some species are likely to move north towards cooler waters and more suitable habitats. Other forms of aquatic life, including invasive pests and diseases, are likely to arrive or proliferate in the Bay's newly-warmed waters.<sup>123</sup>

In terms of health impacts, Maryland is likely to experience increasing numbers of 90-degree days, markedly exacerbating heat-related illnesses and mortality, particularly among the elderly.<sup>124</sup> A two-week heat wave in 2012, for instance, led to 12 deaths in Maryland.<sup>125</sup> By mid-century, rising temperatures could cause 27 additional deaths each summer in Baltimore alone.<sup>126</sup>

## **Massachusetts**

Temperatures in Massachusetts have warmed by an average of 1.3 degrees Celsius since 1895, almost twice as much as the rest of the contiguous 48 states. According to recent research

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<sup>119</sup> MCCC 2015 Annual Report 15, *supra*.

<sup>120</sup> *Id.*

<sup>121</sup> *Id.*

<sup>122</sup> *Id.* at 15-16.

<sup>123</sup> *Id.* at 16.

<sup>124</sup> MCCC 2017 Annual Report 9, 17, *supra*.

<sup>125</sup> MCCC 2016 Annual Report 18-19, *supra*.

<sup>126</sup> *Id.*

by the University of Massachusetts, the Northeast, including Massachusetts, will continue to see temperatures rise higher more quickly than the rest of the United States and the world.<sup>127</sup>

Rising temperatures will result in milder winters with more freeze-thaw cycles and less precipitation falling as snow and instead as rain and freezing rain. Hotter summers will increase the number, intensity, and duration of heat waves and lead to poorer air quality.<sup>128</sup> Massachusetts already has the nation's highest incidence of pediatric asthma: among Massachusetts children in kindergarten to eighth grade, more than 12 percent suffer from pediatric asthma, and 12 percent of Massachusetts's adult population suffers from asthma.<sup>129</sup> Warmer temperatures increase ground level ozone, which impairs lung function and can result in increased hospital admissions and emergency room visits for people suffering from asthma, particularly children. Higher temperatures and carbon dioxide levels also will cause plants to produce more pollen, which can exacerbate asthma and other respiratory illnesses. More extreme heat also presents health hazards for people, including increased cardiovascular disease, Type II diabetes, renal disease, nervous disorders, emphysema, epilepsy, cerebrovascular disease, pulmonary conditions, mental health conditions, and death—especially for our most vulnerable residents.

The Northeast has seen the country's largest increases in heavy precipitation events (more than a 70-percent increase in the heaviest 1 percent of all events since 1958).<sup>130</sup> Some areas in Massachusetts have shown an increasing trend in the number of days with two inches of precipitation or more from 1970-2008. For example, over the last 60 years, the Connecticut River basin has experienced more than a doubling of heavy rainfall events. Regionally, the majority of heavy precipitation events have occurred during the summer months of May through September.<sup>131</sup> One hundred-year flood events are now occurring every 60 years, and 50-year floods are now occurring approximately every 30 years. Flooding has increased in association with extreme precipitation events, causing costly property damage and putting fish, wildlife, and their habitats at increased risk. Since 1990, Massachusetts has been affected by numerous major weather disasters, including Superstorm Sandy and Tropical Storm Irene.<sup>132</sup> Superstorm Sandy, a post-tropical storm in 2012, was the most extreme and destructive event to affect the

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<sup>127</sup> Horton et al., *Northeast*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES: THE THIRD NATIONAL CLIMATE ASSESSMENT, 373 (2014), at <http://nca2014.globalchange.gov/report/regions/northeast>; see also EPA, Fact Sheet: What Climate Change Means for Massachusetts (Aug. 2016), at <https://ia801602.us.archive.org/9/items/climate-change-ma/climate-change-ma.pdf>.

<sup>128</sup> Massachusetts Department of Public Health, *Capacity to Address the Health Impacts of Climate Change in Massachusetts*, 6 (April 2014), at <http://www.mass.gov/eohhs/docs/dph/environmental/exposure/climate-change-report-2014.pdf>.

<sup>129</sup> *Id.*; Centers for Disease Control and Prevention, 2014 Adult Asthma Data: Prevalence Tables and Maps, at <https://www.cdc.gov/asthma/brfss/2014/tableC1.htm>; Massachusetts Department of Public Health, Pediatric Asthma, at <https://matracking.ehs.state.ma.us/Health-Data/Asthma/pediatric.html>.

<sup>130</sup> Horton, *supra*, at 373.

<sup>131</sup> Massachusetts Climate Action Partnership, *Massachusetts Wildlife Climate Action Tool – Stressors: Storms and floods* (2015), at <https://climateactiontool.org/content/storms-and-floods>.

<sup>132</sup> Runkle et al., *Massachusetts State Summary*, NOAA TECHNICAL REPORT NESDIS 149-MA, 4 (2017), at <https://statesummaries.ncics.org/MA>.

northeastern United States in 40 years and the second costliest in the Nation's history. Storm impacts in Massachusetts included strong winds, record storm tide heights, flooding of some coastal areas and loss of power for 385,000 residents.<sup>133</sup> Massachusetts suffered an estimated \$375 million in property losses alone.<sup>134</sup> In January 2018, the storm surge from a powerful winter storm caused major coastal flooding and resulted in a high tide in Boston of 15.16 feet, the highest tide since records began in 1921, even surpassing the infamous Blizzard of 1978.<sup>135</sup> And two months later, a March coastal storm resulted in a 14.67 foot Boston tide (the third-highest on record<sup>136</sup>), damaged 2,113 homes, including 147 that were destroyed, and caused more than \$24 million in flooding damage across six Massachusetts coastal counties.<sup>137</sup>

Beyond the damage that more intense storms can cause homes, businesses, and private and public infrastructure generally, such events also threaten the aging combined sewer and stormwater systems serving many Massachusetts cities such as Boston and Lowell. Heavy precipitation and coastal flooding can overwhelm these systems and release untreated sewage to our rivers and coastal waters, threatening public health and water quality.<sup>138</sup>

Massachusetts is a coastal state especially vulnerable to sea level rise caused by climate change, which is already exacerbating coastal flooding and erosion from storm events and will eventually inundate low-lying communities, including the City of Boston. Roughly 5 million Massachusetts residents—75% of the state's population—live near the coast.<sup>139</sup> The total output of the Massachusetts coastal economy was \$249.2 billion in 2014, representing over 54% of the state's annual gross domestic product, and coastal counties accounted for 53% of the state's employment and wages.<sup>140</sup> According to the National Climate Assessment, in Boston alone, cumulative damage to buildings, building contents, and associated emergency costs could

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<sup>133</sup> *Id.*

<sup>134</sup> *Id.*

<sup>135</sup> Martin Finucane, *It's official: Boston breaks tide record*, BOSTON GLOBE, Jan. 5, 2017, at <https://www.bostonglobe.com/metro/2018/01/05/official-boston-breaks-tide-record/UPbwDxgF0QXNOWvB9bcQ7L/story.html>.

<sup>136</sup> Christina Prignano, *The Noon High Tide Was Bad, but the Midnight High Tide Could Be Worse*, BOSTON GLOBE, March 2, 2018, at <https://www.bostonglobe.com/metro/2018/03/02/the-noon-high-tide-was-bad-but-midnight-high-tide-will-worse/m4O1PR8HRIoLsmx3mp2YvO/story.html>.

<sup>137</sup> Christian M. Wade, *Baker Seeks Federal Disaster Funds for Storm Damages*, LAWRENCE EAGLE-TRIBUNE, May 1, 2018, at [https://www.eagletribune.com/news/merrimack\\_valley/baker-seeks-federal-disaster-funds-for-storm-damages/article\\_d2f0c7b4-bd75-5a8b-8a0c-4dedbe44a7b4.html](https://www.eagletribune.com/news/merrimack_valley/baker-seeks-federal-disaster-funds-for-storm-damages/article_d2f0c7b4-bd75-5a8b-8a0c-4dedbe44a7b4.html).

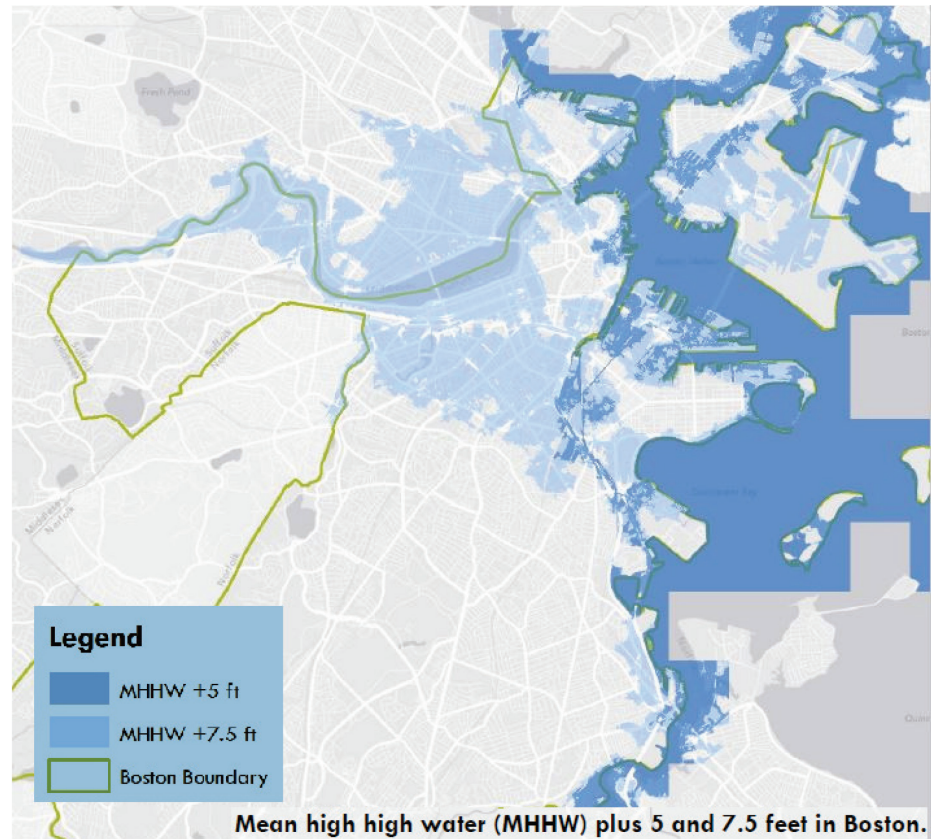
<sup>138</sup> City of Boston, *Climate Ready Boston, Final Report*, 290 (December 2016), at [https://www.boston.gov/sites/default/files/20161207\\_climate\\_ready\\_boston\\_digital2.pdf](https://www.boston.gov/sites/default/files/20161207_climate_ready_boston_digital2.pdf).

<sup>139</sup> NOAA, National Coastal Population Report, 9 (2013), at <https://aamboceanservice.blob.core.windows.net/oceanservice-prod/facts/coastal-population-report.pdf>.

<sup>140</sup> NAT'L OCEAN ECONOMICS PROGRAM, STATE OF THE U.S. OCEAN AND COASTAL ECONOMIES: COASTAL STATES SUMMARIES – 2016 UPDATE 29 (2016), at [http://midatlanticocean.org/wp-content/uploads/2016/03/CoastalStatesSummaryReports\\_2016.pdf](http://midatlanticocean.org/wp-content/uploads/2016/03/CoastalStatesSummaryReports_2016.pdf)

potentially be as high as \$94 billion between 2000 and 2100, depending on the sea level rise scenario and which adaptive actions are taken.<sup>141</sup>

Increased sea level, combined with increased erosion rates, is also predicted to threaten Massachusetts' barrier beach and dune systems. Development on the beaches themselves, as in the case of Plum Island, will continue to face challenges associated with erosion and storm damage. Barrier beaches will be more susceptible to erosion and overwash, and in some cases breaching. Such breaching will put at risk extensive areas of developed shoreline located



behind these barrier spits and islands, such as the shorelines of Plymouth, Duxbury, and Kingston. Engineered structures, such as seawalls designed to stabilize shorelines, could be overtopped. The cost of maintaining and upgrading these engineering structures and replenishing dunes and beaches damaged by erosion will increase as sea levels rise, requiring investments of millions of dollars by local governments.<sup>142</sup> Large areas of critical coastal and estuarine habitat, including the North Shore's Great Marsh—the largest continuous stretch of salt marsh in New England, extending from Cape Ann to New Hampshire—are at risk as they will be unable to adapt and migrate as sea level rises and local land subsides.<sup>143</sup>

Massachusetts already is seeing what climate change means for our natural resources. The signs of spring—including the arrival of migratory birds and the blooming of wildflowers and other plants—are arriving earlier. Warmer temperatures also are contributing to the rise in

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<sup>141</sup> Horton, *supra*, at 379.

<sup>142</sup> For one example, a recent, large-scale beach replenishment project in Winthrop, Massachusetts secured \$26 million in state funds for completion. See Beth Daley, *Sand Wars Come to New England*, BOSTON GLOBE, (Dec. 15, 2013), available at <https://www.bostonglobe.com/lifestyle/health-wellness/2013/12/15/sand-wars-come-new-england-coast/F2CIK6e20wtcZeCoUQC9AM/story.html>.

<sup>143</sup> City of Boston, *Climate Ready Boston*, *supra*, at 60.



deer populations in Massachusetts, resulting in loss of underbrush habitat for forest species and the spread of tick-borne diseases such as Lyme disease. As the Gulf of Maine is warming much faster than other water bodies, key cold-water ocean fisheries, including cod and lobster, are in decline. The timing of the migration of anadromous fish species, such as Atlantic salmon and alewives, has advanced in the last few decades, and they are migrating earlier in the season.<sup>144</sup>

### **New Jersey**

New Jersey's coastal geomorphology – its sandy beaches, flat coastal plain with a gradually sloping shoreline, low-lying barrier islands, and gradual subsidence – makes the risks of sea level rise from global warming particularly severe in the state. New Jersey's nearly 1,800 miles of tidally-flowed shoreline, its 239 coastal communities, and its 2 million coastal county residents, are especially vulnerable to flooding, inundation, and erosion from sea level rise and the effects of stronger, fiercer storms.<sup>145</sup> New Jersey has been ranked as one of the most threatened states in terms of the value of coastal real estate at risk from sea level rise and chronic flooding in the coming decades.<sup>146</sup> Rising sea levels also endanger water supplies as saltwater intrusion of New Jersey's coastal and lower Delaware River aquifers increases water salinity above drinking standards.<sup>147</sup>

Sea levels in New Jersey are already rising by an average of 1.6 inches per decade, almost double the global rate.<sup>148</sup> USEPA has projected that the global warming will cause sea levels to rise an additional 18 inches to 4 feet in New Jersey by 2100.<sup>149</sup> Further sea level rise of

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<sup>144</sup> EPA, Fact Sheet: What Climate Change Means for Massachusetts, *supra*; Massachusetts Climate Action Partnership, *supra* note 99, *Ecology and Vulnerability: Alewife*, at <http://climateactiontool.org/species/alewife>.

<sup>145</sup> Small-Lorenz, S., Shadel, B. and Glick, P., *Building Ecological Solutions to Coastal Community Hazards: A Guide for New Jersey Coastal Communities* (2017), at 10, available at <https://www.nj.gov/dep/oclp/docs/bescch-final.pdf> (last accessed October 17, 2018); Union of Concerned Scientists (UCS), *New Jersey: Confronting Climate Change in the U.S. Northeast* (2007), at 2, available at [https://www.state.nj.us/dep/cleanair/hearings/pdf/09\\_confronting.pdf](https://www.state.nj.us/dep/cleanair/hearings/pdf/09_confronting.pdf) (last accessed October 21, 2018).

<sup>146</sup> Union of Concerned Scientists, *Underwater: Rising Seas, Chronic Floods, and the Implications for US Coastal Real Estate* (June 2018), at 5-7, 10-11, available at <https://www.ucsusa.org/sites/default/files/attach/2018/06/underwater-analysis-full-report.pdf> (last accessed October 23, 2018).

<sup>147</sup> NJ Climate Adaptation Alliance, *A Summary of Climate Change Impacts and Preparedness Opportunities for the Water Resources Sector in New Jersey* (March 2014), at 5, available at <https://njadapt.rutgers.edu/docman-lister/resource-pdfs/98-njcaa-water/file> (last accessed October 21, 2018).

<sup>148</sup> NOAA National Centers for Environmental Information, *State Climate Summaries: New Jersey*, available at <https://statesummaries.ncics.org/nj> (last accessed October 15, 2018).

<sup>149</sup> USEPA, *What Climate Change Means for New Jersey*, EPA 430-F-16-032 (August 2016), available at <https://www.epa.gov/sites/production/files/2016-09/documents/climate-change-nj.pdf> (last

even 12 inches could cause shorelines to recede by as much as 120 feet.<sup>150</sup> Barrier islands on the state's Atlantic Coast from Bay Head to Cape May could be broken up by new inlets or lost to erosion if sea level rises three feet by 2100.<sup>151</sup> And up to 3 percent of New Jersey's land area could be inundated by four-foot sea level rise,<sup>152</sup> which would affect countless homes, businesses, hospitals, schools, and critical infrastructure.

These effects of sea level rise are magnified during storm events, which increase the severity of coastal flooding and erosion. For example, in 2012, Superstorm Sandy wreaked havoc in the state when a storm surge reached 9-10 feet above normal in some coastal areas. The extensive damage the State experienced from severe winds and coastal flooding reached an estimated \$29.4 billion in repair, response and restoration costs.<sup>153</sup> Sandy also cost the state an estimated \$11.7 billion in lost gross domestic product, including \$950 million in tourism losses.<sup>154</sup> Sandy had a catastrophic effect on regional electric and wastewater infrastructure: 73% of the state's electric customers experienced outages<sup>155</sup> and the state's largest treatment plant was inundated and dumped 240 million gallons of sewage into the Newark Bay.<sup>156</sup>

Sea level rise and coastal flooding also threaten to obliterate New Jersey's extensive coastal wetlands. Its tidal marshes are one of the state's defining features, valuable as a buffer for back-bay communities against erosion and tidal flooding, and as wildlife habitat. The state's coastal wetlands are an important stopover point for about 1.5 million migratory birds, including rare and endangered species like the red knot, and the Delaware Bay's tidal shores are the breeding grounds for the world's largest population of horseshoe crabs.<sup>157</sup>

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accessed October 17, 2018).

<sup>150</sup> Small-Lorenz et al., *Building Ecological Solutions*, supra, n.1, at 16.

<sup>151</sup> USEPA, *What Climate Change Means for New Jersey*, supra, n.5, at 1.

<sup>152</sup> Small-Lorenz et al., *Building Ecological Solutions*, supra, n.1, at 12.

<sup>153</sup> NOAA, *New Jersey Climate Summary*, supra, n.4.

<sup>154</sup> NJ Climate Adaptation Alliance, *Summary of Climate Change Impacts and Preparedness Opportunities for the Coastal Communities* (April 2014), at 5, available at <https://njadapt.rutgers.edu/docman-lister/working-briefs/108-njcaa-coastal-communities/file> (last accessed October 21, 2018).

<sup>155</sup> NJ Climate Adaptation Alliance, *Summary of Climate Change Impacts and Preparedness Opportunities for Telecommunications and Energy Utilities* (March 2014), at 5-6, available at <https://njadapt.rutgers.edu/docman-lister/resource-pdfs/97-njcaa-utilities/file> (last accessed October 21, 2018).

<sup>156</sup> NJ Climate Adaptation Alliance, *Summary of Climate Change Impacts and Preparedness Opportunities for the Water Resources Sector* (March 2014), at 5, available at <https://njadapt.rutgers.edu/docman-lister/resource-pdfs/98-njcaa-water/file> (last accessed October 21, 2018).

<sup>157</sup> NJ Climate Adaptation Alliance, *Summary of Climate Change Impacts and Preparedness Opportunities Affecting Natural Resources* (March 2014), at 1, available at

With more frequent and intense storms and accelerated sea level rise, tidal flats and marshes could become open water, jeopardizing species that entirely depend on this ecosystem to feed and nest. In Barnegat Bay and Little Egg Harbor, the rising sea is already eroding and submerging small marsh islands, which are important nesting areas for many seabirds. USEPA found that the salt marshes all along the Atlantic Coast between Cape May and the Meadowlands could be entirely displaced by sea level rise of three feet. Coastal wetlands along Delaware Bay in Cumberland County are more vulnerable still and could be lost if the sea rises by only two feet.<sup>158</sup>

## **New York**

New York has begun to experience adverse effects from climate change. In 2014, the New York Attorney General's Office released a report, *Current and Future Trends in Extreme Rainfall Across New York State*, which highlights dramatic increases in the frequency and intensity of extreme rain storms across New York.<sup>159</sup> As but one example, devastating rainfall from Hurricane Irene in 2011 dropped more than 11 inches of rain in just 24 hours, causing catastrophic flooding in the Hudson Valley, eastern Adirondacks, Catskills and Champlain Valley. Thirty-one counties were declared disaster areas. Over 1 million people were left without power, more than 33,000 had to seek disaster assistance, and 10 were killed. Damage estimates totaled \$1.3 billion. While no individual storm can be tied to climate change, the trends in extreme rainfall already being felt across New York State are consistent with scientists' predictions of new weather patterns attributable to climate change.

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<https://njadapt.rutgers.edu/docman-lister/working-briefs/106-njcaa-natural-resources/filehttps://njadapt.rutgers.edu/docman-lister/resource-pdfs/97-njcaa-utilities/file> (last accessed October 21, 2018).

<sup>158</sup> USEPA, *What Climate Change Means for New Jersey*, supra, n.5, at 2.

<sup>159</sup> *Current & Future Trends in Extreme Rainfall Across New York State, A Report from the Environmental Protection Bureau of the New York State Attorney General* (Sept. 2014) (based on data from the 2014 National Climate Assessment and the National Oceanographic and Atmospheric Administration's Northeast Regional Climate Center), available at: [https://ag.ny.gov/pdfs/Extreme\\_Precipitation\\_Report%209%202%2014.pdf](https://ag.ny.gov/pdfs/Extreme_Precipitation_Report%209%202%2014.pdf)



## Hurricane Irene Flooding



Image from ABC 7 Eyewitness News

Similarly, in August 2014, a weather front stalled over Long Island, dumping more than 13½ inches of rain—nearly an entire summer’s worth—in a matter of hours and breaking the state’s rainfall record. That deluge flooded out over 1,000 homes and businesses, opened massive sinkholes on area roadways, and forced hundreds to evacuate to safer ground. Initial damage estimates exceeded \$30 million.

## Historic Long Island Flash Flooding

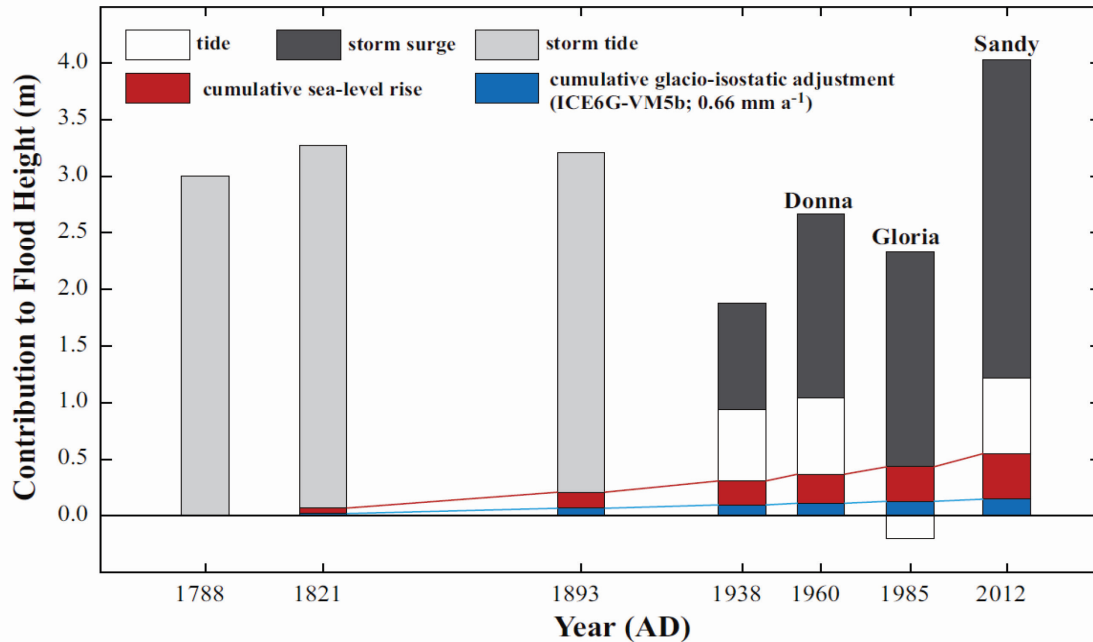


Image from NYTimes (Andrew Theodorakis/Getty Images)

Also, New York's rate of sea level rise is much higher than the national average and could account for up to 6 feet of additional rise by 2100 if greenhouse gas emissions are not abated. Storm surge on top of high tide on top of sea level rise is a recipe for disaster for coastal New York. The approximately 12 inches of sea level rise New York City has experienced since 1900 may have expanded Hurricane Sandy's flood area by about 25 square miles, flooding the homes of an additional 80,000 people in the New York City area alone.<sup>160</sup> That flooding devastated areas of New York City, including the Brooklyn-Queens Waterfront, the East and South Shores of Staten Island, South Queens, Southern Manhattan, and Southern Brooklyn, which in some areas lost power and other critical services for extended periods of time.

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<sup>160</sup> New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms. Ann. N.Y. Acad. Sci. ISSN 0077-8923, available at: <http://onlinelibrary.wiley.com/doi/10.1111/nyas.12593/full>



**Estimated Contribution to Flood Heights in New York City  
for Notable Historical Hurricanes<sup>161</sup>**

Hurricane Sandy exposed critical weaknesses in the resilience of New York's utility infrastructure, the danger that this weakness poses to New Yorkers, and the collateral damage to the economy:

- Almost 2 million utility customers suffered from electricity outages;
- Tens of thousands of utility customers were left without power for weeks;
- Hospitals were shut down and patients displaced;
- Many drinking water utilities lost power, which disrupted their ability to provide safe water; and sewage treatment plants could not operate, resulting in billions of gallons of untreated or partially treated sewage flowing into local waterways.

The costs of Hurricane Sandy to New York alone will likely top \$40 billion, including \$32.8 billion to repair and restore damaged housing, parks and infrastructure and to cover economic losses and other expenses. That figure includes \$9.1 billion to help mitigate and prevent potential damages from future severe weather events.<sup>162</sup>

Of course, sea level rise will not stop in 2100, nor in 2200 especially if a high GHG emission scenario continues, resulting in locked-in or "committed" sea level rise over hundreds or thousands of years, drastically altering New York's coastline and disrupting our

<sup>161</sup> Kemp et al., Contribution of relative sea-level rise to historical hurricane flooding in New York City, *Journal of Quaternary Science* 28(6), at 537-541 (2013).

<sup>162</sup> See State of New York, *Governor Cuomo Holds Meeting with New York's Congressional Delegation, Mayor Bloomberg and Regional County Executives to Review Damage Assessment for the State in the Wake of Hurricane Sandy*, available at: <https://www.governor.ny.gov/news/governor-cuomo-holds-meeting-new-yorks-congressional-delegation-mayor-bloomberg-and-regional>



communities.<sup>163</sup> The figure below<sup>164</sup> illustrates the inundation in portions of New York City resulting from the committed sea level rise expected from 4°C (7.2°F) of warming.<sup>165</sup> Note that in the ongoing rulemaking for the Safe Vehicles Rule, the National Highway Traffic Safety Administration has determined that taking no policy actions to reduce CO2 emissions will cause global surface temperature in 2100 to increase to 3.48°C<sup>166</sup>, close to the 4°C warming represented in the figure.



Although New York has taken a number of actions to reduce pollutants such as nitrogen oxides and volatile organic compounds that contribute to ground level ozone (smog) formation, ozone pollution remains a persistent problem. Much of New York City and Long Island have not attained the 2008 ozone standards, much less the more protective 2015 standards. A significant amount of the pollutants that contribute to smog is generated in upwind states and carried by prevailing winds into New York and other northeastern states. As the climate warms, increased temperatures create more favorable conditions for the formation of smog. According to the Third National Assessment on Climate Change, for example, under a scenario in which greenhouse

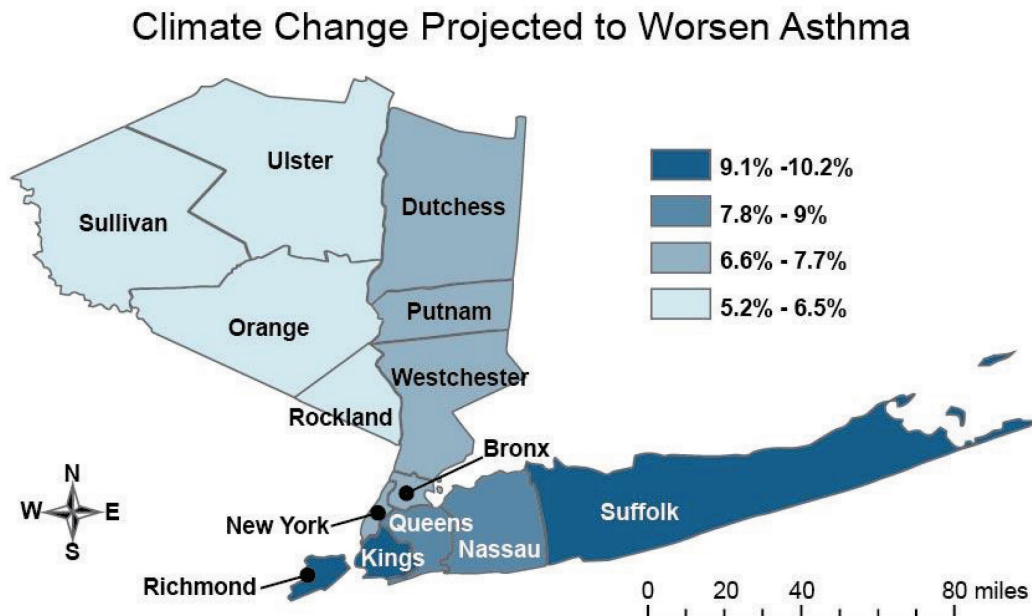
<sup>163</sup> U.S. Global Change Research Program, 2014 National Climate Assessment, at 345.

<sup>164</sup> Data file available at <http://sealevel.climatecentral.org/maps/google-earth-video-global-cities-at-risk-from-sea-level-rise>

<sup>165</sup> Carbon choices determine US cities committed to futures below sea level. Strauss, B.H., S. Kulp, and A. Levermann. PNAS November 3, 2015 112 (44) 13508-13513, *available at* <https://doi.org/10.1073/pnas.1511186112>

<sup>166</sup> Draft Environmental Impact Statement for the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021–2026 Passenger Cars and Light Trucks. NHTSA. July 2018. Docket No. NHTSA-2017-0069. 500 pp.

gases continue to increase, this would lead to higher ozone concentrations in the New York metropolitan region, driving up the number of ozone-related emergency room visits for asthma in the area by 7.3 percent--more than 50 additional ozone-related emergency room visits per year in the 2020s, compared to the 1990s.<sup>167</sup> The figure below, included in that report, shows that projected worsening in asthma cases in the New York City area.



## **Oregon**

Oregon is already experiencing adverse impacts of climate change and these impacts are expected to become more pronounced in the future, significantly affecting Oregon's economy and environment:

### **Loss of Snowpack and Drought**

The seasonal flow cycles of rivers and streams are changing due to warmer winters and decreased mountain snowpack accumulation, as more precipitation falls as rain, not snow.<sup>168</sup>

<sup>167</sup> U.S. Global Change Research Program, *2014 Third National Assessment on Climate Change*, at 222 (citing Sheffield, P. E., J. L. Carr, P. L. Kinney, and K. Knowlton, Modeling of regional climate change effects on ground level ozone and childhood asthma. *American Journal of Preventive Medicine*, 41, 251-257 (2011), available at <http://download.journals.elsevierhealth.com/pdfs/journals/0749-3797/PIIS0749379711003461.pdf>)

<sup>168</sup> P. Zion Klos et al., *Extent of the Rain-Snow Transition Zone in the Western U.S. Under Historic and Projected Climate*, 41 *Geophysical Res. Letters* 4560, 4560–68 (2014).

The Third Oregon Climate Assessment Report<sup>169</sup> explained that events in 2015 demonstrated the kind of impacts this is has already had, and will have in the future:

In 2015, Oregon was the warmest it has ever been since record keeping began in 1895 (NOAA, 2017). Precipitation during the winter of that year was near normal, but winter temperatures that were 5–6°F above average caused the precipitation that did fall to fall as rain instead of snow, reducing mountain snowpack accumulation (Mote et al., 2016). This resulted in record low snowpack across the state, earning official drought declarations for 25 of Oregon’s 36 counties. Drought impacts across Oregon were widespread and diverse:

Farmers in eastern Oregon’s Treasure Valley received a third of their normal irrigation water because the Owyhee reservoir received inadequate supply for the third year in a row (Stevenson, 2016) ...

People near the Upper Klamath Lake were warned not to touch the water as algal blooms that thrived in the low flows and warm waters produced extremely high toxin levels (Marris, 2015) ...

More than half of the spring spawning salmon in the Columbia River perished, likely due to a disease that thrived in the unusually warm waters (Fears, 2015) ...

The West Coast–wide drought developed alongside a naturally-driven large, persistent high-pressure ridge (Wise, 2016). However, anthropogenic warming exacerbated the drought, particularly in Oregon and Washington (Mote et al., 2016; Williams et al., 2015) ...

Oregon’s temperatures, precipitation, and snowpack in 2015 are illustrative of conditions that, according to climate model projections, may be considered “normal” by mid-century.<sup>170</sup>

And there has been more bad news since 2015. In 2018, researcher John Abatzoglou reported that:

Drought impacts are being felt most notably in Oregon, which endured a period of substandard snowpack followed by unusually dry and warm conditions since May. The impacts cover the gamut from fire to farms to fish ...

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<sup>169</sup> *The Third Oregon Climate Assessment Report*, Oregon Climate Change Research Institute, January 2017.

<sup>170</sup> *Id.* at 12-13, citing: P. W. Mote et al., *Perspectives on the causes of exceptionally low 2015 snowpack in the western United States*, (2016); D. Fears, *As salmon vanish in the dry Pacific Northwest, so does Native heritage*, Washington Post ( 2015); J. Stevenson, *Documenting the Drought*, The Climate CIRCulator ( 2016); E. Marris, *In the Dry West, Waiting for Congress*, The Klamath Tribes Tribal News and Events (2015); A.P. Williams et al., *Contribution of anthropogenic warming to California drought during 2012-14*, Geophysical Research Letter, 2015.

Fishing restrictions have been enacted in the Umpqua River in western Oregon due to critically warm stream temperatures for steelhead and salmon. The combination of very low flows—including recent daily record low flows—due to subpar precipitation and warm temperatures have allowed water temperatures to warm faster than usual.<sup>171</sup>

## Sea Level Rise

Ocean sea levels will rise between four inches and four-and-a-half feet on the Oregon coast by the year 2100, and coastal residents, cities and towns along Oregon's 300 miles of coastline and 1400 miles of tidal shoreline will be threatened by increased flooding and erosion as a result. Residential development, state highways, and municipal infrastructure are all at risk to such threats.<sup>172</sup>

## Ocean Acidification and Hypoxia

As a result of climate change, ocean waters are now more acidified, hypoxic (low oxygen), and warmer, and such impacts are projected to increase, with a particular detrimental impact on some marine organisms like oysters and other shellfish, which will threaten marine ecosystems, fisheries and seafood businesses that play a vital role in Oregon's economy and culture.<sup>173</sup> As the Third Oregon Climate Assessment Report observed, "[T]he West Coast has already reached a threshold and negative impacts are already evident, such as dissolved shells in pteropod populations ... and impaired oyster hatchery operations ..."<sup>174</sup>

The Oregon Coordinating Council on Ocean Acidification and Hypoxia recently reported that "[n]ew research points to an ever-growing list of marine organisms that are now known to be vulnerable to the threats of ocean acidification and hypoxia (OAH). The list includes species such as Dungeness crabs, rockfishes and salmon that underpin livelihoods and connections to the sea for many Oregonians."<sup>175</sup>

In March of 2017, KVAL TV in Eugene, Oregon chronicled the experience of the Whiskey Creek Hatchery off Netarts Bay in Tillamook, Oregon. Manager Alan Barton said that

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<sup>171</sup> Abatzoglou, "Drought Returns to the Pacific Northwest," OCCRI Climate Circulator (August 2018).

<sup>172</sup> See W. Spencer Reeder et al., *Coasts: Complex Changes Affecting the Northwest's Diverse Shorelines*, in *Climate Change in the Northwest: Implications for Our Landscapes, Waters, and Communities* 67–109 (Meghan M. Dalton et al. eds., 2013); Ben Strauss et al., Climate Cent., *California, Oregon, Washington and the Surging Sea: A Vulnerability Assessment with Projections for Sea Level Rise and Coastal Flood Risk* 29 (2014).

<sup>173</sup> See Francis Chan et al., Cal. Ocean Sci. Tr., *The West Coast Ocean Acidification and Hypoxia Science Panel: Major Findings, Recommendations, and Actions* (2015); Julia A. Ekstrom et al., *Vulnerability and Adaptation of U.S. Shellfisheries to Ocean Acidification*, 5 *Nature Climate Change* 207, 207–14 (2015).

<sup>174</sup> *Third Oregon Climate Assessment Report*, *supra*, at 36.

<sup>175</sup> Oregon Coordinating Council on Ocean Acidification and Hypoxia, 1<sup>st</sup> Biennial Report, at 8, September 15, 2018.

“[w]e probably produce about a third of all oyster larvae on the West Coast.” But in 2007 and 2008, hatchery output collapsed by 75%. Working with scientists from Oregon State University, Whiskey Creek identified ocean acidification as the problem. They developed a way to treat the water at the hatchery, which has been successful. But Barton does not believe that treatment is a long-term solution:

“The short term prospects are pretty good. But within the next couple of decades we’re going to cross a line I don’t think we’re going to be able to come back from,” he says. “A lot of people have the luxury of being skeptics about climate change and ocean acidification. But we don’t have that choice. If we don’t change the chemistry of the water going into our tanks, we’ll be out of business. It’s that simple for us.”<sup>176</sup>

## **Forests, Pests and Fires**

Oregon is largely defined by its iconic forests, which climate change threatens in a myriad of ways, as the Third Oregon Climate Assessment Report detailed:

Future warming and changes in precipitation may considerably alter the spatial distribution of suitable climate for many important tree species and vegetation types in Oregon by the end of the 21st century. Changing climatic suitability and forest disturbances from wildfires, insects, diseases, and drought will drive changes to the forest landscape in the future. Conifer forests west of the Cascade Range may shift to mixed forests and subalpine forests would likely contract. Human-caused increases in greenhouse gases are partially responsible for recent increases in wildfire activity. Mountain pine beetle, western spruce budworm, and Swiss needle cast remain major disturbance agents in Oregon’s forests and are expected to expand under climate change. More frequent drought conditions projected for the future will likely increase forest susceptibility to other disturbance agents such as wildfires and insect outbreaks.

Future warming and changes in precipitation may considerably alter the spatial distribution of suitable climate for many important tree species and vegetation types in Oregon by the end of the 21st century (Littell et al., 2013). Furthermore, the cumulative effects of changes due to wildfire, insect infestation, tree diseases, and the interactions between them, will likely dominate changes in forest landscapes over the coming decades (Littell et al., 2013). ..

Over the last several decades, warmer and drier conditions during the summer months have contributed to an increase in fuel aridity and enabled more frequent large fires, an increase in the total area burned, and a longer fire season across the western United States, particularly in forested ecosystems (Dennison et al., 2014; Jolly et al., 2015; Westerling, 2016; Williams and Abatzoglou, 2016). The lengthening of the fire season is largely due to declining mountain snowpack and earlier spring snowmelt (Westerling, 2016). In the Pacific Northwest, the fire season length increased over each of the last four

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<sup>176</sup> KVAI-TV, ‘*One morning we came in and everything was dead*’: Climate Change and Oregon oysters, March 1, 2017.



decades, from 23 days in the 1970s, to 43 days in the 1980s, 84 days in the 1990s, and 116 days in the 2000s (Westerling, 2016). Recent wildfire activity in forested ecosystems is partially attributed to human-caused climate change: during the period 1984–2015, about half of the observed increase in fuel aridity and 4.2 million hectares (or more than 16,000 square miles) of burned area in the western United States were due to human-caused climate change (Abatzoglou and Williams, 2016).<sup>177</sup>

## Health Effects

An increase in forest fire activity is one of the various ways in which climate change threatens human health. As the Third Oregon Climate Assessment noted, “Climate change threatens the health of Oregonians. More frequent heat waves are expected to increase heat-related illnesses and death. More frequent wildfires and poor air quality are expected to increase respiratory illnesses.”<sup>178</sup> For example:

Climate change is expected to worsen outdoor air quality. Warmer temperatures may increase ground level ozone pollution, more wildfires may increase smoke and particulate matter, and longer, more potent pollen seasons may increase aeroallergens (Fann et al., 2016). Such poor air quality is expected to exacerbate allergy and asthma conditions and increase respiratory and cardiovascular illnesses and death (Fann et al., 2016).<sup>179</sup>

Oregon has already experienced a dramatic increase in “unhealthy air days” due to forest fires. The Medford metro region experienced 20 air quality alert days due to fire from 1985 through 2001, 19 of those in one year. From 2002 through 2012, Medford had 22 such days. But since 2013, Medford has had 74 such days, including 20 in 2017 and 35 in 2018.<sup>180</sup> Portland,

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<sup>177</sup> *The Third Oregon Climate Assessment Report*, citing J.T. Abatzoglou and A.P. Williams, *Impact of anthropogenic climate change on wildfire across western US forests.*, Proceedings of the National Academy of Sciences 113 (2016); P.E. Dennison et al, *Large wildfire trends in the western United States, 1984–2011*, Geophysical Research Letters 41 (2014); J.S.D. Littell et al., *Forest ecosystems: Vegetation, disturbance, and economics*, Chapter 5. In: Dalton, Mot, and Snover(eds) *Climate Change in the Northwest: Implications for Our Landscapes, Waters, and Communities*, Island Press, Washington, DC (2013); A. L. Westerling, *Increasing western US forest wildfire activity: sensitivity to changes in the timing of spring*. Phil. Trans. R. Soc. B 371 (2016).

<sup>178</sup> *Third Oregon Climate Assessment Report*, *supra*, at 74.

<sup>179</sup> *Id.*, citing N. Fann et al., Ch. 3: *Air Quality Impacts. The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment. US Global Change Research Program*, Washington, DC (2016).

<sup>180</sup> In addition to the impact on human health, fires in the Medford area have punished a beloved Oregon institution, the Oregon Shakespeare Festival in Ashland. In 2018 alone, the Festival had to cancel – or move indoors, to smaller venues – 20 performances, costing the Festival money and ruining many theater-goers’ plans. *Wildfire Smoke Disrupts Oregon Shakespeare Festival*, New York Times, August 24, 2018.

meanwhile, had a total of two such days from 1985 through 2014 – but 13 such days from 2015 through 2018.<sup>181</sup>

During the 2017 Eagle Creek fire, the Oregon Health Authority (OHA) reported a 29% increase in emergency room visits for respiratory symptoms in the Portland metro region.<sup>182</sup>

In its 2014 Oregon Climate and Health Profile Report, OHA elaborated on the health effects of wildfire smoke:

Particulate matter (PM) in smoke from wildfires is associated with cancer, cardiopulmonary disease and respiratory illness ... As a result of projected increases in wildfire, Spracklen et al. (2009) anticipate an increase in aerosol organic carbon of up to 40% and an increase in elemental carbon in the western U.S. of up to 20% in 2046–2055 compared to 1996–2005 ... PM associated with wildfires in California has been shown to be more toxic to the lungs than normal ambient PM ... PM exposure from wildfire smoke is a risk beyond the immediate area of the fire, since high winds can carry the PM long distances ... Increases in smoke are associated with hospital admissions for respiratory complaints, and long-term exposure worsens existing cardiopulmonary disease ... bronchitis and pneumonia.<sup>183</sup>

## Impact on American Indian Tribes

As the Legislative Summary of the Third Oregon Climate Assessment Report observed:

Changes in terrestrial and aquatic ecosystems will affect resources and habitats that are important for the sovereignty, culture, economy, and community health of many

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<sup>181</sup> Oregon DEQ, *Forest Fire Smoke Impact on Air Quality Health Trends in Bend, Klamath Falls, Medford, and Portland (1985 to 2018)*, DEQ18-NWR-0066-TR (October 2018). It is worth noting that although air quality alerts are often limited to especially vulnerable populations – “unhealthy for sensitive groups” – Medford in 2017-18 has experienced 38 days in which the air was unhealthy for all populations, including five “very unhealthy” days and one “hazardous” day.

<sup>182</sup> Statewide Fire Activation Surveillance Report (090517-090617), Oregon Health Authority.

<sup>183</sup> Oregon Climate and Health Profile Report at 39 (Oregon Health Authority, Public Health Division, 2014), citing C.A. Pope et al., *Cardiovascular mortality and long-term exposure to particulate air pollution: Epidemiological evidence of general pathophysiological pathways of disease*, *Circulation*. 2004;109:71–7.; C.A. Pope and D.Q. Dockery, Dockery, *Health effects of fine particulate air pollution: lines that connect.*, *Journal of the Air & Waste Management Association* (1995). 2006;56:709–42; World Health Organization. *Review of Evidence on Health Aspects of Air Pollution–REVIHAAP Project* (2013.) J.L. Mauderly and J.C. Chow, *Health effects of organic aerosols. Inhalation toxicology*. 2008;20:257–88; T.C. Wegesser and K.E. Pinkerton KE, J.A. Last, *California wildfires of 2008: coarse and fine particulate matter toxicity*, *Environmental Health Perspectives*. 2009;117:893–7.; M. Ginsberg et al. *Monitoring Health Effects of Wildfires Using the BioSense System--San Diego County, California*, October 2007. *Morbidity and Mortality Weekly Report*. 2008;57(27):741–4; R.J. Delfino et al., *The relationship of respiratory and cardiovascular hospital admissions to the southern California wildfires of 2003*, *Occupational and Environmental Medicine*. 2009;66:189–97.

American Indian tribes. Tribes that depend upon these ecosystems, both on and off reservation, are among the first to experience the impacts of climate change. Of particular concern are changes in the availability and timing of traditional foods such as salmon, shellfish, and berries, and other plant and animal species important to tribes' traditional way of life.<sup>184</sup>

The threat that climate change poses to salmon populations is a particular source of concern for the tribes:

A 2015 study of Columbia River Basin tribes, including the Confederated Tribes of Warm Springs (CTWS) and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), found that the primary concerns regarding climate change impacts included the quantity and quality of water resources, snowpack, water temperatures for spawning conditions, and fishing rights (Sampson, 2015). Pacific salmon have great cultural, subsistence, and commercial value to tribes in the Pacific Northwest, and are central to tribal cultural identity, longhouse religious services, sense of place, livelihood, and the transfer of traditional values to the next generation (Dittmer, 2013). During the last 150 years, culturally important salmon populations have declined (Dittmer, 2013). Continuation of past trends of earlier spring peak, more extreme high flows and more frequent low flows in the low elevation basins of northeast Oregon, home to the CTWS and CTUIR, may force earlier migration of juvenile salmon, challenge returning adults in low flow conditions, and increase scour risk for emerging young salmon (Dittmer, 2013).<sup>185</sup>

Page 58:

The threat that climate change poses to forests is likewise a major concern for tribes:

Changes in forest ecosystems and disturbances will affect resources and habitats that are important for the cultural, medicinal, economic, and community health of tribes (Lynn et al., 2013). In Oregon, 62% of tribal reservation land is forested, and the US government has a trust responsibility toward such forests (Indian Forest Management Assessment Team, 2013). American Indian and Alaska Native tribes that depend on forest ecosystems, whether on or off reservations, are among the first to experience the impacts that climate change is having on forests, such as the expansion of invasive species, insects, diseases, and wildfires (Norton-Smith et al., 2016). Invasive species that displace native species can negatively affect tribal subsistence and ceremonial practices, although there is little knowledge about on how climate change will interact with invasive species (Norton-Smith et al., 2016). Increasing wildfire, insects, and diseases have jeopardized the economic and ecological sustainability of tribally managed forests and important tribal resources (Indian Forest Management Assessment Team, 2013; Norton-Smith et

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<sup>184</sup> *The Third Oregon Climate Assessment Report, supra*, (Legislative Summary).

<sup>185</sup> K. Dittmer, *Changing streamflow on Columbia basin tribal lands—climate change and salmon*, Climatic Change 120(3) (2013); D. Sampson, *Columbia River Basin Tribes Climate Change Capacity Assessment*, Institute for Tribal Government, Hatfield School of Government, Portland State University: Portland, OR (2015)

al., 2016). Collaborative adaptive forest management that integrates tribal traditional ecological knowledge can support socio-ecological resilience to climate change (Armatas et al., 2016).<sup>186</sup>

### **Rhode Island**

Climate change is adversely impacting Rhode Island in many diverse ways, including warming air temperatures, warming ocean temperatures, rising sea level, increased acidity of ocean waters, increased rainfall amounts, and increased intensity of rainfall events.

Rhode Island has experienced a significant trend over the past 80 years toward a warmer and wetter climate. Trends are evident in annual temperatures, annual precipitation, and the frequency of intense rainfall events. Temperatures have been steadily climbing in the Ocean State since the early 1930s. The average annual temperature for the state is currently increasing at a rate of 1 degree Fahrenheit every 33 years. The frequency of days with high temperatures at or above 90 degrees has increased while the frequency of days with minimum temperatures at or below freezing has decreased.<sup>187</sup>

There has also been a pronounced increase in precipitation from 1930 to 2013. Increased precipitation has occurred as a result of large, slow moving storm systems, multiple events in the span of a few weeks (such as the 2010 spring floods), as well as an increase in the frequency of intense rain events. The average annual precipitation for Rhode Island is increasing at a rate of more than 1 inch every 10 years. The frequency of days having one inch of rainfall has nearly doubled. Intense rainfall events (heaviest 1 percent of all daily events from 1901 to 2012 in New England) have increased 71 percent since 1958. The increased amounts of precipitation since 1970 has resulted in a much wetter state in terms of soil moisture and the ground's ability to absorb rainfall.<sup>188</sup>

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<sup>186</sup> Citing C. Armatas et al., *Opportunities to utilize traditional phenological knowledge to support adaptive management of social-ecological systems vulnerable to changes in climate and fire regimes*, Ecology and Society 21 (2016) ; *Assessment of Indian Forests and Forest Management in the United States*, Indian Forest Management Assessment Team (2013) ; K. Lynn et al., *Northwest Tribes: Cultural Impacts and Adaptation Resources*: Chapter 8. In: M. M. Dalton et al., *Climate Change in the Northwest: Implications for Our Landscapes, Waters, and Communities*, Island Press: Washington, DC (2013).; K. Norton-Smith et al., *Climate change and indigenous peoples: a synthesis of current impacts and experiences* (2016). .

<sup>187</sup> *Overview of a Changing Climate in Rhode Island*, David Vallee (Hydrologist-in-Charge, National Weather Service Northeast River Forecast Center, NOAA) and Lenny Giuliano (Air Quality Specialist, Rhode Island Department of Environmental Management, State Climatologist, State of Rhode Island), August 2014 at 2-3, available at [http://research3.fit.edu/sealevelriselibrary/documents/doc\\_mgr/444/Valee%20%20Giuliano.%202014.%20CCC%20in%20Rhode%20Island%20Overview.pdf](http://research3.fit.edu/sealevelriselibrary/documents/doc_mgr/444/Valee%20%20Giuliano.%202014.%20CCC%20in%20Rhode%20Island%20Overview.pdf).

<sup>188</sup> *Id.* at 4.

In addition, the water in Narragansett Bay is getting warmer. Over the past 50 years, the surface temperature of the Bay has increased 1.4° to 1.6° C (2.5° to 2.9° F). Winter water temperatures in the Bay have increased even more, from 1.6° to 2.0° C (2.9° to 3.6° F). Ocean temperatures are increasing world-wide, but temperature increases in the northwestern Atlantic Ocean are expected to be 2-3 times larger than the global average.<sup>189</sup> Warmer water temperatures in Narragansett Bay are causing many changes in ecosystem dynamics, fish, invertebrates, and plankton. Cold-water iconic fishery species (cod, winter flounder, hake, lobster) are moving north out of RI waters and warm-water southern species are becoming more prevalent (scup, butterfish, squid). Rhode Island's marine waters are also becoming more acidic due to increasing CO<sub>2</sub>. This may cause severe impacts to shellfish, especially in their larval life stages.<sup>190</sup>

Sea levels have risen over 9 inches in Rhode Island since 1930 as measured at the Newport tide gauge. The historic rate of sea level rise at the Newport tide gauge from 1930 to 2015 is presently 2.72 mm/year, or more than an inch per decade.<sup>191</sup> At present rates, sea levels will likely increase 1 inch between every 5 or 6 years in Rhode Island. NOAA is projecting as much as 6.6 feet of sea level rise by the end of this century in Rhode Island. In the shorter-term, NOAA predicts upwards of 1 foot by 2035 and 1.9 feet by 2050.<sup>192</sup> This has critical implications for Rhode Island, as thousands of acres of Rhode Island's coast will be affected.

Climate change is also altering the ecology and distribution of plants and animals in Rhode Island. In southern New England, spring is arriving sooner and plants are flowering earlier (one week earlier now when compared to the 1850s). For every degree of temperature rise in the spring and winter, plants flower 3.3 days earlier. For woody plants, leaf-out is occurring 18 days earlier now than in the 1850s. Changes in the timing of leaf-out, flowering, and fruiting in plants can be very disruptive to plant pollinators and seed dispersers.<sup>193</sup>

Changes in the timing of annual cycles has been observed in Rhode Island birds. Based on a 45-year near-continuous record of monitoring fall migration times for passerine birds in Kingston, RI, Smith and Paton (2011) found a 3.0 days/decade delay in the departure time of 14 species of migratory birds.<sup>194</sup>

## **Vermont**

Climate change is causing an increase in temperatures and precipitation in Vermont. Average annual temperature has increased by 1.3° F since 1960, and is projected to rise by an

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<sup>189</sup> Rhode Island Executive Climate Change Coordinating Council (EC4) Science and Technical Advisory Board (STAB) Annual Report to the Full Council of the EC4 (May 2016), appendix to Rhode Island Executive Climate Change Coordinating Council Annual Report, June 2016, at 33-35, available at <http://climatechange.ri.gov/documents/ar0616.pdf>.

<sup>190</sup> *Id.*

<sup>191</sup> *Id.* at 28-30.

<sup>192</sup> *Id.*

<sup>193</sup> *Id.* at 38-40

<sup>194</sup> *Id.*

additional 2-3.6 ° F by 2050.<sup>195</sup> Since 1960, average annual precipitation has increased by 5.9 inches.<sup>196</sup>

Heavy rainfall events are becoming more common.<sup>197</sup> Increasingly frequent heavy rains threaten to flood communities located in Vermont's many narrow river valleys. In 2011 Tropical Storm Irene dumped up to 11 inches of rain on Vermont, impacting 225 municipalities and causing \$733 million in damage.<sup>198</sup> More than 1,500 residences sustained significant damage, temporarily or permanently displacing more than 1400 households.<sup>199</sup> More than 500 miles of state highway, 2000 municipal road segments, and 480 bridges were damaged.<sup>200</sup> Farms, water supply and wastewater treatment facilities were also damaged, and the channels of many streams were enlarged and/or relocated.<sup>201</sup>

In addition to threatening human lives and property, increasingly frequent heavy rains present challenges for state and local land use planning. Further, storm water runoff carries pollutants to the state's streams and lakes, and hinders the state's efforts to address phosphorous pollution and resulting algal blooms in Lake Champlain.

Climate change also threatens Vermont's environment and economy by affecting activities dependent on seasonal climate patterns, such as maple sugaring and winter sports.<sup>202</sup> Vermont is the nation's leading maple-syrup producing state<sup>203</sup>. Warmer temperatures are likely to shift the suitable habitat for sugar maples farther north into Canada.<sup>204</sup> Warmer winters may bring more rain and less snow to Vermont, harming the skiing, snowboarding, and snowmobiling

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<sup>195</sup> *Vermont Climate Change Assessment*, <http://vtclimate.org/vts-changing-climate/> (last visited Oct. 24, 2018).

<sup>196</sup> *Id.*

<sup>197</sup> *Id.*

<sup>198</sup> Pierre-Louis, Kendra, *Five Years After Hurricane Irene, Vermont Still Striving for Resilience*, Inside Climate News (Sept. 1, 2016), available at <https://insideclimatenews.org/news/31082016/five-years-after-hurricane-irene-2011-effects-flooding-vermont-damage-resilience-climate-change>.

<sup>199</sup> *Tropical Storm Irene by the Numbers* (Aug. 28, 2013), <http://www.vermontbiz.com/news/august/tropical-storm-irene-numbers> (last visited Oct. 24, 2018).

<sup>200</sup> *Id.*

<sup>201</sup> *Id.*

<sup>202</sup> U.S. EPA, *What Climate Change Means for Vermont* (August 2006), available at <https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-vt.pdf>.

<sup>203</sup> Vermont Agency of Agriculture Food & Markets, *Vermont Leads Nation in 2018 Maple Season Production* (June 13, 2018), <http://agriculture.vermont.gov/Vermont%20Leads%20Nation%20in%202018%20Maple%20Season%20Production> (last visited Oct. 24, 2018).

<sup>204</sup> U.S. EPA, *What Climate Change Means for Vermont*, *supra*.

industries and local economies that depend on them. *Id.* During the winter of 2016-17, Vermont recorded more than 3.9 million skier visits, second only to Colorado among the states.<sup>205</sup>

Climate change is also contributing to increased distribution and abundance of ticks and increased tickborne diseases, including Lyme disease and Anaplasmosis, in Vermont.<sup>206</sup> Vermont has the nation's highest per-capita incidence of Lyme Disease.<sup>207</sup>

## **Washington**

Washington is a coastal state, a mountain state, and a forest state. Reports prepared by the University of Washington Climate Impacts Group show that climate change will significantly adversely affect each of these signature features of Washington. In addition to these impacts, climate change will cause significant harm to public health.

Approximately 4 million of Washington's 6.5 million people live in the area around Puget Sound. Climate change will cause the sea level to rise and permanently inundate low-lying areas in the Puget Sound region.<sup>208</sup> Under a business as usual greenhouse gas scenario, sea level is predicted to rise in Seattle relative to 2000 levels by 2 feet by 2050 and 5 feet by 2100.<sup>209</sup> Sea level rise will also increase the frequency of coastal flood events. For example, with 2 feet of sea level rise (predicted for Seattle), a 1-in-100 year flood event will become an annual event. Sea level rise will also cause coastal bluffs (the location of many family homes in Puget Sound) to recede by as much as 75-100 feet by 2100 relative to 2000.<sup>210</sup> This would be a doubling, on average, of the current rate of recession. Sea level rise will also result in reduced harvest for commercial fishing and shellfish operations.<sup>211</sup>

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<sup>205</sup> *Vermont ski industry rebounds to nearly 4 million visits*, Vermontbiz (June 15, 2017), <https://vermontbiz.com/news/june/vermont-ski-industry-rebounds-nearly-4-million-visits> (last visited Oct. 24, 2018).

<sup>206</sup> Vermont Department of Health, *Climate Change and Tickborne Diseases*, <http://www.healthvermont.gov/health-environment/climate-health/tickborne-diseases> (last visited Oct. 24, 2018).

<sup>207</sup> DeSmet, Nicole, *Tick-borne diseases: Getting worse, CDC study finds*, Burlington Free Press (May 9, 2018), available at <https://www.burlingtonfreepress.com/story/news/local/vermont/2018/05/09/tick-spreading-lyme-diseases-getting-worse-cdc-study-finds/589714002/>.

<sup>208</sup> U.S. Census Bureau, *Annual Estimates of the Population of Combined Statistical Areas: April 2010 to July 2011*, U.S. Census Bureau, [https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_10\\_5YR\\_B01003&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_10_5YR_B01003&prodType=table) (last visited Oct. 24, 2018).

<sup>209</sup> State of Knowledge: Climate Change in Puget Sound (November 2015), Climate Impacts Group, University of Washington, (hereinafter "State of Knowledge, Puget Sound") at 4-7; available at <https://cig.uw.edu/resources/special-reports/ps-sok/>

<sup>210</sup> *Id.*

<sup>211</sup> *Id.*

Climate change is also causing ocean acidification, through the absorption in the ocean of excess carbon dioxide from the atmosphere. Ocean waters on the outer coast of Washington and the Puget Sound have become about 10-40 percent more acidic since 1800.<sup>212</sup> This increased acidity is already affecting some shellfish species.<sup>213</sup> Washington has the largest shellfish industry on the west coast, contributing \$184 million to Washington's economy in 2010 and employing 2710 workers.<sup>214</sup> Under a business as usual greenhouse gas scenario, ocean waters are expected to become at least 100 percent more acidic by 2100 relative to 1986-2005.<sup>215</sup> The predicted level of ocean acidification is expected to cause a 34 percent decline in shellfish survival by 2100.<sup>216</sup>

Washington depends on yearly winter mountain snow pack for drinking water, as well as water for irrigation, hydropower, and salmon. Washington's winter mountain snowpack is decreasing because climate change is causing more precipitation to fall as rain rather than snow. Snowpack decreased in Washington's Cascade Mountains by about 25 percent between the mid-20th century and 2006.<sup>217</sup> By the 2040s, snowpack is predicted to decrease 38-46 percent relative to 1916-2006,<sup>218</sup> and by the 2080s, snow pack is expected to decline 56-70 percent.<sup>219</sup> This loss of snowpack will cause a 50 percent increase in the number of years in which water is not available for irrigation, as well as a 20 percent decrease in summer hydropower production.<sup>220</sup> In addition, the decrease in summer stream flows combined with higher stream temperatures will result in stream temperatures too high to support adult salmon.<sup>221</sup>

Climate change is also impacting Washington's forests. Of Washington's total area (42.5 million acres), a little more than half (22 million acres) is forested.<sup>222</sup> Washington's forest products industry generates a gross income of about \$48 billion per year, provides more than

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<sup>212</sup> State of Knowledge Report, Climate Change Impacts and Adaptation in Washington State: Technical Summaries for Decision Makers, (December 2013), Climate Impacts Group, University of Washington (hereinafter "State of Knowledge Report"), at 2-6; available at <https://cig.uw.edu/resources/special-reports/wa-sok/>

<sup>213</sup> *Id* at 2-3.

<sup>214</sup> Washington: A Shellfish State, Washington Shellfish Initiative, at <http://www.governor.wa.gov/sites/default/files/WSI%20factsheet.pdf>

<sup>215</sup> State of Knowledge Report at ES-2.

<sup>216</sup> *Id* at 8-4.

<sup>217</sup> *Id* at 2-5

<sup>218</sup> *Id* at ES-2.

<sup>219</sup> *Id* at 6-10.

<sup>220</sup> *Id* at 6-5.

<sup>221</sup> *Id* at ES-4, 6-6, 6-11, 6-12.

<sup>222</sup> Washington Forest Protection Association, Sustainable Forestry, <http://www.wfpa.org/sustainable-forestry/> (last visited Oct. 24, 2018).



100,000 jobs, and contributes approximately \$4.9 billion in annual wages.<sup>223</sup> Climate change is threatening this industry in a number of ways. For example, Douglas fir accounts for almost half the timber harvested in Washington.<sup>224</sup> Under a moderate greenhouse gas scenario, Douglas fir habitat is expected to decline 32 percent by the 2060s relative to 1961-1990.<sup>225</sup> In addition, the area of Washington forest where tree growth is severely limited by water availability is projected to increase (relative to 1970-1999) by about 32 percent in the 2020s, with an additional 12 percent increase in the 2040s and another 12 percent increase in the 2080s.<sup>226</sup> Wildland fires pose another threat to Washington's forests. Under a business as usual greenhouse gas scenario, decreases in summer precipitation, increases in summer temperatures and earlier snow melt are predicted to result in up to a 300 percent increase in the area in eastern Washington burned annually by forest fires<sup>227</sup> and up to a 1000 percent increase in area burned annually on the west side of the state (typically, the wet side).<sup>228</sup>

By far the highest costs to the state, however, are expected to come from harm to public health. More frequent heat waves and more frequent and intense flooding may harm human health directly. Warming may also exacerbate health risks from poor air quality and allergens. Climate change can indirectly affect human health through its impacts on water supplies, wildfire risks, and the ways in which diseases are spread. Risks are often greatest for the elderly, children, those with existing chronic health conditions, individuals with greater exposure to outside conditions, and those with limited access to health resources.<sup>229</sup>

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<sup>223</sup> Washington Department of Commerce, Forest Products Sector, at <http://www.commerce.wa.gov/growing-the-economy/key-sectors/forest-products/> (last visited Oct. 24, 2018).

<sup>224</sup> Washington Department of Natural Resources, 2015 Washington Timber Harvest Report, (Sept. 2016), *available at* [https://www.dnr.wa.gov/publications/em\\_obc\\_wa\\_timber\\_harvest\\_2015\\_final2.pdf](https://www.dnr.wa.gov/publications/em_obc_wa_timber_harvest_2015_final2.pdf)

<sup>225</sup> State of Knowledge Report, *supra*, at 7-1.

<sup>226</sup> *Id* at 7-3.

<sup>227</sup> *Id*.

<sup>228</sup> *Id* at 7-4.

<sup>229</sup> State of Knowledge, Puget Sound, *supra*, at ES-7.

**Attorneys General of California, Illinois, Iowa, Maine, Maryland, Commonwealth of Massachusetts, New Mexico, New York, Oregon, Commonwealth of Pennsylvania, Rhode Island, Vermont, Washington, and the District of Columbia, the State of Colorado, and the City of Chicago**

August 9, 2017

*Via electronic transmission*

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**Attention:     Docket ID No. EPA-HQ-OAR-2017-0346  
                     Docket ID No. EPA-HQ-OAR-2010-0505**

The Attorneys General of California, Illinois, Iowa, Maine, Maryland, the Commonwealth of Massachusetts, New Mexico, New York, Oregon, the Commonwealth of Pennsylvania, Rhode Island, Vermont, Washington, and the District of Columbia, the State of Colorado, and the Corporation Counsel of the City of Chicago (“States”) respectfully submit these comments on the Environmental Protection Agency’s (“EPA”) two proposed rules that would collectively stay, for a period of over two years, multiple Clean Air Act compliance requirements contained in the final rule titled “Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources,” published in the Federal Register on June 3, 2016 (“2016 Rule”). *See* Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three Month Stay of Certain Requirements, 82 Fed. Reg. 27,641 (June 16, 2017), Docket ID No. EPA-HQ-OAR-2017-0346; Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements, 82 Fed. Reg. 27,645 (June 16, 2017), Docket ID No. EPA-HQ-OAR-2010-0505 (“Proposed Stay Rules”).

The Proposed Stay Rules are blatantly unlawful; EPA lacks statutory authority to impose the proposed stays—which would effectively repeal key provisions of the 2016 Rule for twenty-seven months—and its effort amounts to an impermissible end-run around well-established administrative law requirements governing the process for repeal of federal rules.<sup>1</sup> The fact that EPA is taking notice and comment does not cure that fatal defect. The Proposed Stay Rules are also arbitrary and capricious because EPA has failed to either justify its reversal of its prior position regarding the importance of reducing methane emissions from the oil and natural gas

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<sup>1</sup> To the extent EPA claims a need for additional time to reconsider these key provisions of the 2016 Rule, *see, e.g.*, 82 Fed. Reg. 27,645, that rationale is unavailing in light of the recent decision by the Court of Appeals for the District of Columbia Circuit holding that EPA’s initial grant of a separate three-month administrative stay in furtherance of its reconsideration of those same provisions was arbitrary and capricious, since the underlying reconsideration grant failed to satisfy the requirements of the Act. *Clean Air Council v. Pruitt*, 2017 WL 2838112 (D.C. Cir. July 3, 2017).

sector or reconcile the stay with its own rulemaking record. Administrator Pruitt's involvement also renders the Proposed Stay Rules arbitrary and capricious, an abuse of discretion, and unconstitutional, because of his direct involvement in litigation challenging the 2016 Rule.

Further, the Proposed Stay Rules would significantly harm our states by delaying reductions in emissions of methane, volatile organic compounds ("VOCs"), and hazardous air pollutants. EPA's Proposed Stay Rules seek to freeze multiple important compliance requirements contained in the 2016 Rule. The 2016 Rule satisfies EPA's long overdue statutory obligation to limit greenhouse gas ("GHG") emissions—specifically methane—from new oil and natural gas facilities that harm public health and welfare. The oil and natural gas sector is the largest industrial source of methane emissions, accounting for a third of total methane emissions in the United States.<sup>2</sup> According to EPA, the rule will prevent 300,000 tons of methane emissions in 2020, and 510,000 tons of methane emissions in 2025. 81 Fed. Reg. at 35,827. The 2016 Rule will thus help to prevent and mitigate harms that climate change poses to human health and the environment, including increased heat-related deaths, damaged coastal areas, disrupted ecosystems, more severe weather events, significant reduction in water storage in winter snowpack in mountainous regions, and longer and more frequent droughts. 81 Fed. Reg. at 35,834-35,837; *see also Massachusetts v. EPA*, 549 U.S. 497, 521 (2007); Endangerment & Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496, 66,523-66,536 (Dec. 15, 2009). Although carbon dioxide is the most ubiquitous GHG, methane is far more potent on a per unit basis, with a 100-year global warming potential twenty-eight to thirty-six times that of carbon dioxide according to studies cited by EPA. 81 Fed. Reg. at 35,837-35,838. In addition to reducing methane emissions, the 2016 Rule also places limits on VOC emissions and, as an additional benefit, reduces hazardous air pollutant emissions, which will help clean the air in many local communities near oil and natural gas operations. *Id.* at 35,827.<sup>3</sup> By exempting industry compliance with the requirements of the 2016 Rule, EPA's Proposed Stay Rules will adversely impact public health and the environment. Each day the stay is in place, our residents will be exposed to methane, VOCs, and hazardous air

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<sup>2</sup> EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015 (2017) ("2017 GHGI"), at ES-16, Table ES-2, *available at* [https://www.epa.gov/sites/production/files/2017-02/documents/2017\\_complete\\_report.pdf](https://www.epa.gov/sites/production/files/2017-02/documents/2017_complete_report.pdf)

<sup>3</sup> EPA's issuance of the 2016 Rule also triggered the agency's duty to propose guidelines for states to develop plans to limit methane emissions from existing sources under Clean Air Act section 111(d). 42 U.S.C. § 7411(d); 40 C.F.R. § 60.21(a). *See* Letter from 15 Attorneys General and Chicago Corporation Counsel to Administrator Pruitt (June 29, 2017), *available at* [https://ag.ny.gov/sites/default/files/2017\\_06\\_29\\_ltr\\_oag-epa\\_clean\\_air\\_act\\_notice\\_of\\_intent\\_to\\_sue.pdf](https://ag.ny.gov/sites/default/files/2017_06_29_ltr_oag-epa_clean_air_act_notice_of_intent_to_sue.pdf). Regulation of emissions from existing sources is crucial because existing sources comprise the vast majority of the sector's emissions. *See* Environmental Defense Fund, Rising Risk: Improving Methane Disclosure in the Oil and Gas Industry (January 2016), *available at* [https://www.edf.org/sites/default/files/content/rising\\_risk\\_full\\_report.pdf](https://www.edf.org/sites/default/files/content/rising_risk_full_report.pdf) (stating that "roughly 90% of emissions in 2018 are forecast to come from existing sources.").

pollutants that would otherwise have been avoided if the 2016 Rule's requirements remained in force.

Therefore, for the reasons detailed herein, our States strongly oppose the Proposed Stay Rules and respectfully request that EPA withdraw them and fulfill its most basic duty to implement and enforce the 2016 Rule's important public health and environmental protections.

## **I. REGULATORY BACKGROUND**

Section 111 of the Clean Air Act contains the New Source Performance Standards ("NSPS") program, which requires EPA to regulate all categories of stationary (non-vehicle) sources that cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare. 42 U.S.C. § 7411(b)(1)(A). Section 111(b) requires EPA to establish standards of performance governing the emission of air pollutants from new sources, and to review and, if appropriate, revise, those standards at least every eight years. 42 U.S.C. § 7411(b)(1)(B). EPA sets performance standards for new sources by reference to emissions levels that can be achieved using the most up-to-date control technology that is both feasible and cost-effective for each type of pollutant, but it does not mandate any specific equipment or technology. 42 U.S.C. § 7411(a)(1) & (b)(5). Under the Clean Air Act, an existing source that is modified or reconstructed after regulations are proposed for new sources is also considered a new source. 42 U.S.C. § 7411(a)(2); 40 C.F.R. § 60.15.

In 1979, EPA listed crude oil and natural gas production as a source category that contributes significantly to air pollution that may reasonably be anticipated to endanger public health and welfare. *See* Priority List and Additions to the List of Categories of Stationary Sources, 44 Fed. Reg. 49,222 (Aug. 21, 1979). EPA originally promulgated standards of performance for the oil and natural gas sector in 1985. The eight-year deadline for reviewing these standards expired in 1993. EPA failed to timely review the standards of performance, leading multiple groups to file suit in 2009 to compel such review. That case, *Wild Earth Guardians v. EPA*, No. 1:09-CV-00089 (D.D.C.), resulted in a consent decree setting forth a schedule for proposing any final revisions by November 30, 2011. EPA proposed revisions to the oil and natural gas NSPS in August 2011, 76 Fed. Reg. 52,738 (Aug. 23, 2011), and signed a final rule to complete the mandated review for oil and natural gas operations on April 17, 2012. 77 Fed. Reg. 49,490 (Aug. 16, 2012) ("2012 Rule"). However, despite previously determining in 2009 that methane and other GHGs endanger public health and welfare, EPA did not establish performance standards or emission guidelines for methane emissions from this industrial sector in the 2012 Rule.

On December 11, 2012, New York, Connecticut, Delaware, Maryland, Massachusetts, Rhode Island, and Vermont notified EPA of their intent to sue the agency for violating the Clean Air Act by failing to adopt limits on methane emissions from equipment used in oil and natural

gas production, processing, and transmission in the 2012 Rule.<sup>4</sup> As explained in that notice letter, EPA had determined that methane emissions endanger public health and welfare, and that processes and equipment in the oil and natural gas sector emit vast quantities of methane. EPA had compelling data, including from eighteen years of experience administering the Natural Gas Star Program, demonstrating that many measures to avoid (or reduce) methane leaks from new and existing oil and natural gas operations were available and cost-effective. In light of EPA's findings, those States asserted that EPA's failure in its 2012 rulemaking to determine whether standards limiting methane emissions from oil and natural gas operations under section 111 of the Clean Air Act were appropriate was a violation of a nondiscretionary duty of the Administrator and constituted an unreasonable delay in taking agency action.

After 2012, additional studies confirmed that the oil and natural gas sector is the largest industrial source of methane emissions, accounting for a third of total methane emissions in the United States. *See Oil and Natural Gas Sector: Emission Standards for New and Modified Sources*, Proposed Rule, 80 Fed. Reg. 56,593. Recognizing the importance of reducing methane emissions, in June 2013, President Obama issued a Climate Action Plan, which directed EPA and other federal agencies to develop a comprehensive interagency strategy to reduce methane emissions. In March 2014, the Obama Administration built on the Climate Action Plan with its Strategy to Reduce Methane Emissions. That strategy identified methane reductions as an important step to achieve near-term beneficial impacts in mitigating global climate change and committed EPA to assessing significant sources of methane and other emissions from the oil and natural gas sector, soliciting input from independent experts through a series of technical white papers, and determining how best to pursue further methane reductions from these sources. Many of the undersigned Attorneys General filed comments on the EPA white papers advocating for the direct regulation of methane from new and existing oil and natural gas development and delivery equipment.<sup>5</sup> States that had noticed their intent to sue EPA over its failure to address oil and natural gas sector methane emissions withheld suit as these efforts took shape.

In January 2015, the Administration announced its goal to cut methane emissions from the oil and natural gas sector by as much as forty-five percent from 2012 levels by 2025. In September 2015, EPA proposed regulations to require new and modified equipment to meet standards to limit their methane emissions. 80 Fed. Reg. 56,593 (Sept. 18, 2015). Many of the undersigned Attorneys General submitted comments on the proposed standards for new and modified sources, and further urged EPA to move forward expeditiously with regulation of

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<sup>4</sup> *See* Attachment 1, Clean Air Act Notice of Intent to Sue Letter to Lisa P. Jackson, Administrator, U.S. Environmental Protection Agency, from New York, Connecticut, Delaware, Maryland, Massachusetts, Rhode Island, and Vermont (Dec. 11, 2012).

<sup>5</sup> *See* Attachment 2, Letter from Eric T. Schneiderman, et al., to Gina McCarthy, "Re: Comments on EPA Methane White Papers" (June 16, 2014) (signed by attorneys general of Delaware, Maryland, Massachusetts, New York, Oregon, Rhode Island, and Vermont); *See* Attachment 3, Letter from Eric Schneiderman, et al., to Janet McCabe, "Re: Addressing Methane Emissions from Distribution Sector" (Sept. 12, 2014) (signed by attorneys general of Delaware, Maryland, Massachusetts, New York, Oregon, Rhode Island, and Vermont).

existing sources. *See, e.g.*, Letter from Attorneys General of New York, Massachusetts, Oregon, Rhode Island, and Vermont to United States Environmental Protection Agency, Docket ID No. EPA-HQ-OAR-2010-0505 (Dec. 4, 2015).

On June 3, 2016, pursuant to its authority under Section 111(b) of the Clean Air Act, EPA finalized the 2016 Rule to reduce emissions of methane, VOCs and other pollutants from new and modified production, gathering, processing, transmission and storage equipment in the oil and natural gas industry. 81 Fed. Reg. 35,824 (June 3, 2016). Specifically, the 2016 Rule targets the following emissions sources of methane and VOCs: hydraulically fractured oil well completions, pneumatic pumps, fugitive emissions from well sites and compressor stations, and equipment leaks at natural gas processing plants. *Id.* at 35,825. By this rule, EPA encouraged the use of emerging technology in leak monitoring and set a fixed schedule for monitoring leaks of twice per year for all well sites and four times per year for all compressor stations. *Id.* at 35,826, 35,846. According to EPA, the 2016 Rule is expected to reduce 300,000 tons of methane, 150,000 tons of VOCs, and 1,900 tons of hazardous air pollutants (as a co-benefit of reducing VOCs) in 2020. *Id.* at 35,827. In 2025, the rule would reduce 510,000 tons of methane, 210,000 tons of VOCs, and 3,900 tons of hazardous air pollutants. *Id.* EPA analyzed the costs and benefits of the 2016 Rule, including the revenues from recovered natural gas that would otherwise be vented, and determined that the 2016 Rule would result in a net benefit estimated at \$35 million in 2020 and \$170 million in 2025. *Id.* at 35,827-35,828.

The 2016 Rule also complements state regulation to control methane emissions from the oil and natural gas sector. For example, California's regulation, approved by the California Air Resources Board in March 2017, requires quarterly monitoring and repairing of methane leaks from both onshore and offshore oil and natural gas wells, natural gas processing facilities, compressor stations, and other equipment used in the processing and delivery of oil and natural gas. *See* Cal. Code Regs. tit. 17, §§ 95665, *et al.* California's regulation requires oil and natural gas operators above a certain size to implement vapor recovery systems that will capture methane so that it can be reused. California's regulation seeks to curb methane emissions at oil and natural gas production facilities by up to forty-five percent over the next nine years.<sup>6</sup> Colorado adopted rules in February 2014 that govern new and existing wells and natural gas compressor stations. Colorado requires leak inspections either monthly, quarterly, annually, or one time, depending on facility emissions. These regulations are expected to reduce methane and ethane emissions from Colorado's oil and natural gas sector by approximately 64,000 tons per year. In July 2017, Colorado proposed to require more frequent inspections within the state's ozone nonattainment area. Colorado's experience demonstrates that infrared camera inspections are cost-effective.

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<sup>6</sup> New York is also moving ahead to develop, propose and adopt, as necessary, regulations to limit emissions from existing oil and natural gas transmission facilities, such as compressor stations, not regulated by the federal New Source Rule. *See* New York Methane Reduction Plan (May 2017), available at [http://www.dec.ny.gov/docs/administration\\_pdf/mrpfinal.pdf](http://www.dec.ny.gov/docs/administration_pdf/mrpfinal.pdf).

Even with these robust state efforts, EPA action is needed—and, indeed, required—under the Clean Air Act, to ensure baseline national standards of performance in the oil and natural gas sector, especially in states with no such backstop programs. Under Administrator Pruitt, however, there has been a significant reversal in federal efforts to address methane emissions from this sector. In March 2017—in response to a request from Attorneys General with whom he was previously allied in opposing EPA rules—Administrator Pruitt withdrew, without any notice or opportunity to comment, EPA’s information collection request to the oil and natural gas industry requesting information on methane emissions from existing sources. The agency had declared this information vital to regulating existing sources in this sector. EPA ICR No. 2548.01, Nov. 10, 2016. Many of our States objected to that unexplained withdrawal.<sup>7</sup> On April 18, 2017, Administrator Pruitt announced that EPA had convened a proceeding for reconsideration of the 2016 Rule. On June 5, 2017, EPA issued its first, administrative, three-month stay of the rule, and on June 16, 2017, EPA announced its additional proposed twenty-seven month stays of the 2016 Rule.

## **II. EPA’S PROPOSED STAY RULES OF THE 2016 RULE WILL ADVERSELY IMPACT PUBLIC HEALTH AND THE ENVIRONMENT**

The States have a demonstrated, legally protected interest in protecting our residents from harmful air pollution that contributes to climate change and endangers public health and welfare. By EPA’s own admission, the 2016 Rule will prevent thousands of tons of methane, VOCs, and hazardous air pollutants from being emitted into the air from the oil and natural gas sector. Numerous scientific assessments, including, but not limited to, EPA’s 2009 Endangerment Finding,<sup>8</sup> establish that anthropogenic GHG emissions, including methane, may reasonably be anticipated to endanger public health and welfare. Some of those public health impacts include increased ozone pollution (VOCs are a precursor to ground-level ozone formation<sup>9</sup>) with an associated increased risk of morbidity and mortality; extreme weather events (e.g., hurricanes, storms, heat waves) resulting in increased risk of death, injuries, illness, infections and disease; and rising sea levels with coastal areas at risk of damage to property, land erosion, and habitat loss. *See* 81 Fed. Reg. 35,824, 35,833-35,834. Children, the elderly, and the poor are most vulnerable to climate-related health effects. *Id.* at 35,833. Scientific assessments since the 2009 Endangerment Finding have only strengthened the case that GHGs endanger public health and welfare, and we are currently seeing new records for climate indicators such as increased global average surface temperatures (the last fifteen years have been fifteen of the sixteen warmest years on record), Arctic sea ice retreat, and increased GHG concentrations in the atmosphere. *Id.* at 35,834-35,836.

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<sup>7</sup> *See* Letter re: Withdrawal of Final Methane Information Collection Request to Scott Pruitt, Administrator, from Massachusetts, California, District of Columbia, Illinois, Maine, Maryland, New York, Rhode Island, and Vermont (Apr. 3, 2017).

<sup>8</sup> *See* “Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final Rule,” 74 Fed. Reg. 66,496 (Dec. 15, 2009).

<sup>9</sup> Ground level ozone is formed when VOCs react with oxides of nitrogen in sunlight.



The public health impacts of VOCs are also well documented. *Id.* at 35,837. VOCs are a main precursor to the formation of ozone, which can cause harmful respiratory symptoms such as airway inflammation and asthma. *Id.* Long-term exposure to VOCs can also result in premature death from lung and/or heart disease. *Id.* Children and people with respiratory disease are most at risk. *Id.* EPA has further found that harmful hazardous air pollutants like formaldehyde and benzene are known to cause cancer and other adverse health effects. *Id.* at 35,824, 35,837 (“[B]enzene . . . can lead to a variety of health concerns such as cancer and noncancer illnesses (e.g., respiratory, neurological).”).

By exempting industry compliance with these important safeguards, EPA’s Proposed Stay Rules will adversely impact public health and the environment. More than 18,000 oil and natural gas wells throughout the country have been drilled, fractured, or re-fractured since the 2016 Rule was proposed on September 18, 2015. *See* Decl. of Dr. David R. Lyon, Attachment 5 to Petitioners’ Emergency Motion for a Stay or, in the Alternative, Summary Vacatur, *Clean Air Council, et al. v. Pruitt*, No. 17-1145 (D.C. Cir., June 5, 2017) (ECF No. 1678141). More than 14,000 such wells are subject to the leak detection and repair requirements of the 2016 Rule and 11,000 such wells are producing wells located in states that do not impose their own comparable leak detection and repair programs. *Id.* Thus, if EPA’s Proposed Stay Rules went into effect, those wells—and any additional new wells currently under development—will not be subject to the federal compliance requirements, including the continued inspection and repair of leaks of these pollutants and submissions of reports. As such, those residents will be exposed to methane, VOCs, and hazardous air pollutants that would otherwise have been avoided if requirements to find and fix leaks remained in force. Leaving aside any new wells, if the 2016 Rule is stayed for the proposed twenty-seven months, at least 48,138 tons of methane, 13,272 tons of VOCs, and 506 tons of hazardous air pollutants will be emitted during that period that would have been controlled and prevented under the 2016 Rule. *See id.*, at 13 (stating that the stay of the 2016 Rule for one year would result in 21,395 tons of methane, 5,899 tons of VOCs, and 225 tons of hazardous air pollutants). EPA even acknowledges that the environmental health or safety harms caused by the Proposed Stay Rules will have a “disproportionate effect on children.” 82 Fed. Reg. 27,645, 27,650 (June 16, 2017).<sup>10</sup> It has wholly failed to justify the Proposed Stay Rules in light of the harms they will likely cause.

### **III. EPA’S PROPOSED STAY RULES EXCEED ITS STATUTORY AUTHORITY UNDER THE CAA**

The Proposed Stay Rules would put in place a two-year stay, which qualifies as a major rule and would take effect sixty-days after publication, and a three-month stay that would take

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<sup>10</sup> A recent study found that the increase in ozone levels in 2025 from oil and natural gas emissions will result in 750,000 summertime asthma attacks in children under the age of 18. *See* Gasping for Breath, An analysis of the health effects from ozone pollution from the oil and gas industry, Clean Air Task Force (Aug. 2016), *available at* [http://www.catf.us/resources/publications/files/Gasping\\_for\\_Breath.pdf](http://www.catf.us/resources/publications/files/Gasping_for_Breath.pdf)



effect immediately upon publication. EPA's proposed action would thereby seek to deliver to industry an uninterrupted exemption from the rule's requirements between the expiration of EPA's original three-month stay (which the D.C. Circuit Court of Appeals struck down) and the effective date of EPA's two-year stay. *See* 82 Fed. Reg. at 27,641. EPA asserts that the Proposed Stay Rules would provide EPA "sufficient time to propose, take public comment, and issue a final action on the issues concerning the specific requirements on which EPA has granted reconsideration." *Id.* at 27,645. Those reconsideration issues are: (1) EPA's decision to regulate low-production wells, (2) the process for proving compliance by "alternative means," (3) the requirement that a professional engineer certify proper design of vent systems, and (4) EPA's decision to exempt pneumatic pumps from regulation with a professional engineer certification. Notably, these are the same four issues that EPA relied upon to issue its unlawful stay of the rule under Clean Air Act section 307(d)(7)(B) on June 5, 2017.

**A. EPA's Proposed Stay Rules Run Afoul of Section 307(d)(7)(B)'s Three-Month Limitation**

Administrative agencies may act only pursuant to the authority delegated to them by Congress. *See Verizon v. FCC*, 740 F.3d 623, 632 (D.C. Cir. 2014). "Accordingly, EPA must point to something in either the Clean Air Act or the [Administrative Procedure Act] that gives it authority to stay the [2016 Rule]." *Clean Air Council v. Pruitt*, 2017 WL 2838112, at \*4 (D.C. Cir. July 3, 2017). Here, EPA fails to cite any statutory authority for the Proposed Stay Rules, but references Clean Air Act section 307(d)(7)(B). Section 307(d)(7)(B) authorizes the EPA Administrator to "convene a proceeding for reconsideration" if a person "raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection" within the public comment period or if the grounds for such objection arose after the public comment period and "if such objection is of central relevance to the outcome of the rule." 42 U.S.C. § 7607(d)(7)(B). Section 307(d)(7)(B) only provides, however, for a limited *three-month* administrative stay of the rule during reconsideration. *Id.*; *see also Lead Indus. Ass'n v. EPA*, 647 F.2d 1184, 1186 (D.C. Cir. 1980) (the Act "limits any stay that may be issued by EPA or a court during . . . reconsideration to a period of no longer than three months."). Indeed, in a separate notice of proposed rulemaking delaying another Clean Air Act rule, EPA recently acknowledged that the term of an administrative stay granted pursuant to Section 307(d)(7)(B) is limited to three months. *See Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act; Further Delay of Effective Date*, 82 Fed. Reg. 27,133, 27,134 (June 14, 2017). Therefore, EPA's Proposed Stay Rules based on the grant of reconsideration contravene the express language of Clean Air Act section 307(d)(7)(B).

EPA further makes the vague assertion that "[w]hen we have issued similar stays in the past, it has often been our practice to also propose a longer stay through a rulemaking process." 82 Fed. Reg. at 27,646 (citing 74 Fed. Reg. 36,427 (July 23, 2009)). In that final action, EPA relied on Clean Air Act section 301(a) to issue a nine-month stay of a regulation. *See* 74 Fed. Reg. 48,153 (Sept. 22, 2009). To the extent EPA is relying here on its general rulemaking authority under section 301 of the Clean Air Act for the Proposed Stay Rules, the D.C. Circuit has held that EPA cannot do so. *See Natural Res. Def. Council v. Reilly*, 976 F.2d 36, 40-41

(D.C. Cir. 1992). In *Reilly*, EPA attempted to use its general rulemaking authority under Section 301 to stay the effective date of a previously finalized rule. Section 301 authorizes the EPA Administrator “to prescribe such regulations as are necessary to carry out his functions under this chapter.” 42 U.S.C. § 7601(a)(1). *Reilly*, 976 F.2d at 40. The D.C. Circuit held that section 301 does not authorize EPA to stay regulations already promulgated and, in fact, “EPA ha[s] no authority to stay the effectiveness of a promulgated standard except for the single, three-month period authorized by section 307(d)(7)(B).” *Id.* at 40-41; *see also* 42 U.S.C. § 7607(b)(1) (“[t]he filing of a petition for reconsideration by the Administrator of any otherwise final rule or action shall not affect the finality of such rule or action ... *and shall not postpone the effectiveness of* such rule or action”) (emphasis added); *Id.* § 7607(d)(7)(B) (“such reconsideration *shall not postpone the effectiveness of* the rule.”) (emphasis added). The decision in *Reilly* comports with the Clean Air Act’s express mandate that regulations shall go into effect upon promulgation. *See* 42 U.S.C. § 7611(b)(1)(B) (“Standards of performance or revisions thereof *shall become effective upon promulgation*”) (emphasis added); *see also id.* § 7411(e) (“After the effective date of standards of performance promulgated under this section, it shall be unlawful for any owner or operator of any new source to operate such source in violation of any standard of performance applicable to such source”).

**B. The D.C. Circuit Has Already Ruled That Section 307(d)(7)(B) Does Not Authorize a Stay of the 2016 Rule for the Reconsideration Issues That EPA Has Identified**

Even if Clean Air Act section 307(d)(7)(B) authorized a stay longer than three months pending reconsideration—and it does not—the D.C. Circuit has already ruled that EPA’s first three-month stay was arbitrary and capricious and in excess of EPA’s statutory authority. EPA issued its first, administrative, three-month stay of the 2016 Rule on June 5, 2017, citing Clean Air Act section 307(d)(7)(B) and asserting that industry’s petitions for reconsideration raised new issues that could not have been raised during the rulemaking. A group of environmental organizations, joined by many of the undersigned States, challenged EPA’s decision in the D.C. Circuit and filed an “emergency motion for a stay or, in the alternative, summary vacatur.”

On July 3, 2017, the D.C. Circuit vacated the stay as unauthorized by Clean Air Act section 307(d)(7)(B). The Court found, upon examination of the record, that “industry groups had ample opportunity to comment on all four issues on which EPA granted reconsideration, and in several instances, the agency incorporated those comments directly into the final rule.” *Clean Air Council*, 2017 WL 2838112 at \*9. Therefore, “[b]ecause it was not ‘impracticable’ for industry groups to have raised such objections during the notice and comment period, CAA section 307(d)(7)(B) did not require reconsideration and did not authorize the stay.” *Id.* As such, EPA’s reliance on the same four reconsideration issues as the rationale for its Proposed Stay Rules makes the twenty-seven month stay arbitrary and capricious as well.

#### **IV. EPA’S PROPOSED STAY RULES ARE ARBITRARY AND CAPRICIOUS, AN ABUSE OF DISCRETION, AND CONTRARY TO LAW**

EPA’s Proposed Stay Rules are also arbitrary and capricious because EPA fails either to justify reversal of its position as set forth in the 2016 Rule, or reconcile its decision to stay the 2016 Rule with the determination in its rulemaking record that the 2016 Rule is necessary to address harm to public health and welfare. Further, because the evidence shows that Administrator Pruitt has prejudged the Proposed Stay Rules, his involvement as decision maker is a violation of due process. Finally, EPA’s failure to require Administrator Pruitt to undergo the ethics authorization process before participating in the rulemaking is an action without observance of procedure of law rendering the Stay Rules subject to reversal under section 307(d)(9)(D) of the Clean Air Act.

##### **A. EPA Fails to Justify its Change of Position or Reconcile the Proposed Stay Rules with Its Own Rulemaking Record**

As the Supreme Court has explained, “[o]ne of the basic procedural requirements of administrative rulemaking is that an agency must give adequate reasons for its decisions.” *Encino Motorcars LLC v. Navarro*, 136 S. Ct. 2117, 2125 (2016). The requirement is satisfied “when the agency’s explanation is clear enough that its ‘path may reasonably be discerned.’” *Id.* (citing *Bowman Transp., Inc. v. Arkansas-Best Freight System, Inc.*, 419 U.S. 281, 286 (1974)); *see also Motor Vehicle Mfrs. Ass’n of the United States v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (an agency must “examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.”) “But where the agency has failed to provide even that minimal level of analysis, its action is arbitrary and capricious and so cannot carry the force of law.” *Encino*, 136 S. Ct. at 2125.

EPA’s Proposed Stay Rules are “essentially an order delaying the rule’s effective date, and [the D.C. Circuit] has held that such orders are tantamount to amending or revoking a rule.” *Clean Air Council* 2017 WL 2838112 at \*2; *see Public Citizen v. Steed*, 733 F.2d 93, 98 (D.C. Cir. 1984) (holding the temporary suspension of a rule pending a new notice and comment process “is a paradigm of a revocation” and represents “a 180 degree reversal of [the agency’s] ‘former views as to the proper course.’”). In addition, because the Proposed Stay Rules represent a change in EPA’s position, the Administrative Procedure Act requires that the agency meet several requirements, including that it: (1) display “awareness that it is changing position;” (2) show that “the new policy is permissible under the statute;” (3) “believe[]” the new policy is better; and (4) provide “good reasons” for the new policy. *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009). And if the Proposed Stay Rules rest upon factual findings that contradict a prior policy, then the agency must include “a reasoned explanation . . . for disregarding facts and circumstances that underlay or were engendered by the prior policy.” *Id.* at 515-16; *see also Lone Mountain Processing, Inc. v. Secretary of Labor*, 709 F.3d 1161, 1164 (D.C. Cir. 2013) (“[A]n agency changing its course must supply a reasoned analysis indicating

that prior policies and standards are being deliberately changed, not casually ignored. Failing to supply such analysis renders the agency's action arbitrary and capricious.")

Here, EPA has not met any of these criteria. First, it has not displayed any awareness that it is changing its position that the 2016 Rule is necessary now to address harm to public health and welfare from oil and natural gas facilities. Second, it has failed to demonstrate that delaying the 2016 Rule's compliance obligations is permissible under the Clean Air Act, as discussed above. Third, EPA has not even articulated a reasonable belief that the delay is consistent with any of the statute's objectives. Fourth, it has not provided "good reasons" for the Proposed Stay Rules. EPA's reason for the second, proposed, three-month stay is to avoid the potential gap and "resulting confusion" created by the expiration of EPA's original administrative three-month stay (which was struck down by the D.C. Circuit in July of 2017) and the effective date of EPA's proposed two-year stay. 82 Fed. Reg. 27,641. EPA's reason for the proposed two-year stay is to give EPA "sufficient time to propose, take public comment, and issue a final action on the issues concerning the specific requirements on which EPA has granted reconsideration." 82 Fed. Reg. 27,645. Thus, in issuing the Proposed Stay Rules, EPA relies solely on the reconsideration issues—a rationale already rejected by the D.C. Circuit. Finally, EPA has not provided *any* reasoned basis for rejecting or revising the conclusions set forth in the rulemaking record for the 2016 Rule, and has not demonstrated why it can now reject those findings. Indeed, as in *Encino*, EPA has "offered barely any explanation" for its change in position. *Encino*, 136 S. Ct. at 2126. In promulgating the 2016 Rule, EPA found significant environmental and health benefits to reducing methane emissions from the oil and natural gas sector. EPA's Proposed Stay Rules contradicts these findings, and EPA must reconcile its significant change in position with its own rulemaking record.

#### **B. EPA Cannot Rely on Administrative Procedure Act Section 705 for EPA's Proposed Stay Rules**

Under section 705 of the Administrative Procedure Act, an agency "may postpone the effective date of action taken by it, pending judicial review" when it "finds that justice so requires." 5 U.S.C. § 705. "The standard for [this type of] stay at the agency level is the same as the standard for a stay at the judicial level: each is governed by the four-part preliminary injunction test applied in this Circuit." *Sierra Club v. Jackson*, 833 F.Supp.2d 11, 30 (D.D.C. 2012). Thus, to the extent EPA is relying on section 705 to postpone the effective date of the 2016 Rule, EPA must first demonstrate that "legal challenges to the agency action are likely to succeed on the merits, that there will be irreparable harm absent a stay, that this irreparable harm outweighs the denial of the rule's benefits during the stay, and that the public interest is served by a stay." *Id.* EPA has failed to make that showing.

EPA also fails to draw a rational connection between the Proposed Stay Rules and any pending judicial review of the 2016 Rule. *See Sierra Club, supra*, 833 F.Supp.2d at 34 ("EPA seeks to justify a stay of its rules 'pending judicial review,' the agency must have articulated, at a minimum, a rational connection between its stay and the underlying litigation in the court of appeals.") Drawing that rational connection will prove difficult given that on May 18, 2017, EPA

successfully moved the D.C. Circuit to hold in abeyance the pending litigation over the merits of the 2016 Rule. Per Curiam Order Granting Mot. to Hold Cases in Abeyance, *American Petroleum Institute v. EPA*, No. 13-1108 (D.C. Cir., May 18, 2017) (ECF No. 1675813). Moreover, EPA's Proposed Stay Rules are tethered solely to objections raised in reconsideration petitions and make no mention of pending litigation. Section 705 does not authorize an agency to postpone the effective date of a rule pending reconsideration.

Finally, the 2016 Rule became effective on August 2, 2016, ten months *before* EPA proposed this twenty-seven month stay, which is “essentially an order delaying the rule’s effective date.” See *Clean Air Council*, WL 2838112 at \*2. EPA therefore lacks authority to issue the Proposed Stay under section 705, because that provision only allows agencies to “postpone the effective date” of a rule before it takes effect. As the D.C. Circuit has found, section 705 only “permits an agency to postpone the effective date of a not yet effective rule, pending judicial review.” *Safety-Kleen Corp. v. EPA*, No. 92-1629, 1996 U.S. App. LEXIS 2324, at \*2-3 (D.C. Cir. Jan. 19, 1996) (per curiam). Consistent with its plain meaning, EPA has not interpreted section 705 to authorize the agency to postpone the effective date of a rule whose effective date has already passed. See 76 Fed. Reg. at 28,326 (finding that the “effective date” of the rule “ha[d] already passed and thus a stay under APA section 705 [wa]s not appropriate”). Therefore, any attempt by EPA to rely on section 705 now for EPA’s Proposed Stay Rules directly contravenes EPA’s prior interpretation of that statutory provision.

**C. Administrator Pruitt’s Involvement in EPA’s Rulemaking Process on the Proposed Stay Rules Is a Violation of Due Process, Invalidating Any Action to Finalize the Stays**

Administrator Pruitt should recuse himself from any further involvement in EPA’s Proposed Stay Rules because a failure to do so would violate due process and render the final agency action staying the rule invalid. A government decision maker has prejudged the factual and legal issues in an administrative process if he has already made up his mind before the rulemaking proceedings begin. See *Lead Indus. Ass’n v. EPA*, 647 F.2d 1130, 1174 (D.C. Cir. 1980). In that circumstance, unless the decision maker is recused from participating in the rulemaking, the agency violates due process. See *Ass’n of Nat’l Advertisers, Inc. v. FTC*, 627 F.2d 1151, 1170, 1174 (D.C. Cir. 1979). A final agency action reached in violation of due process is invalid under both the Clean Air Act, 42 U.S.C. § 7607(d)(9), and the Administrative Procedure Act, 5 U.S.C. § 706(2).

Here, only one year ago, then-Oklahoma Attorney General Pruitt and other state attorneys general challenged the 2016 Rule as “in excess of the agency’s statutory authority . . . arbitrary, capricious, an abuse of discretion and not in accordance with law,” and requested the court “to hold unlawful and set aside the rule.” Petition for Review, *West Virginia v. EPA*, No. 16-1264 (D.C. Cir., Aug. 2, 2016) (ECF No. 1629120). The attorneys general told the court they “believe strongly that EPA lacks legal authority to promulgate this Rule” and, therefore, sought expedited briefing. Reply in Support of Petitioners’ Motion to Govern Further Proceedings, *West Virginia v. EPA*, No. 16-1264 (D.C. Cir., Nov. 14, 2016) (ECF No. 1645884). During his confirmation

process, Administrator Pruitt acknowledged that he “participated personally and substantially” in that case.<sup>11</sup> Later, EPA released a memorandum dated May 4, 2017, in which Administrator Pruitt agreed to recuse himself from specified active court proceedings in which he had sued EPA while serving as Oklahoma Attorney General, including litigation regarding the 2016 Rule.<sup>12</sup> Significantly, Administrator Pruitt’s May 2017 recusal memo makes clear that he has not recused himself from participating in the underlying EPA rulemaking for litigation matters in which he has acknowledged a conflict. Thus, Administrator Pruitt has refused to recuse himself from—or even ask for ethics authorization to participate in—rulemakings such as EPA’s Proposed Stay Rules.<sup>13</sup>

Administrator Pruitt has already made up his mind that the 2016 Rule must be rescinded due to the illegality he alleged, and EPA’s Proposed Stay Rules effectively achieve the same outcome. Administrator Pruitt reiterated during his Senate confirmation process that he continued to believe that: “In each case filed against the EPA, in the view of the State of Oklahoma, the EPA had acted in excess of the authority granted to it by Congress.”<sup>14</sup> After being confirmed, Administrator Pruitt continued to issue public statements that he still held the view that all of the lawsuits he filed, such as the one to overturn this 2016 Rule, were correct because EPA had acted outside its statutory authority in issuing the rules.<sup>15</sup> In light of his past conduct

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<sup>11</sup> See Attachment 4, *excerpts from* Questions for the Record for the Honorable E. Scott Pruitt, Senate Environment and Public Works Committee, Hearing entitled, “Nomination of Attorney General Scott Pruitt to be Administrator of the U.S. Environmental Protection Agency,” Jan. 18, 2017, (hereafter “Questions for the Record”), 14 (“As Attorney General of Oklahoma, I have participated personally and substantially in the following suits against the EPA: . . . *West Virginia v. EPA*, No. 16-1264 (D.C. Cir.).”), *full document available at* <https://www.epw.senate.gov/public/cache/files/6d95005c-bd1a-4779-af7e-be831db6866a/scott-pruitt-qfr-responses-01.18.2017.pdf>.

<sup>12</sup> See Attachment 5, My Ethics Obligations, Memorandum from E. Scott Pruitt (May 4, 2017), *available at* <https://foiaonline.regulations.gov/foia/action/public/view/record?objectId=090004d2812efc2b&fromSearch=true>.

<sup>13</sup> When this conflict was pointed out to him by Senators during his confirmation process, Administrator Pruitt responded that he did not understand federal ethics regulations on recusal to apply to regulatory rulemakings of general applicability. See Attachment 4, Questions for the Record, 118 (response to Sen. Markey questions 15, 16), 120 (Markey 21), 226 (response to Sen. Whitehouse question 88).

<sup>14</sup> See Attachment 4, Questions for the Record, 15-16 (response to Sen. Cardin question 13). See also *id.* 39 (response to Sen. Carper question 8) (“As Attorney General, I have brought legal challenges involving EPA regulations out of concern that EPA has exceeded its statutory authority based on the record and law in that matter.”)

<sup>15</sup> On May 11, 2017, Administrator Pruitt’s official EPA Administrator Twitter account sent out a statement directing the public to an article on The Daily Caller website, which quotes him explaining the reason he sued EPA so many times as follows: “They deserved it and they

and his statements that the 2016 Rule is invalid as a matter of law and should not be implemented, Administrator Pruitt has already prejudged the outcome of the current administrative process to determine whether implementation of the 2016 Rule should be stayed. His participation in this rulemaking proceeding is therefore a violation of due process. *Lead Indus. Ass'n v. EPA*, 647 F.2d at 1174; *Ass'n of Nat'l Advertisers, Inc. v. FTC*, 627 F.2d at 1170, 1174. Because of this, any resulting finalization of the Proposed Stay Rules should be struck down on the ground that it is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law,” or “contrary to constitutional right, power, privilege, or immunity.” 42 U.S.C. § 7607(d)(9)(A), (B); 5 U.S.C. § 706(2)(A), (B).

**D. EPA’s Failure to Require Administrator Pruitt to Undergo the Ethics Authorization Process Before Participating in the Rulemaking Is an Action Without Observance of Procedure of Law**

In addition, if Administrator’s Pruitt participates in finalizing the Proposed Stay Rules, they would be subject to reversal due to EPA’s failure to observe procedures required by law. 42 U.S.C. § 7607(d)(9)(D); 5 U.S.C. § 706(2)(D). Federal ethics regulations provide a mechanism for EPA to analyze the appearance of lack of impartiality by Administrator Pruitt in connection with this rulemaking—resulting in either the granting of authorization or disqualification—but EPA did not follow those procedures. That failure is arbitrary and capricious and is “so serious and related to matters of such central relevance to the rule that there is a substantial likelihood that the rule would have been significantly changed if such error[] had not been made.” 42 U.S.C. § 7607(d)(9)(D).

First, EPA failed to require Administrator Pruitt to follow the procedures specified in 40 C.F.R. § 2635.502(d) to obtain ethics authorization before he became involved in the Proposed Stay Rules. That provision sets forth a multifactor test for determining whether an agency employee may participate in a particular matter where it would raise a question in the mind of a reasonable person about the employee’s impartiality.

As Administrator Pruitt conceded in his May 4, 2017, recusal memorandum, he would need to obtain ethics authorization to participate in any of the lawsuits he filed against EPA while serving as Oklahoma Attorney General, as these are considered a “particular matter involving specific parties,” and he has a covered relationship with his recent employer and client, the State of Oklahoma.<sup>16</sup> While it is generally true that the obligation to seek prior ethics

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deserved it because they exceeded their statutory authority, they exceeded their constitutional authority.” See Attachment 6, *available at* <https://twitter.com/EPAScottPruitt/status/862745467679121408>

<sup>16</sup> An employee has a covered relationship with a person or entity for whom he “served as officer, director, trustee, general partner, agent, attorney, consultant, contractor or employee.” 5 C.F.R. § 2635.502(b)(iv).

authorization applies in the case of a “particular matter involving specific parties,”<sup>17</sup> and that rulemakings of general applicability are usually not treated as a “particular matter involving specific parties,” the general rule instructing all federal employees to avoid the appearance of impropriety in carrying out their official duties still applies:

Employees shall endeavor to avoid any actions creating the appearance that they are violating the law or the ethical standards set forth in this part. Whether particular circumstances create an appearance that the law or these standards have been violated shall be determined from the perspective of a reasonable person with knowledge of the relevant facts.

5 C.F.R. § 2635.101(b)(14). Moreover, the ethics regulations specify that an employee’s involvement in matters that do not involve “specific parties,” such as most rulemakings, may still require the employee first to obtain authorization from the agency ethics official. When there is a reasonable question as to whether participation in a matter “would raise a question regarding his impartiality,” the employee is to seek authorization before participating and not participate without such authorization. 5 C.F.R. § 2635.502(a)(2) (stating that in such circumstances the employee should use the same process to determine whether to participate as would apply to the

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<sup>17</sup> Where “the circumstances would cause a reasonable person with knowledge of the relevant facts to question his impartiality in the matter, the employee should not participate in the matter unless he has informed the agency designee of the appearance problem and received authorization from the agency designee.” 40 C.F.R. § 2635.502(a). *See also* 5 C.F.R. § 2635.502(e) (“Unless the employee is authorized to participate in the matter [by the agency designee], an employee shall not participate in a particular matter involving specific parties when . . . the role of a person with whom he has a covered relationship[] is likely to raise a question in the mind of a reasonable person about his impartiality. Disqualification is accomplished by not participating in the matter.”)



other conflicts specified in that section).<sup>18</sup> Here, there is no evidence<sup>19</sup> that Administrator Pruitt has sought and obtained explicit written authorization from EPA's Designated Ethics Official to be involved in this rulemaking. Not only has Administrator Pruitt not obtained this authorization before participating in the rulemaking on the stays, he has denied any obligation to do so.

As discussed in section IV.C, *supra*, the facts are compelling that Administrator Pruitt cannot impartially determine whether a stay of the 2016 rule is appropriate. In view of such circumstances, it was arbitrary and capricious for EPA not to determine whether Administrator's Pruitt should have been disqualified from the rulemaking pursuant to 40 C.F.R. § 2635.502(d).

Second, EPA's error was so serious and related to matters of such relevance to the rules that there is a substantial likelihood that any final rule imposing stays of the 2016 Rule would have been significantly changed if such errors had not been made. It is important to the integrity of this rulemaking process that Administrator Pruitt not participate, as his involvement taints what should be an objective and fair decision making process. Indeed, avoiding after-the-fact repercussions of a conflicted employee's involvement in a matter was one of the reasons why the Office of Government Ethics promulgated the regulation in 5 C.F.R. § 2635.502(a)(2). As it explained:

[E]mployees have long been obligated to act impartially and to avoid even the appearance of loss of impartiality. However, they have not been provided a specific mechanism to resolve difficult issues of whether, in particular circumstances, a possible appearance of loss of impartiality is so significant that it should

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<sup>18</sup> The preamble to the Office of Government Ethics' proposed rule introducing this provision (which was adopted in the final rule), explains that even apart from "particular matters involving specific parties," an employee is expected to use the ethics authorization process when an appearance problem arises: "Notwithstanding the section's use of this concept [specific parties] and its focus on specified relationships, questions about an employee's impartiality can arise from any number of interests or relationships an employee might have and *in connection with his or her participation in matters that do not necessarily involve specific parties*. Proposed § 2635.502 therefore provides that *an employee should use the process* set forth in that section when circumstances other than those specifically described raise questions about his or her impartiality in the performance of official duties." Standards of Ethical Conduct for Employees of the Executive Branch, Proposed Rule, 56 Fed. Reg. 33,778, 33,786 (July 23, 1991) (emphasis added); *see also* Attachment 7, Office of Gov't Ethics Memo DO-06-029 (Oct. 4, 2006) at 7, n.9 ("[A]n agency may require an employee to recuse from particular matters that do not involve specific parties, based on the concern that the employee's impartiality reasonably may be questioned under the circumstances."), *available at*: [https://www2.oge.gov/Web/OGE.nsf/0/C10C6B23AC67F74685257E96005FBDD7/\\$FILE/do-06-02\\_9.pdf](https://www2.oge.gov/Web/OGE.nsf/0/C10C6B23AC67F74685257E96005FBDD7/$FILE/do-06-02_9.pdf).

disqualify them from participation in particular matters. The proposed rule would provide employees with *a means to ensure that their conduct will not be found, as a matter of hindsight, to have been improper.*<sup>20</sup>

As discussed in sections III and IV.A and B, *supra*, EPA has failed to articulate a lawful or reasoned basis for staying the 2016 Rule. There is a substantial likelihood that an impartial decision maker, confronted by the same facts and law, would have decided that a stay of the 2016 Rule is unwarranted.

## V. CONCLUSION

For these reasons, the States strongly oppose EPA's Proposed Stay Rules and respectfully request that EPA not finalize the twenty-seven month stay of the 2016 Rule.

Sincerely,

FOR THE STATE OF CALIFORNIA

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By: /s/ Kavita P. Lesser

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<sup>20</sup> Proposed Rule, Standards of Ethical Conduct for Employees of the Executive Branch, Proposed Rule, 56 Fed. Reg. 33,778, 33,786 (July 23, 1991) (emphasis added).

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## ATTACHMENT 1

**BY CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

**New York Attorney General Eric T. Schneiderman  
Connecticut Attorney General George Jepsen  
Delaware Attorney General Joseph R. Biden, II  
Maryland Attorney General Douglas F. Gansler  
Massachusetts Attorney General Martha Coakley  
Rhode Island Attorney General Peter Kilmartin  
Vermont Attorney General William H. Sorrell**

December 11, 2012

Lisa P. Jackson  
Administrator  
Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, N. W.  
Washington, DC 20460

**RE: Clean Air Act Notice of Intent to Sue for Failure to Determine  
Whether Standards of Performance Are Appropriate for Methane  
Emissions from Oil and Gas Operations, and to Establish Such Standards  
and Related Guidelines for New and Existing Sources**

Dear Administrator Jackson:

The States of New York, Connecticut, Delaware, Maryland, Rhode Island, and Vermont, and the Commonwealth of Massachusetts, respectfully request that the Environmental Protection Agency remedy its failure under the Clean Air Act to set performance standards for new sources and guidelines for existing sources that curb emissions of methane from the oil and gas sector. EPA has determined that emissions of this potent greenhouse gas endanger public health and welfare, and that processes and equipment in the oil and gas sector emit vast quantities of methane. Moreover, EPA has compelling data, including from 18 years of experience administering the Natural Gas Star Program, demonstrating that many measures to avoid (or reduce) methane emissions from new and existing oil and gas operations are available and cost-effective. Despite these findings, EPA has missed the applicable deadline for determining whether standards and guidelines limiting methane emissions from oil and gas operations under section 111 of the Clean Air Act are appropriate and for issuing such standards. EPA's ongoing failure to address the sector's methane emissions violates the Clean Air Act and harms the health and welfare of our residents.

**I. Background**

From severe droughts and heat waves to a string of devastating storms in the northeast over the last two years, it is becoming ever more apparent that increasing greenhouse gas pollution contributes to climate disruption in the U.S. and around the globe. Methane is a very potent greenhouse gas -- pound for pound, it warms the climate about 25 times more than carbon dioxide. EPA has found that the impacts of climate change caused by methane include "increased air and ocean temperatures, changes in

precipitation patterns, melting and thawing of global glaciers and ice, increasingly severe weather events, such as hurricanes of greater intensity and sea level rise.” 77 Fed. Reg. 49,490, 49,535 (Aug. 23, 2011). Oil and gas systems are the largest source of methane emissions in the U.S. and the second largest industrial source of U.S. greenhouse gas emissions behind only electric power plants. For example, methane emissions from this sector make almost one-fifth of the contribution to climate change that carbon dioxide emissions from coal-fired power plants do. EPA must fully comply with its legal obligations under the Clean Air Act to regulate emissions that endanger public health and welfare by controlling this significant source of dangerous greenhouse gas pollution.

Section 111 of the Clean Air Act requires EPA to establish standards of performance governing the emission of air pollutants from new sources in the oil and gas sector and to review, and if appropriate, revise, those standards at least every 8 years. *See* 42 U.S.C. § 7411(b)(1)(B). As part of this 8-year review, EPA had a mandatory duty (1) to make a determination whether standards covering methane emissions are “appropriate,” and, (2) if it is appropriate, to promulgate standards. The Act and EPA’s regulations also require EPA to issue emission guidelines covering the release of methane from any existing oil and gas operations for which standards of performance have been issued. *See id.* § 7411(d); 40 C.F.R. § 60.22(a).

EPA originally promulgated standards of performance for the oil and gas sector in 1985. The 8-year deadline for reviewing these standards expired in 1993. EPA finally signed a rule to complete the mandated review for oil and gas operations on April 17, 2012. 77 Fed. Reg. 49,490 (Aug. 16, 2012). However, although the agency revised the standards for several pollutants, EPA did not make the required appropriateness determination regarding methane, nor did EPA establish performance standards or emission guidelines for methane emissions from this industrial sector.

Consequently, unless you promptly correct these failures, we intend to file suit in federal district court against you as EPA administrator and EPA for failures to timely:

- (1) make the required determination whether standards of performance limiting methane emissions from oil and gas sources are appropriate and, if so, failing to timely issue revised performance standards limiting methane emissions from this source category; and
- (2) issue emissions guidelines for the control of methane emissions from existing oil and gas sources.

Jurisdiction to adjudicate and enforce the Administrator’s failure to carry out non-discretionary duties lies with the district court under section 304 of the Act. *See Environmental Defense Fund v. Thomas*, 870 F.2d 892, 897 (2d Cir. 1989); *Portland Cement Ass’n v. EPA*, 665 F.3d 177, 194 (D.C. Cir. 2011). This letter provides notice as required under section 304 of the Clean Air Act, 42 U.S.C. § 7604, and 40 C.F.R. part 54. Unless EPA takes the required actions by the end of the applicable notice period, we intend to bring a suit for EPA’s failure to perform the non-discretionary duties outlined in 42 U.S.C. §§ 7411(b)(1)(B), 7411(d), and 40 C.F.R. § 60.22(a), and for the agency’s unreasonable delay in the performance of these duties. The suit will seek injunctive and declaratory relief, the costs of litigation, and may seek other relief.

## **II. EPA Failed to Perform Its Non-Discretionary Duties to Determine Whether Standards of Performance for Methane Are Appropriate and, if so, to Establish Such Standards and Related Emissions Guidelines.**

Section 111 of the Clean Air Act requires EPA to establish “standards of performance” for emissions of air pollutants from categories of new, modified, and existing sources. After EPA sets initial



standards of performance for a listed category, section 111(b)(1)(B) imposes a timetable for EPA to review and revise those standards: “The Administrator shall, at least every 8 years, review and, if appropriate, revise such standards following the procedure required by the subsection for promulgation of such standards.” 42 U.S.C. § 7411(b)(1)(B). EPA failed timely to review the standards of performance that it initially established in 1985 for sources in the oil and gas sector, leading multiple groups to file suit in 2009 to compel such review. That case, *Wild Earth Guardians v. EPA*, No. 1:09-CV-00089 (D.D.C.), resulted in a consent decree setting forth a schedule for proposing any final revisions by November 30, 2011.

In August 2011, EPA proposed revisions to the oil and gas NSPS. 76 Fed. Reg. 52,738 (Aug. 23, 2011). EPA did not propose any standards for methane emissions, despite previously determining that methane and other greenhouse gases endanger public health and welfare. 74 Fed. Reg. 66,496 (Dec. 15, 2009). Numerous organizations submitted comments on the proposed rule stating that EPA was required, as part of its mandated 8-year statutory review, to determine whether it was “appropriate” to add standards of performance for additional, previously-unregulated pollutants, such as methane, and, if so, to revise them accordingly.

EPA signed a final rule revising some aspects of the oil and gas standards on April 17, 2012, which was published in the Federal Register on August 16, 2012. 77 Fed. Reg. 49,490. EPA failed to determine whether it is appropriate to establish methane standards. Instead, EPA stated that “[i]n this rule, we are not taking final action with respect to regulation of methane. Rather, we intend to continue to evaluate the appropriateness of regulating methane with an eye toward taking additional steps if appropriate.” *Id.* at 49,513. The agency further stated that “over time,” it would assess emissions data received pursuant to the recently implemented greenhouse gas emissions reporting program, but set forth no timetable for taking final action to address methane emissions. *Id.*

EPA’s failure to decide one way or another within the 8-year statutory review deadline whether it is appropriate to revise the oil and gas NSPS to regulate methane emissions violates section 111(b)(1)(B) of the Clean Air Act. That section imposes a clear-cut nondiscretionary duty of timeliness that requires EPA to make a decision within the 8-year review period whether it is “appropriate” to revise the standards to regulate methane, regardless of whether the substance of that decision is discretionary. The Second Circuit Court of Appeals in *Thomas*, 870 F.2d at 900, held that substantially similar language contained in section 109(d) of the Clean Air Act -- which provides that, at five-year intervals, EPA “shall complete a thorough review” and “promulgate such new standards as may be appropriate”-- imposed a nondiscretionary duty to make a decision. In that case, like here, EPA had declined to make any formal decision to either revise or decline to revise the standards for a specific pollutant. EPA argued that its non-decision was unreviewable by the D.C. Circuit under section 307 because it involved no decision or other agency “action” and was also not subject to challenge in district courts under section 304 because it was discretionary.” *Id.* at 896. The Court rejected EPA’s argument, holding that EPA may not leave the matter “in a bureaucratic limbo subject neither to review in the District of Columbia Circuit nor to challenge in the district court. *Id.* at 900. While the Court agreed that the “as may be appropriate” language of section 109(d) provided EPA with discretion to determine whether revision was appropriate and what the substance of those revisions should be, the presence of the language “shall complete” and “required” in that section implied that the district court “has jurisdiction to compel the Administrator to make *some* formal decision whether or not to revise the [standards].” *Id.*

Here, section 111(b)(1)(B) contains the mandatory term “shall” -- which applies to both of the verbs “review” and “revise”-- and a clear-cut statutory deadline of “at least every 8 years.” Because EPA cannot make any revisions without first completing its review, the language requires EPA to both complete the review and make the revisions within the 8-year review period. Therefore, a district court

has jurisdiction to compel EPA to make a determination one way or another as to whether revision of the oil and gas NSPS is appropriate and to issue any revision it determines is appropriate.

In addition, EPA has a mandatory duty to include in its 8-year review new pollutants like methane that it has not previously regulated, but that it has since determined endanger public health and welfare. It would be wholly inconsistent with the mandatory nature of section 111 if EPA could refuse to address, as part of its 8-year review, air pollutants that are emitted by an already-listed source category and that EPA has already determined endanger public health and welfare. Rather, the structure of the Act demonstrates Congress' intent that EPA thoroughly review and revise NSPS for a source category at least every 8 years and not limit such review to making changes to existing standards, but instead require EPA to enact more stringent air pollution requirements as circumstances change, as new information becomes available regarding the adverse public health and welfare effects of air pollutants, and as new technologies become available to control emissions of such pollutants. Congress contemplated the 8-year review to encompass EPA's revision of the standards to address other air pollutants, particularly those emitted by a source category that, based on current information, are now determined to significantly contribute to that source's endangerment of public health and welfare and/or for which there is demonstrated control technology available. Further, EPA's past practice confirms that the agency must consider during its 8-year review all of the air pollutants emitted by the source category under review and set NSPS for any of those pollutants that cause or contribute significantly to that source's endangerment of public health and welfare and for which there is demonstrated control technology. *See* 41 Fed. Reg. 3826-27 (Jan. 26, 1976) (addition of standards for SO<sub>2</sub> and CO in NSPS for primary aluminum reduction plants); 42 Fed. Reg. 22506-07 (May 3, 1977) (addition of standards for NO<sub>x</sub>, SO<sub>2</sub>, and CO in NSPS for lime manufacturing plants); 49 Fed. Reg. 25,106-07 (June 19, 1984) (addition of standards for PM, CO, and hydrocarbon emissions in NSPS for fossil fuel-fired industrial steam generating units).

EPA failed to act on regulation of methane under section 111 despite possessing extensive information that adding methane standards for oil and gas operations is "appropriate." In prior 8-year reviews of standards of performance under section 111, EPA has consistently applied two criteria in determining whether it is appropriate to include a standard for a health- and welfare-endangering air pollutant: (i) the extent of the source category's contribution to the emissions of the pollutant, and (ii) the availability of methods to reduce those emissions. *See, e.g.,* 75 Fed. Reg. 54,970 (Sept. 9, 2010) (finalizing new NO<sub>x</sub> standard for cement plants). Applying these criteria to the oil and gas sector demonstrates that methane standards are appropriate at this time.

First, EPA has recognized that "processes in the Oil and Natural Gas source category emit significant amounts of methane." 76 Fed. Reg. at 52,756/1. Indeed, the proposal stated that the sector's methane emissions are equivalent to more than 328 million metric tons of carbon dioxide per year. *Id.* at 52,756/2. As a result, oil and gas operations are the second largest industrial source of U.S. greenhouse gas emissions, behind only electric power plants. *Cf.* 74 Fed. Reg. 16,448, 16,597 Table VIII-1 (April 10, 2009) (showing 2009 estimates of greenhouse gas emissions from other industrial source categories). As EPA explained in the 2012 final rule, "methane emissions from the oil and gas industry represent about 40 percent of the total methane emissions from all sources and account for about 5 percent of all CO<sub>2</sub>e [carbon dioxide equivalent] emissions in the United States, with natural gas systems being the single largest contributor to United States anthropogenic methane emissions." 77 Fed. Reg. at 49,535/2. Although EPA projects that the standards adopted in the 2012 final rule for emissions of volatile organic compounds (VOCs) and hazardous air pollutants will have the incidental benefit of also reducing annual methane emissions by about 19 million metric tons CO<sub>2</sub>e, *id.* at 49,535/3, the vast majority of methane emissions from this sector will remain uncontrolled.

EPA's failure even to consider directly controlling methane emissions through standards and guidelines resulted in the omission of controls for certain operations that emit large amounts of methane.

For example, EPA declined to establish standards for compressors and pneumatic controllers in the natural gas transmission and distribution segment asserting that, although this equipment emits large quantities of methane, much of the VOCs already have been removed by the time the natural gas stream reaches these sources. *See* 77 Fed. Reg. at 49,522-23 (declining to regulate transmission and distribution compressors because of “the relatively low level of VOC emitted from these sources”).

Second, there are readily available methods to reduce methane emissions. In fact, the high methane content of these currently uncontrolled emissions means that adopting standards and guidelines that require methane emissions controls would be cost-effective (or even profitable) at many of these additional emission points. In the final rule, EPA recognized the economic value of emissions control measures for oil and gas equipment that lead to the recovery of hydrocarbon products, including methane, “that can be used on-site as fuel or reprocessed within the production process for sale.” 77 Fed. Reg. at 49,534/1. Indeed, EPA found that the rule “will result in net annual costs savings of about \$11 million (in 2008 dollars).” *Id.* By ending the waste of methane at sources of emissions not covered by the standards for VOCs, standards of performance that address methane emissions directly likely would add to the economic benefits of the rule. For instance, although compressors located at a wellhead or in the transmission, storage, and distribution segment are not covered under the rule, 77 Fed. Reg. at 49,492/2, EPA has determined that the payback period for compressor maintenance activities that reduce methane emissions is a mere 1 to 3 months. *See* EPA, “Reducing Methane Emissions from Compressor Rod Packing Systems” (Oct. 2006) at 1 (indicating payback periods from 1 to 3 months for compressor maintenance activities that reduce methane emissions). In addition, through EPA’s voluntary Natural Gas Star Program, EPA has worked with oil and gas companies to identify more than 100 cost-effective technologies and practices to reduce methane emissions from sources of emissions not covered by the rule. *See* <http://www.epa.gov/gasstar/tools/recommended.html>.

Section 111(d) of the Clean Air Act also requires EPA to address methane emissions from existing sources, as well as from new and modified facilities. 42 U.S.C. § 7411(d)(1)(A). The Act requires EPA to establish procedures under which each state submits to the agency a plan to adopt, implement, and enforce standards of performance for existing sources for certain pollutants, and to promulgate standards of performance under such plans. *Id.* § 7411(d). The existing source requirements apply to those pollutants, such as methane, that have not been identified as criteria pollutants or hazardous air pollutants, but that are regulated under the new source performance standards for a category of sources. *Id.* § 7411(d)(1). Thus, the Act creates a direct connection between the new source standards and those to be developed for existing sources.

EPA’s regulations require the agency to publish “emissions guidelines” “which reflect[] the degree of emission reduction achievable through the application of the best system of emission reduction which (taking into account the cost of such reduction) the Administrator has determined has been adequately demonstrated for designated facilities.” 40 C.F.R. §§ 60.21(e), 60.22(a, b). These guidelines are implemented by state agencies who develop and submit to EPA plans to curb emissions of designated pollutants from existing sources. *Id.* § 60.23(a); 42 U.S.C. § 7411(d)(1). EPA has issued emission guidelines at the same time as new source standards for a listed category. *See* 62 Fed. Reg. 48,348 (Sept. 15, 1997) (standards of performance and emissions guidelines for hospital/medical/infectious waste incinerators); 61 Fed. Reg. 9905 (Mar. 12, 1996) (same for municipal solid waste landfills); 60 Fed. Reg. 65,387 (Dec. 19, 1995) (same for municipal waste combustors).

In sum, EPA has failed to review and update as necessary the existing oil and gas standards. EPA’s continuing failure to make a final appropriateness determination during its 8-year review and to make the necessary revisions is contrary to section 111(b)(1)(B) of the Clean Air Act. *See* 42 U.S.C. § 7411(b)(1)(B). EPA’s failure to make an appropriateness determination also has prevented EPA from fulfilling its duty to publish emissions guidelines covering methane emissions from existing facilities in

the oil and gas sector. EPA's continuing failure to publish these guidelines is contrary to section 111(d) of the Clean Air Act and the regulations implementing that section. *See* 42 U.S.C. § 7411(d); 40 C.F.R. § 60.22(a). We are therefore providing notice that, as of 60 days from the date of this letter, we intend to sue you as EPA administrator and EPA for EPA's failure to take these non-discretionary actions.

### **III. EPA Has Unreasonably Delayed Determining Whether Standards of Performance for Oil and Gas Operations Are Appropriate and, if so, Establishing Such Standards and Related Emissions Guidelines.**

As set forth above, section 111(b)(1)(B) imposes a non-discretionary duty on EPA to review and, if appropriate, revise the NSPS for each category of sources, and section 111(d) and 40 C.F.R. § 60.22(a) impose a non-discretionary duty to establish emissions guidelines covering existing sources. Even if those provisions can be read to contain any ambiguity as to the deadline for these mandatory duties, EPA has unreasonably delayed taking action on methane emissions from the oil and gas sector.

EPA has long known the significance of the oil and gas sector's contribution to methane emissions and the availability and cost-effectiveness of measures for reducing those emissions. EPA's knowledge that oil and gas operations are one of the nation's largest methane sources dates to at least 1997, as the agency has published annual sector-by-sector inventories of U.S. greenhouse gas emissions since 1997, covering emissions since 1990.<sup>1</sup> Similarly, EPA has long had ample data on measures for controlling methane emissions. For example, in 2008, EPA explained that because of its experience implementing the agency's Natural Gas STAR Program, a voluntary public-private partnership with the oil and gas industry initiated in 1993, "many of [the] technologies and management practices" available to control methane emissions from the sector "have been well documented (including information on cost, benefits and reduction potential) and implemented in oil and gas systems throughout the U.S." EPA, Office of Air and Radiation, Technical Support Document for the Advanced Notice of Proposed Rulemaking for Greenhouse Gases; Stationary Sources, Section VII at 30 (June 2008).

EPA has been actively engaged in rulemaking to revise the oil and gas sector standards of performance at least since April 2010, when the agency began sending requests to visit regulated facilities to gather information. *See, e.g.*, Letter from K.C. Hustvedt, EPA, to Tom Monahan, ExxonMobil Production Co. (Apr. 30, 2010) Docket No. EPA-HQ-OAR-2010-0505-0053. In response to the 2009 litigation discussed above, EPA proposed revisions to the standards of performance for oil and gas operations in August 2011. 76 Fed. Reg. at 52,738. However, instead of drawing on the successes of the Natural Gas Star Program to propose a course of action, or even soliciting comment on the issue, the agency chose to ignore the problem. The proposal stated only that "[a]lthough this proposed rule does not include standards for regulating [methane emissions], we continue to assess these significant emissions and evaluate appropriate actions for addressing these concerns." *Id.* at 52,756/2. Multiple parties filed comments in November 2011 objecting to the failure to propose methane standards for this source category. Commenters argued that EPA had abundant evidence that uncontrolled methane emissions from oil and gas operations significantly contribute to atmospheric greenhouse gas pollution, that control measures are available and cost-effective, and that methane standards therefore are appropriate and legally required. *See, e.g.*, Comments of Sierra Club et al. at 74-80 (Nov. 30, 2011) Docket No. EPA-HQ-OAR-2010-0505-4240.

Notwithstanding these comments and the detailed information EPA already had in its possession, the agency has failed to make any appropriateness determination regarding the oil and gas sector's

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<sup>1</sup> Links to each annual GHG emissions inventory are at [http://www.epa.gov/climatechange/emissions/usgginv\\_archive.html](http://www.epa.gov/climatechange/emissions/usgginv_archive.html).

methane emissions, or to propose or promulgate performance standards to meet its obligations under section 111(b)(1)(B) of the Act with regard to the oil and gas sector's methane emissions. EPA's failure to complete the rulemaking required under section 111(b)(1)(B) to address methane emissions from new and modified oil and gas operations has also resulted in an unreasonable delay in establishing emissions guidelines for the controlling methane emissions from existing oil and gas sector sources. EPA's unreasonable delay in issuing these guidelines in turn delays both the date by which states must submit plans for the control of methane from existing oil and gas operations, 40 C.F.R. § 60.23(a), and the date by which existing sources must comply with approved pollution control standards, *see id.* § 60.24(c). Therefore, we are also providing 180-day notice that we intend to sue you as EPA administrator and EPA for EPA's unreasonably delaying final agency action to determine whether standards for methane emissions from oil and gas operations are appropriate, to make the necessary revisions to 40 C.F.R. Part 60, and to issue emissions guidelines for methane emissions from existing oil and gas operations.

#### IV. Conclusion

EPA's acknowledgement that oil and gas operations account for a large share of methane emissions points to the urgent need to reduce these emissions. The agency's long experience with control strategies that recover methane emissions from oil and gas operations for productive uses confirms that there are cost-effective measures for this source category that would provide an appropriate basis for establishing a standard of performance for methane emissions. But EPA's failure to make progress in deciding whether standards are appropriate demonstrates that litigation may be needed to prompt the required agency action. Accordingly, the States of New York, Connecticut, Delaware, Maryland, Rhode Island, and Vermont, and the Commonwealth of Massachusetts, submit this notice of intent to sue for EPA's failure to complete the review of the standards of performance for oil and gas operations as mandated by section 111(b)(1)(B) of the Clean Air Act and for the agency's unreasonable delay in the completion of that action. The States of New York, Connecticut, Delaware, Maryland, Rhode Island, and Vermont, and the Commonwealth of Massachusetts, also give notice of their intent to sue for EPA's failure to complete the emissions guidelines for existing sources required by section 111(d) of the Clean Air Act and EPA's regulations at 40 C.F.R. § 60.22(a) and for the agency's unreasonable delay in the completion of that action.

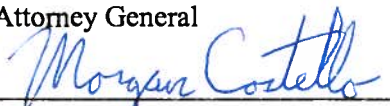
We are willing to explore any effective means of resolving this matter without the need for litigation. However, if we do not hear from you within the applicable time periods provided in section 304 of the Act, we intend to file suit in United States District Court.

Very truly yours,

FOR THE STATE OF NEW YORK

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## ATTACHMENT 2



**New York Attorney General Eric T. Schneiderman  
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Massachusetts Attorney General Martha Coakley  
Oregon Attorney General Ellen F. Rosenblum  
Rhode Island Attorney General Peter F. Kilmartin  
Vermont Attorney General William H. Sorrell**

June 16, 2014

Via Electronic Mail (w/cc to: [oilandgas.whitepapers@epa.gov](mailto:oilandgas.whitepapers@epa.gov))

Gina McCarthy  
Administrator  
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Ariel Rios Building  
1200 Pennsylvania Avenue, N. W.  
Washington, DC 20460

**RE: Comments on EPA Methane White Papers**

Dear Administrator McCarthy:

The Attorneys General of New York, Delaware, Maryland, Massachusetts, Oregon, Rhode Island, and Vermont (together, “States”) respectfully submit these comments on the Environmental Protection Agency’s five white papers addressing major sources of methane emissions from the oil and gas sector. These papers stem from the Administration’s strategy to reduce methane emissions, which EPA acknowledges to be a key element in the President’s Climate Action Plan. The States view EPA’s publication of the white papers as a positive step in the direction of cutting methane emissions from the oil and gas industry. The States urge EPA to take the next logical step of promptly setting emission standards and guidelines for methane for these sources under sections 111(b) and (d) of the Clean Air Act for the sources identified in the white papers.

**1. Background**

The Need for Prompt Action to Reduce Greenhouse Gases, Including Methane

Greenhouse gas pollution is warming our planet, with significant and wide-ranging adverse effects to human health and welfare. The recently released U.S. Global Change Research Program’s Third National Climate Assessment concludes that the evidence of human-induced global warming continues to strengthen and that impacts are increasing across the country. Finding that “climate change, once considered an issue for a distant future, has moved firmly into the present,” the Assessment’s authors present compelling bases for the need to

reduce greenhouse gas emissions from major sources, such as the oil and gas sector.<sup>1</sup> Given the strong body of science that demonstrates the impacts on human health and the environment, EPA must act expeditiously to ensure that major sources of greenhouse gases – such as the oil and gas industry – promptly and aggressively limit their emissions. Prompt and effective action in the power generating, industrial, and transportation sectors are required if the U.S. and the rest of the world are to have a reasonable chance of avoiding the most severe impacts of global warming.

EPA determined in its 2009 endangerment finding that methane is one of the six greenhouse gases that endangers public health and welfare. See 74 Fed. Reg. 46,696 (Dec. 15, 2009). Methane is a very potent greenhouse gas. Pound for pound, it warms the climate about 34 times more than carbon dioxide over a 100-year period, according to the Intergovernmental Panel on Climate Change, and even more over shorter periods. As noted in the White House’s Strategy to Reduce Methane Emissions (March 2014), methane accounts for about 9 percent of greenhouse gas emissions in the country, and that percentage will rise by 2030 unless measures are put in place to cut those emissions. Id. at 1. Not surprisingly, therefore, the President’s Climate Action Plan issued in June 2013 states that curbing emissions of methane is “critical” to our effort to address global climate change. Climate Action Plan at 10.

In evaluating methane emissions from the oil and gas industry, there are four major segments from development to delivery that must be considered during which methane either leaks or is intentionally vented to the atmosphere. Each of these segments represents a significant percentage of methane emissions:

- Production. The production segment includes extraction of oil and gas from a well and use of gathering pipes or lines to move the fuel to a processing facility.
- Processing. The processing segment involves the use of compressors to move natural gas from the well to facilities that remove liquids to create “pipeline quality” gas, which is then shipped via pipelines in the transmission phase.
- Transmission. The transmission segment includes the use of pipelines and compressors to ship natural gas from processing facilities to distributors.
- Distribution. The distribution segment includes the use of city gates to receive the natural gas from pipelines and then distribute the gas through smaller lines to commercial and residential customers.

According to 2012 emissions data from the oil and gas sector, the production segment accounts for approximately 32 percent of methane emissions, the processing segment 14 percent, the transmission segment 33 percent, and the distribution segment 20 percent. U.S. EPA, Greenhouse Gas Inventory Report (April 2014), Table 3-43. Because each of these segments represents a significant percentage of emissions, a successful strategy to reduce methane must address all four segments. EPA has previously acknowledged that its authority under the Clean Air Act covers emissions from all of these segments. 76 Fed. Reg. at 52,745.

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<sup>1</sup> U.S. Global Change Research Program, Climate Change Impacts in the United States: The Third National Climate Assessment (doi:10.7930/J0Z31WJ2) (Jerry M. Melillo, Terese (T.C.) Richmond, and Gary W. Yohe, eds. 2014).

The critical need to limit methane emissions was further underscored by EPA's recently-proposed Clean Power Plan targeting greenhouse gas emissions from existing power plants. One of the underpinnings of that rule is to encourage states to switch from energy generation using coal to generation using natural gas and lower carbon-intensive fuels. Because of the readily-available supply of natural gas in this country, and the fact that natural gas is mostly methane, we must act to ensure that the global warming benefits of switching from coal to natural gas are not diminished because of the release of methane throughout the natural gas system. According to a recent World Resource Institute report, cutting methane leakage rates from natural gas systems to less than one percent of total production would ensure that the climate impacts of natural gas are lower than coal or diesel fuel. World Resources Institute, *Clearing the Air: Reducing Upstream Greenhouse Gas Emissions from U.S. Natural Gas Systems* (March 2013).

#### State Action on Reducing Methane Emissions from the Oil and Gas Sector

It is the States' position that not only is targeting methane emissions a necessary component of a successful strategy to address global warming, it is required under the Clean Air Act. In that vein, in December 2012, seven of the States sent a notice of intent to sue EPA based on the agency's failure to set emission standards for methane in its 2012 New Source Performance Standard (NSPS) rule for the oil and gas sector, 77 Fed. Reg. 49,490 (Aug. 16, 2012). Oregon sent a similar notice of intent in June 2013. As explained in the notice letters, EPA has determined that emissions of this potent greenhouse gas endanger public health and welfare, and that processes and equipment in the oil and gas sector emit vast quantities of methane. We further explained that EPA has compelling data, including from 18 years of experience administering the Natural Gas Star Program, demonstrating that many measures to avoid (or reduce) methane emissions from new and existing oil and gas operations are available and cost-effective. In light of these findings, EPA's failure to determine in its 2012 rulemaking whether it is appropriate at this time to set standards limiting methane emissions from oil and gas operations under section 111 of the Clean Air Act is a violation of a nondiscretionary duty of the Administrator or constitutes an unreasonable delay in taking agency action.

Although the 60-day and 180-day notice periods to bring a nondiscretionary duty and unreasonable delay claim, respectively, have now expired, the States have chosen not to file a lawsuit as of this date in light of the President's subsequent commitment that EPA and other federal agencies would examine how to reduce methane emissions from the oil and gas sector. See Climate Action Plan at 10. This commitment was fleshed out in the Administration's Strategy to Reduce Methane Emissions, which was issued on March 28, 2014. As set forth in the methane strategy document, EPA's issuance of technical white papers is the first step in a process in which the agency is considering direct regulation of methane in the oil and gas sector through rulemaking. Methane Strategy at 2. Under this schedule, the agency would issue any proposed rule this fall, to be followed with the promulgation of a final rule and deadline for state implementation plan submittals by the end of 2016. Id.

In the meantime, a number of states – including Colorado, Ohio, and Wyoming – have enacted regulations to prevent methane leaks from the oil and gas sector. Colorado's rules, passed in February, govern both new and existing wells and require leak inspections either monthly, quarterly, or annually, depending on the amount of emissions. Colorado has stated that

it expects these regulations, which target methane emissions directly rather than as a co-benefit of reducing other pollution, to reduce methane emissions by approximately 65,000 tons per year.

## **2. Comments on Methane White Papers**

EPA's five white papers describe sources of methane emissions in the oil and gas sector and methods that are available to limit those emissions. The States' comments on each of these white papers (Oil and Gas Sector Leaks, Hydraulically Fractured Oil Well Completions and Associated Gas during Ongoing Production, Pneumatic Devices, Compressors, and Liquids Unloading Processes) are set forth below.

### **Leak Detection and Repair**

EPA's "Oil and Natural Gas Sector Leaks" white paper acknowledges that as the oil and natural gas exploration and production industry in the U.S. grows rapidly, so does the potential for greater methane emissions from leaks. As EPA notes, "leak emissions occur through many types of connection points (e.g., flanges, seals, threaded fittings) or through moving parts of valves, pumps, compressors, and other types of process equipment." Oil and Natural Gas Sector Leaks White Paper at 3. The white paper identifies a number of different leak detection technologies, including portable analyzers and infrared cameras, which are readily available and inexpensive. As discussed in the recently issued report by Carbon Limits, "Quantifying Cost-effectiveness of Systematic Leak Detection and Repair Programs Using Infrared Cameras," (March 2014), infrared cameras can be used relatively inexpensively to scan an entire facility for leaks. Furthermore, EPA has determined that "once a leak is found it is almost always economical to repair the leak" and that inspection and maintenance programs "can effectively decrease leak emissions." *Id.* at 55. In light of these findings that leak detection and repair programs can effectively reduce methane emissions from leaks at a reasonable cost, EPA should follow the lead of states such as Colorado that have made these programs mandatory.

Unfortunately, the white paper leaves out a significant source of methane leaks by excluding methane emissions from the distribution sector, *i.e.*, only considering leaks that are "upstream of the city gate." Oil and Natural Gas Sector Leaks White Paper at 3. As EPA noted above, however, EPA has found that methane leaks in distribution from city gates and associated above-ground facilities and from underground pipes comprise about one-fifth of methane emissions from the oil and gas sector. As a result, leaving this segment unaddressed would undermine the President's goal of significantly cutting methane from the oil and gas sector as an important strategy to address global warming.

Distribution sector methane leaks present significant environmental, economic, and safety concerns for states. In Massachusetts alone, leaking pipelines are estimated to release between eight and twelve billion cubic feet of methane a year, at a cost of about \$38 million per year to customers. Shanna Cleveland, *Into Thin Air: How Leaking Natural Gas Infrastructure is Harming Our Environment and Wasting a Valuable Resource* (CLF, Boston), Nov. 2012, at 7, 12, available at [http://www.clf.org/static/natural-gas-leaks/WhitePaper\\_Final\\_lowres.pdf](http://www.clf.org/static/natural-gas-leaks/WhitePaper_Final_lowres.pdf). A number of recent studies have documented extensive leaks from thousands of miles of underground piping in cities such as Boston, New York, and Washington, D.C. *See, e.g.*, Nathan

G. Phillips, et al., Mapping Urban Pipeline Leaks: Methane Leaks Across Boston, *Environmental Pollution*, Vol. 173 (Feb. 2013) at 1-4 (copy attached). For example, a team using infrared imaging discovered 3,356 leaks with fifteen times the global background level for methane in Boston alone. Gas distribution companies in 2011 reported releasing 69 billion cubic feet of natural gas to the atmosphere, almost enough to meet the state of Maine's gas needs for a year and equal to the annual carbon dioxide emissions of about six million automobiles. See *America Pays for Gas Leaks: Natural Gas Pipeline Leaks Cost Consumers Billions* (Staff Report Prepared for Senator Edward J. Markey, Washington, D.C.) Aug. 2013, at 2 & 7, Table 3, available at: [http://www.markey.senate.gov/documents/markey\\_lost\\_gas\\_report.pdf](http://www.markey.senate.gov/documents/markey_lost_gas_report.pdf). As a result, nationally consumers paid at least \$20 billion from 2000-2011 for gas that was unaccounted for and never used. *Id.* at 1.

Some states have undertaken efforts to deal with this problem. Since 2009, Massachusetts has promoted replacement of leaking distribution pipeline through the use of Targeted Infrastructure Replacement Funds that provide for expedited reimbursements to utilities that replace aging steel and cast iron infrastructure, as opposed to the use of traditional rate recovery. The Massachusetts Department of Public Utilities has also opened an investigation into the Service Quality Standards for local electric and gas distribution companies that is investigating, among other items, appropriate metrics for leak detection and response. And, the Massachusetts Legislature recently took up legislation (H3873 and S2073, currently in conference committee) to address gas leaks. Similarly, in New York, the New York Attorney General's Office successfully argued to the Public Service Commission that Consolidated Edison should be required to increase its rate of replacement of old distribution system pipes in New York City in order to reduce methane emissions. As a result of that proceeding, Con Ed is also conducting a study to improve detection of distribution system leaks and quantification of associated leak rates. Although these state efforts represent important steps, federal action is needed to drive a more concerted, immediate effort to eliminate leaks and reduce methane emissions from the distribution segment.

In light of the significant emissions from the distribution segment, at a minimum EPA should broaden its scope of potential regulatory action to encompass emissions from city gates, which the agency has previously identified as the largest source of methane emissions in distribution. See EPA, Technical Support Document: Petroleum and Natural Gas Systems for the 2010 Final Rule – Mandatory Reporting of Greenhouse Gases from Petroleum and Natural Gas Systems – Subpart W, at 76, available at: [http://www.epa.gov/ghgreporting/documents/pdf/2010/Subpart-W\\_TSD.pdf](http://www.epa.gov/ghgreporting/documents/pdf/2010/Subpart-W_TSD.pdf). City gates are metering and pressure regulating facilities located at the custody transfer points where natural gas is delivered from transmission pipelines into the lower pressure lines of local distribution companies. Distribution providers that are participants in EPA's Natural Gas STAR program have reported significant savings and methane emission reductions by implementing inspection and maintenance programs of city gates, which are easier to fix than underground piping. Based on data provided by these companies, implementing these programs at gate stations and associated above-ground facilities can result in gas savings worth up to \$1,800 per year, at a cost between \$20 and \$1,200. EPA, Lessons Learned: Directed Inspection and Maintenance at Gate Stations and Surface Facilities, Pub. No. EPA430-B-03-007 (2003).

## Hydraulically-Fractured Oil Wells

The white paper on hydraulically-fractured oil wells and associated natural gas production underscores the need for emission standards and guidelines for these sources. In its 2012 NSPS, EPA did not include “oil wells” in the definition of affected facilities, so those wells are currently exempt from rule’s reduced emission completion, *i.e.*, “green completion,” requirements that apply to hydraulically-fractured gas wells. The NSPS rule requires flaring of gas wells until January 1, 2015, at which time producers will need to use green completion equipment to separate out the gas from the water and send the gas into pipelines, where it subsequently can be sold.

The white paper supports the conclusion that hydraulically-fractured oil wells (either completion of a newly-fractured well or re-stimulation of a previously fractured well and ongoing production) are also significant sources of both methane and volatile organic compound (VOC) emissions. For example, the Environmental Defense Fund/Stratus study cited in the white paper estimated methane emissions from hydraulically-fractured oil well completions (venting, flaring, etc.) at approximately 247,000 metric tons of methane per year. An ERG/ECR study cited in the white paper estimated VOC emissions at approximately 116,230 tons per year (assuming a 7-day flowback period). Furthermore, the emission figures for methane at least may underestimate the amount of those emissions given that aerial, or “top down” surveys of oil fields in Colorado, Utah, and elsewhere have detected much higher levels of methane than found in the “bottom up” studies in the white paper.

The white paper further shows that the types of measures required for gas wells (complete combustion, green completions) as well as other alternative technologies are available to limit methane and VOC emissions from oil wells. Although the cost effectiveness of these measures appears to vary depending upon different factors, such as the existence of nearby gas pipelines, those considerations can be addressed in the context of implementing the requirements to hydraulically-fractured oil wells.

## Compressors and Pneumatic Devices

Regarding the white papers addressing compressors and pneumatic devices, in the 2012 NSPS rulemaking, EPA identified compressors (reciprocating and centrifugal) and pneumatic devices (controllers and pumps) in the natural gas transmission segment as equipment that emits large quantities of methane. But at the time, EPA declined to establish standards to limit these emissions based on its approach of focusing on reducing VOCs, which are largely removed by the time the natural gas stream reaches compressors and pneumatic devices in the transmission segment. See 77 Fed. Reg. at 49,522-23 (declining to regulate transmission compressors and pneumatics because of “the relatively low level of VOC emitted from these sources”).

In light of the President’s subsequent commitment to reduce methane emissions and the issuance of the methane strategies document, a VOC-focused rationale is no longer supportable. The white papers for compressors and pneumatic devices confirm that this equipment is the source of significant amounts of methane emissions. According to EPA, compressors emitted more than 2 million tons of methane in 2012, with more than 50 percent of that amount coming

from the transmission segment. Oil and Natural Gas Sector Compressors White Paper at 43. Similarly, EPA estimates that pneumatic controllers are responsible for about 13 percent of methane emissions from the oil and gas sector, while pneumatic pumps account for about 16 percent of methane emissions from the production and processing segments. Oil and Natural Gas Sector Pneumatic Devices White Paper at 56-57.

Moreover, both of the white papers demonstrate that methane can be significantly and cost-effectively reduced by establishing emission standards for methane from compressors and pneumatic devices. Centrifugal compressor emissions may be cost-effectively controlled by using dry seals in place of wet seals, while reciprocating compressor emissions may be controlled by the periodic replacement of rod packing systems. Compressors White Paper at 43. Pneumatic controller emissions can be significantly reduced by replacing high-bleed controllers with either low- or zero-bleed controllers, while methane from pneumatic pumps can be cut in many instances by replacing them with instrument air pumps and electric pumps. Pneumatic Devices White Paper at 56-57. These findings in the white papers are consistent with previous EPA determinations concerning this equipment and in other studies. See, e.g., EPA, “Reducing Methane Emissions from Compressor Rod Packing Systems” (Oct. 2006) at 1 (indicating payback periods from 1 to 3 months for compressor maintenance activities that reduce methane emissions); WRI Clearing the Air report at 6 (replacing existing high-bleed pneumatic devices with low-bleed equivalents throughout natural gas system identified as one of three strategies that could cost-effectively cut methane emissions by 30 percent); Natural Resources Defense Council, “Leaking Profits: The Oil and Gas Industry Can Reduce Pollution, Conserve Resources, and Make Money by Preventing Methane Waste,” (2012) (improved maintenance of reciprocating compressors and replacement of high-bleed pneumatic controllers with low-bleed or zero-bleed controllers identified as two of ten cost-effective strategies that could reduce methane emissions from oil and gas sector by 80 percent).

### Liquids Unloading

The white paper on liquids unloading discusses methane and VOCs that are emitted when companies periodically open mature wells to the atmosphere to unload well bore liquids, such as water and condensate, which accumulate in the bottom of the well. This process, typically referred to as a “well blowdown,” can result in large quantities of methane and VOCs being released. Although emission figures vary, EPA estimates that methane and VOC emissions from liquids unloading comprised about 14 percent of emissions from the natural gas production segment in 2012.

Rather than using well blowdown methods to unload liquids and allow the flow of gas from the well to resume, there are available technologies that perform this same function while significantly reducing emissions. As the white paper notes, plunger lifts are the most common of the technologies. Of these, the use of optimized plunger lift systems (e.g., those that use smart well automation) offer the dual benefits of decreasing the amount of emissions by more than 90 percent while reducing the need for venting due to overloading. Oil and Natural Gas Sector Liquids Unloading Processes White Paper at 16; see also NRDC Leaking Profits report at 24-25 (summarizing emission reductions attributable to use of plunger lift systems). Previous studies have also demonstrated that plunger lift systems are cost-effective. Id.; WRI Clearing the Air

report at 6 (identifying use of plunger lift systems at new and existing wells during liquids unloading as one of three technologies that could cut methane emissions in the oil and gas sector by 30 percent). Other available technologies – such as artificial lifts, velocity tubing, and foaming agents – can achieve even greater emission reductions, eliminating emissions entirely from liquids unloading. Liquids Unloading White Paper at 17-18.

### **3. Conclusion**

In summary, EPA's publication of the white papers for the oil and gas sector represents a positive step in implementing the President's directive to significantly cut methane emissions from this industry. The States urge EPA to take the next logical step of proposing emission standards and guidelines for methane for the sources discussed in the white papers under sections 111(b) and (d) of the Clean Air Act, as it has done recently with carbon dioxide emissions from power plants. In light of the potency of methane as a short-term accelerator of global warming, the States urge EPA to act in expedited fashion by proposing standards and emission guidelines by this fall.

Sincerely,

FOR THE STATE OF NEW YORK

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Attorney General

/s/ Michael J. Myers

By:

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## ATTACHMENT 3

**New York Attorney General Eric T. Schneiderman  
Delaware Attorney General Joseph R. Biden, III  
Maryland Attorney General Douglas F. Gansler  
Massachusetts Attorney General Martha Coakley  
Oregon Attorney General Ellen F. Rosenblum  
Rhode Island Attorney General Peter F. Kilmartin  
Vermont Attorney General William H. Sorrell**

September 12, 2014

**By Electronic Mail**

Janet McCabe  
Acting Assistant Administrator for Air and Radiation  
Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

**RE: Addressing Methane Emissions from Distribution Sector**

Dear Assistant Administrator McCabe:

In June, the Attorneys General of New York, Delaware, Maryland, Massachusetts, Oregon, Rhode Island, and Vermont (together, “States”) submitted comments on the Environmental Protection Agency’s five white papers addressing major sources of methane emissions from the oil and gas sector. This letter is to follow up on the request in our comments that EPA address methane leaks from the distribution sector. Specifically, the States believe that a recent EPA Inspector General’s report further strengthens our position that EPA should regulate methane leaks from the distribution sector as part of the Administration’s strategy to achieve significant reductions in methane emissions from the oil and gas industry.

By way of brief background, we noted in our June comments that the critical need to limit methane emissions from the production and delivery of natural gas was further underscored by EPA’s recently-proposed Clean Power Plan targeting greenhouse gas emissions from existing power plants. One of the building blocks of the rule is the expanded use of natural gas combined cycle plants to generate electricity. In light of the fact that natural gas is mostly methane and EPA has found that methane is one of the greenhouse gases that endangers public health and welfare, minimizing leaks throughout the natural gas system is necessary to ensure that any global warming benefits of the expanded use of natural gas for power production are not undermined. But as we pointed out in our comments on the “Oil and Natural Gas Sector Leaks” white paper, EPA left out an important piece of the puzzle by excluding methane emissions from the distribution sector despite the agency’s finding that methane leaks from distribution comprise about 20 percent of total methane emissions from oil and gas production and delivery. We also shared our experience in taking action to address distribution sector leaks both to address climate change and protect public safety while emphasizing the need for federal action to drive a more concerted, immediate effort to eliminate leaks and reduce methane emissions from distribution.

The need for EPA to include regulation of methane emissions from the distribution sector as part of the Administration's methane reduction strategy was further underscored by the recent EPA Inspector General's report entitled "Improvements Needed in EPA Efforts to Address Methane Emissions from Natural Gas Distribution Pipelines," Report No. 14-P-0324 (July 25, 2014), available at: <http://www.epa.gov/oig/reports/2014/20140725-14-P-0324.pdf>. The Inspector General found that leaks of methane from distribution pipelines, which account for about half of methane leaks from the distribution sector, cost consumers approximately \$192 million in 2011. The report further bolsters the position of our States regarding the importance of addressing these emissions. The Inspector General found that three of our States (Maryland, Massachusetts and New York) are particularly impacted due to the many miles of distribution lines we have that are especially prone to leak. For example, New York and Massachusetts rank second and third, respectively, in the country in miles of cast and wrought iron distribution lines. IG Report at 3, Table 1. The report concludes that voluntary efforts by industry have failed to result in any meaningful methane emission reductions from the distribution sector and that consistent with the Administration's methane strategy, EPA should develop a strategy to address these emissions. The Inspector General cited the financial disincentive for local distribution companies to fix methane leaks, other than for safety reasons, as an important reason why EPA action in this area is necessary.

Therefore, we urge EPA to consider the Inspector General's report together with the States' comments on the agency's white paper on methane leaks as part of its decision making on how best to implement the President's call to promptly and effectively reduce methane emissions from the oil and gas industry. The States request that EPA propose methane emission standards and guidelines for the sources discussed in the white papers under sections 111(b) and (d) of the Clean Air Act, including covering leaks from the distribution of natural gas.

Thank you for your consideration of this matter.

Sincerely,

FOR THE STATE OF NEW YORK

ERIC T. SCHNEIDERMAN  
Attorney General

/s/ Michael J. Myers

By:

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cc: Joseph Goffman, Senior Counsel to the  
Assistant Administrator

## ATTACHMENT 4

**Senate Environment and Public Works Committee**  
**Hearing entitled, “Nomination of Attorney General Scott Pruitt to be**  
**Administrator of the U.S. Environmental Protection Agency”**  
**January 18, 2017**  
**Questions for the Record for the Honorable E. Scott Pruitt**

**Senator Booker:**

1. For many years I have worked with the EPA on the Passaic River superfund clean-up project in my home city of Newark. In 2016, the EPA announced an historic plan to remediate the Passaic River from toxic chemicals, PCBs, and other contaminants that resulted from the production of Agent Orange. The project will remove 3.5 million cubic yards of toxic sediment from the lower eight miles of the Passaic River in New Jersey—the largest environmental dredging project in the history of the federal Superfund program.

a. If confirmed do you commit to make implementation of the Passaic River cleanup project a priority?

b. If confirmed do you commit to carrying out the EPA Region II March 3, 2016 “Record of Decision” for the Lower 8.3 miles of the Lower Passaic River in a timely and efficient manner?

**I am not familiar with the details of the remedy that has been selected for the Passaic River Superfund site, but if confirmed, I expect to make clean up of contaminated sites one of my priorities and will seek input from Congress and relevant stakeholders before taking action in this matter.**

2. As the former Mayor of Newark, I have seen how low-income and minority communities living in close proximity to the port of Newark are exposed to high levels of air pollution resulting in serious health problems. Across the nation 13 million people—3.5 million of whom are children—live near major marine ports or rail yards. What is your plan to address the pressing environmental justice concerns regarding poor air quality near major seaports and other congested nodes in our nation’s freight network? I have been a champion of the bipartisan Diesel Emissions Reduction Act (DERA) Program that helps replace diesel engines and helps make major sea ports and inland transportation hubs cleaner and more efficient. If confirmed can you commit to supporting the DERA program?

**As I committed to you during the meeting in your office, I understand there are wide ranging variety of environmental justice issues affecting urban and rural America. In fact, as you will recall, I've committed to work with your office and visit impacted areas with you. I am also aware that the Diesel Emissions Reduction Act Program has received bipartisan support from**

**Senator Cardin:**

1. Please provide your definition of EPA's "activist agenda" as stated on your professional biography on the State of Oklahoma's official website. Please provide a list of all environmental laws and regulations that you consider to comprise the federal agency's "activist agenda" and how each environmental law or regulation listed in response to this question meets this definition.

**I firmly believe that the EPA has a vital role, but it must do so within the bounds of its legal authority. The actions undertaken by the Office of Attorney General have been out of concern that EPA had exceeded its legal authority in those specific actions, not out of animosity toward the mission of the Agency or any specific regulation or statute. Regulations that are not on solid legal foundation and that cannot survive judicial review will not result in environmental protections.**

2. For what purpose other than to handle the State of Oklahoma's legal challenges against the EPA did you create the Federalism Unit and defund the Environmental Protection Unit?

**The Federalism Unit within the Attorney General's Office serves to protect the State of Oklahoma's sovereign interests in our republican form of government, with a particular focus on issues related to the vertical and horizontal separation of powers demanded by our Constitution. It is headed by the Solicitor General. With regard to the environmental protection unit, it is misleading to say that it was "defunded." Consistent with the practice of every Attorney General save one, I determined that a standalone unit was operationally inefficient. I opted to combine the Environmental Protection Unit and the Consumer Protection Unit into a single unit called the "Public Protection Unit." The Public Protection Unit continued the work of the Environmental Protection Unit, and that work continues to this day, headed by the very same attorney who worked in the Environmental Protection Unit under the prior Attorney General.**

3. Do you intend to create a Federalism Unit within the EPA similar to Oklahoma's? Explain why or why not.

**My understanding is that the Department of Justice, working in coordination with the EPA Office of General Counsel, represents EPA in litigation, and would thus serve to protect such federalism related interests.**



4. Would you support budget cuts to the EPA in similar scope (10% or higher) to those made to Oklahoma Department of Environmental Quality appropriations since FY2009<sup>1</sup>?

**I am not familiar with Oklahoma Department of Environmental Quality's budget. I have no first-hand knowledge of EPA's development of its FY 2018 budget request. If confirmed, I look forward to working with EPA's budget staff and program offices and officials with the Office of Management and Budget on EPA's request. I will work to ensure that the limited resources appropriated to EPA by Congress are managed wisely in pursuit of that important mission and in accordance with all applicable legal authorities.**

5. Of the lawsuits filed against the EPA in which you participated personally and substantially as Attorney General for Oklahoma, do you intend to recuse yourself from decision making regarding litigation in which you represented the State of Oklahoma as an adversarial party? Do you intend to recuse yourself for the entirety of each case?

**As a lawyer, I am bound by the rules of professional conduct not to "switch sides" in any litigation in which I represented the State of Oklahoma, unless my former client gives its informed consent.**

6. Do you believe the State of Oklahoma and the EPA should be regarded as the same or different "clients" for conflicts of interest purposes? Explain why or why not.

**The State of Oklahoma and the federal government are separate sovereign authorities; representing one does not entail representing the other. In addition, while the State of Oklahoma has been my client as a lawyer during my service as Attorney General, if confirmed as EPA Administrator I will not be acting as a lawyer with clients.**

7. The American Bar Association (ABA) Model Rules of Professional Conduct, Rule 1.1, Special Conflicts Of Interest for Former and Current Government Officers and Employees, Comment 5 discusses the balancing of interests. On the one hand, where the successive clients are a government agency and another client, public or private, the risk exists that power or discretion vested in that agency might be used for the special benefit of the other client. A lawyer should not be in a position where benefit to the other client might affect performance of the lawyer's professional functions on behalf of the government. Also, unfair advantage could accrue to the other client by reason of access to confidential government information about the client's adversary obtainable only through the lawyer's government service. In the spirit of Rule 1.11, what previous lawsuits

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<sup>1</sup> [http://okpolicy.org/wp-content/uploads/2016\\_Budget\\_Highlights.pdf?997616#page=7&x42044](http://okpolicy.org/wp-content/uploads/2016_Budget_Highlights.pdf?997616#page=7&x42044)

might affect your performance of the Administrator's professional functions on behalf of the EPA?

**Because I will follow the guidance of ethics officials and my own professional responsibilities in determining whether and how to participate in a particular matter, I do not expect any previous lawsuits to adversely affect my performance as EPA Administrator if confirmed.**

8. On the other hand, the rules governing lawyers presently or formerly employed by a government agency should not be so restrictive as to inhibit transfer of employment to and from the government. The government has a legitimate need to attract qualified lawyers as well as to maintain high ethical standards. Thus a former government lawyer is disqualified only from particular matters in which the lawyer participated personally and substantially. The provisions for screening and waiver in paragraph (b) are necessary to prevent the disqualification rule from imposing too severe a deterrent against entering public service. The limitation of disqualification in paragraphs (a)(2) and (d)(2) to matters involving a specific party or parties, rather than extending disqualification to all substantive issues on which the lawyer worked, serves a similar function. Please provide a list of federal lawsuits filed against the EPA in which you participated personally and substantially as Attorney General for Oklahoma.

**As Attorney General of Oklahoma, I have participated personally and substantially in the following suits against the EPA:**

- **EME Homer City Generation v. EPA, No. 12-1182 (U.S.S.C.)**
- **Michigan v. EPA, No. 14-46 (U.S.S.C.)**
- **Murray Energy Corp. v. EPA, Nos. 14-1112, 14-1151 (D.C. Cir.)**
- **Murray Energy Corp. v. EPA, Nos. 15-1385, 15-1392, 15-1490, 15-1491 & 15-1494 (D.C. Cir.)**
- **Oklahoma v. EPA, Nos. 12-9526, 12-9527 (10th Cir.)**
- **Oklahoma ex rel. Pruitt v. EPA, No. 16-5038 (10th Cir.).**
- **Oklahoma ex rel. Pruitt v. McCarthy, No. 15-cv-369 (N.D. Okla.).**
- **Oklahoma v EPA, No. 13-cv-00726 (W.D. Okla.)**
- **West Virginia v. EPA, No. 14-1146 (D.C. Cir.)**
- **West Virginia v. EPA, No. 16-1264 (D.C. Cir.)**

9. Do you accept a screen is appropriate for EPA strategic decisions specific to those lawsuits in which you represented an adversarial party? Explain why or why not.

**I will consult with relevant ethics officials and review relevant rules of professional conduct to determine whether a screen is appropriate in a particular matter.**

10. Comment 5 discusses a lawyer who moves between different government entities. When a lawyer has been employed by one government agency and then

moves to a second government agency, it may be appropriate to treat that second agency as another client for purposes of this Rule, as when a lawyer is employed by a city and subsequently is employed by a federal agency. However, because the conflict of interest is governed by paragraph (d), the latter agency is not required to screen the lawyer as paragraph (b) requires a law firm to do. The question of whether two government agencies should be regarded as the same or different clients for conflict of interest purposes is beyond the scope of these Rules. Do you believe two government agencies—the State of Oklahoma and the EPA—should be regarded as the same or different “clients” for conflicts of interest purposes? Explain why or why not.

**As explained above, the State of Oklahoma and the federal government are separate sovereign authorities. While the State of Oklahoma was my client as a lawyer, if confirmed as EPA Administrator I will not be acting as a lawyer with clients.**

11. How might the spirit of Rule 1.11’s conflicts of interest provisions apply if those government entities were adversarial parties to a lawsuit?

**If two government entities are adversarial parties to a lawsuit, then under ABA Model Rule 1.11 a lawyer’s previous representation of one entity in the litigation will preclude his later representation of the other entity in the same litigation, unless the former client gives its informed consent. As explained above, if confirmed as EPA Administrator I will not be acting as a lawyer with clients.**

12. ABA Rule 1.7 Conflict Of Interest: Current Clients provides that a “lawyer shall not represent a client if the representation involves a concurrent conflict of interest. A concurrent conflict of interest exists if the representation of one client will be directly adverse to another client; or there is a significant risk that the representation of one or more clients will be materially limited by the lawyer’s responsibilities to another client, a former client or a third person or by a personal interest of the lawyer.” In the spirit of Rule 1.7, do you reasonably believe that you will be able to provide competent and diligent leadership to the EPA, an agency you “don’t like” and have sued several times? Explain why or why not.

**I will provide diligent and competent leadership to the EPA if confirmed as Administrator. As I explained in my testimony to the Committee, I am a firm believer in the EPA’s mission to protect the environment and look forward to the opportunity to lead the agency to help provide our future generations with a better and healthier environment.**

13. Please explain how your litigation position in each case is or is not at odds with the mission of the EPA, to protect human health protect human health and the environment—air, water, and land.

**The EPA's mission is defined by the laws passed by Congress granting it the authority to act. Any action by the EPA that exceeds the authority granted to it by Congress, by definition, cannot be consistent with the Agency's mission. In each case filed against the EPA, in the view of the State of Oklahoma, the EPA had acted in excess of the authority granted to it by Congress.**

14. Do you accept that EPA, state, local and tribal agencies work together to ensure compliance with environmental laws passed by Congress, state legislatures and tribal governments?

**I agree it is essential for the federal government, state governments, and tribal governments to work together to provide the environmental protection that our laws demand and that the American people deserve. As I explained in my testimony to the Committee, I strongly support cooperative federalism. If confirmed, I will make every effort to partner with the EPA's counterparts in state, local, and tribal governments to further these goals.**

15. In 2005, former Attorney General Drew Edmondson filed a federal lawsuit in 2005 seeking to prohibit the spreading of chicken waste over land in the Illinois River Basin in northeastern Oklahoma. Companies named in *State of Oklahoma v. Tyson Foods Inc.* (No. 4:05-cv-00329) include Tyson Foods Inc., Tyson Poultry Inc., Tyson Chicken Inc., Cobb-Vantress Inc., Cal-Maine Foods Inc., Cargill Inc., Cargill Turkey Production L.L.C., George's Inc., George's Farms Inc., Peterson Farms Inc., Simmons Foods Inc., Cal-Maine Farms Inc. and Willow Brook Foods Inc. On December 9, 2015, the State of Oklahoma filed brief amici curiae along with 21 other states in support of the petitioners in *American Farm Bureau Federation v. EPA* (No. 15-599). The *Tyson Foods* defendants did not participate in the Bay TMDL lawsuit, and the American Farm Bureau was not a party to the Oklahoma suit. However, Tyson Foods Inc., headquartered in Springdale, Arkansas—the largest poultry producing company in the world—is a member of the Arkansas Farm Bureau. Do you accept that the American Farm Bureau, a national organization, represents the interests of the Arkansas Farm Bureau and its members, including Tyson Foods? Explain why or why not.

**It is my understanding that the American Farm Bureau Federation is a distinct corporate entity from the Arkansas Farm Bureau, which is a distinct corporate entity from Tyson Foods. Accordingly, I do not believe one can ignore corporate form and conflate the American Farm Bureau Federation with either the Arkansas Farm Bureau or Tyson Foods. I observe that the Pennsylvania Farm Bureau filed suit against EPA in the challenge to the Chesapeake Bay TMDL on its own behalf, notwithstanding the fact that American Farm Bureau Federation also was a plaintiff.**

16. In 2013, despite the lack of a verdict in the *Tyson Foods* case, you added the State of Oklahoma to the American Farm Bureau/poultry industry backed lawsuit

**Ranking Member Carper:**

1. Please list all public speeches or presentations you have made that included references to any issue related to energy or the environment since 1998, and please provide copies (written, audio, or video) of any such speeches or presentations. Please also indicate whether you received compensation for any such speech or presentation (whether stipend, travel, lodging expenses, or other form of remuneration) along with the name of the entity that provided such compensation and the amount thereof.

**Please see attached list of speeches and enclosed copies of speeches in response to this request.**

2. Please provide a list of the skills and experiences you bring to the EPA Administrator position and why you believe that you would be a good fit for the position.

**I am a licensed attorney with significant experience in constitutional law, the Administrative Procedure Act, and Environmental Protection Agency administered statutes. This body has recognized my expertise in EPA related matters on several occasions, inviting me to testify before this and other committees on matters relating to the EPA. My legal education and profession has trained me to ask probing questions and think critically regardless of the subject.**

3. Please define the Environmental Protection Agency (EPA)'s mission and the role you believe that sound science plays in fulfilling that mission.

**The mission of EPA is to protect human health and the environment. Where Congress directs the EPA to act based upon scientific findings, the EPA should rely on well-reasoned, and sound, scientific findings.**

4. In a 2006 article in The Oklahoman, you were described as someone that "believes in negotiating, but not compromising." Do you feel this continues to be an accurate description of you? If so, why? Do you agree with President Nixon's articulation of the principal roles and functions of the EPA? If you do not agree, please explain the aspects with which you disagree and why.

**Based on the limited information provided in the question, I am uncertain about the article to which the question refers. The content and context of**

**the article and quote are not readily apparent. However, if confirmed as Administrator, I will take my responsibility to protect human health and the environment for all Americans with the highest possible dedication and commitment in accordance with the legal authorities established by Congress. I have a record of working on a bipartisan basis.**

5. Do you think it is constitutional for Congress to direct EPA to set national standards that protect public health? Is it constitutional for Congress to do that even if the pollution only harms citizens of a single state?

**The constitutionality of laws enacted by Congress depends on the particulars of the particular law, and will typically be decided by a court. Courts have generally recognized that Congress has the authority to create the EPA and vest certain powers in it.**

6. Mr. Pruitt, your official biography on the website of the Oklahoma Attorney General's office says that you are "...a leading advocate against the EPA's activist agenda." The EPA, the agency you have been nominated to lead, has the critical mission "to protect human health and the environment" for all Americans. When you sued the EPA over the Good Neighbor Rule (Cross-state Rule), how did that protect human health and the environment for downwind states?

**I firmly believe that the EPA plays an important role in addressing interstate water and air quality issues, but it must do so within the bounds of its legal authority. The actions undertaken by the Office of Attorney General challenging the Cross State Air Pollution Rule related to whether EPA had properly accounted for and allocated pollution from upwind states, as mandated by Congress. Regulations that are not on solid legal foundation and that cannot survive judicial review will not result in environmental protections.**

7. You've been part of numerous lawsuits against the EPA – against clean air, clean water and climate regulations. However, you also have stated you are for clean air and clean water. Can you name one Clean Air Act regulation – not a voluntary or grant program – that is on the books today that you do support?

**I firmly believe that the EPA plays an important role, especially as it relates to cross-state air and water pollution, but EPA must do so within the bounds of its legal authority as provided by Congress. Regulations that are not on solid legal foundation and that cannot survive judicial review will not result in environmental protections.**

8. Are there any other EPA regulations that are on the books today that you do support?

**I have not conducted a comprehensive review of existing EPA regulations. As Attorney General, I have brought legal challenges involving EPA regulations out of concern that EPA has exceeded its statutory authority based on the record and law in that matter.**

9. President-elect Donald Trump has said repeatedly—at least half a dozen times—on the campaign trail that he would starve the EPA of funding or completely eliminate the agency. In March last year, the President-elect stated in reference to the EPA:

“We are going to get rid of it in almost every form. We’re going to have little tidbits left but we’re going to take a tremendous amount out,”

After the election, the President-elect didn’t seem to change his tune. President-elect Trump stated two days after the election again in reference to the EPA:

“Environmental protection, what they do is a disgrace; every week they come out with new regulations,”

You also have a history attacking the agency. Please tell us why we should disregard the President-elect’s statement on the EPA, disregard your actions and only believe your words that you will support clean air and clean water laws?

**As I testified, I support the EPA's mission to protect human health and the environment. If confirmed, I will faithfully execute the environmental laws enacted by Congress.**

10. As Administrator, will you take into account the true costs of air pollution including the adverse health and environmental impacts on states that are adversely affected by upwind pollution sources?

**As I stated at the hearing, costs are important in the rulemaking process and the Courts have recognized that important factor. The Clean Air Act prescribes when costs should be considered and to what extent in a**

**Senator Markey:**

1. There is tremendous diversity across states in this country, and occasionally states have differences of opinion on how to approach a problem. One of the roles of the federal government is to be an arbiter among states.

- What is your philosophy on how interstate pollution conflicts should be handled?
- Should a state be able to pollute a river for which another state relies on for drinking water?
- What is the EPA's role in resolving interstate pollution conflicts?
- How would you determine when EPA should be involved in interstate pollution disputes?

**As I testified in the hearing, I have pursued opportunities to address interstate environmental quality matters. One of the examples I have highlighted is the work that Arkansas Attorney General Dustin McDaniel and I took to address an enforceable water quality standard between Arkansas and Oklahoma. I have also discussed how Texas should be responsible when air quality issues affect Oklahoma and my experience with that. When negotiations among and between states breakdown EPA has a role to set environmental standards. However, that is should be a last course of action instead of the first. I believe environmental statutes are designed with states as a primary implementer. Environmental statutes envision that states have the delegated enforcement and primacy to implement and enforce environmental statutes. Only when that is not happening or when negotiations between and among states breakdown should EPA determine a dispute and only after attempting to assist states negotiate a local solution. I am fond of saying that we need national standards and neighborhood solutions. I think that should shape the work of the EPA.**

2. During the hearing, you repeatedly underscored the need to make regulation "regular" for regulated entities.

- How do you reconcile that goal with the mission of EPA, which is "to protect human health and the environment"?
- If confirmed as EPA Administrator will your highest priorities be to protect human health and the environment?

**As I testified, I believe in the rule of law and that process matters. I do not view these as being contrary to EPA's mission to protect human health and the environment.**



11. You have pursued at least twenty legal actions against the EPA on clean water, clean air and climate change related regulations, including multiple lawsuits that are ongoing. You have additionally criticized the EPA and its scientists on a range of scientific facts and regulations that aim to protect public health.

- Please identify EPA regulations or standards that you do support in their current form.
- In many of your legal actions and activities as Oklahoma AG, you have endorsed positions or signed letters that were drafted by oil and gas industry paid lobbyists. Please identify areas in which your views differ significantly from those of the oil and gas industry?

**When negotiations among and between states breakdown EPA has a role to set environmental standards. However, that should be a last course of action instead of the first. I believe environmental statutes are designed with states as a primary implementer. Environmental statutes envision that states have the delegated enforcement and primacy to implement and enforce environmental statutes. Only when that is not happening or when negotiations between and among states breakdown should EPA determine a dispute and only after attempting to assist states negotiate a local solution. I am fond of saying that we need national standards and neighborhood solutions. I think that should shape the work of the EPA. As I also testified at the hearing, when it was appropriate to pursue legal actions or settlement negotiations specifically with the oil and natural gas industry I have done so. When considering new regulations on oil and natural gas production and practices, I have joined other co-regulators in Oklahoma advocating those changes.**

12. Your Ethics Agreement states that for a one-year period, you “**will** seek authorization to participate personally and substantially in particular matters involving specific parties in which I know the State of Oklahoma is a party or represents a party.”

- Why does this language assume that you “will” seek authorizations for all such instances?
- Why is your recusal limited to a one-year period, when in some cases the “particular matters” will not be resolved within that timeframe?
- Will you commit to recusing yourself from participating in all such particular matters, without requesting or receiving a waiver, until the matter is fully resolved? If not, why not?
- These ‘particular matters’ are all litigation in which your Ethics Agreement contemplates you switching from plaintiff in your capacity as Attorney General of Oklahoma (in which you were a principal decision-maker on the part of those litigating against EPA), to defendant as EPA Administrator (in which you would be the principal decision-maker on the response to the lawsuit you filed). Why do

you not believe this creates an unresolvable conflict of interests that makes it impossible for you to properly, lawfully and ethically represent the interests of the EPA, while simultaneously upholding your professional duty to your former client, the State of Oklahoma?

**My Ethics Agreement was drafted in close consultation with ethics experts at the Office of Government Ethics and EPA ethics officials, and reflects a diligent effort to ensure that I seek authorization before participating in any matter involving specific parties in which I know the State of Oklahoma is a party or represents a party for one year after my resignation as Oklahoma Attorney General. I believe you may be misreading the language in my Ethics Agreement regarding prior authorization. If, during the relevant time period, I would like to consider participating in a particular matter involving specific parties in which I know the State of Oklahoma is a party or represents a party, I will seek advance authorization to do so. With respect to my professional obligations as a member of the bar, I am not permitted to “switch sides” as counsel in any matter in which I participated as a lawyer. The standards that would apply to me as EPA Administrator are different, however, as I will not be representing the EPA as a lawyer if I am confirmed.**

13. During the hearing, you refused to unequivocally recuse yourself from litigation that you brought against the EPA, repeatedly stating that you would follow the direction of agency ethics officials’ guidance in this area on a case-by-case basis. Isn’t it true that if you are confirmed, the agency ethics officials that you are referring to will report to you, and this reporting relationship could be perceived to have the potential to influence the guidance they provide you with? In light of this, will you commit to the modification of your Ethics Agreement, using your own discretion and authority to do so and prior to any vote on your confirmation, in order to provide more clarity about your intentions for recusal related to each matter involving specific parties in which the State of Oklahoma is a party? If not, why not?

**My Ethics Agreement was drafted in close consultation with ethics experts at the Office of Government Ethics and EPA ethics officials, and reflects a diligent effort to ensure I comply with all applicable federal ethics rules. I will abide by the commitment I made in that letter. I am confident in the former staff of the EPA and have no reason to believe they will give me anything other than their best advice on ethics matters. Moreover, not all officials who may consider a request for authorization to participate in a matter will necessarily report to me. Before participating in matters involving specific parties in which I am concerned where there may be a question regarding my impartiality, I would expect, where they deem it appropriate, that EPA ethics officials may consult with ethics experts at OGE before making a recommendation.**

14. I am attaching a January 17, 2017 letter from Citizens for Responsibility and Ethics in Washington (CREW) and a January 18, 2017 letter from The Campaign Legal Center (CLC), both sent to the EPA Designated Agency Ethics Official, for the record and for your review. The CREW letter references several factors related to your refusal to unequivocally recuse yourself from participating in any of these matters as EPA Administrator that would cause a reasonable person with knowledge of the relevant facts “to question his [your] impartiality in these matters” and “to question the integrity of the agency’s programs and operations.” The CLC letter states that “the plan described in his [your] ethics agreement is insufficient to avoid actual or apparent conflicts of interest, and would cause members of the public to question his impartiality in the conduct of his [your] duties, contrary to his [your] obligation to “ensure that every citizen can have complete confidence in the integrity of the Federal Government.””

- The CREW letter states that ethics regulations demand your recusal from participating personally and substantially as Administrator in particular matters involving specific parties in which the State of Oklahoma is a party, even if the State of Oklahoma withdraws from the matter. Do you agree to make such a recusal for each such matter, even if the State of Oklahoma withdraws from the matter? If not, why not?
- The CREW letter states that “there would be serious and apparent conflicts leading to reasonable doubts about Mr. Pruitt’s impartiality if he were to participate in these lawsuits as EPA Administrator *at any point* in their lifetime. It is therefore essential that Mr. Pruitt’s recusals last through the full course of each matter.” Do you agree to recuse yourself for the full course of each matter involving specific parties in which the State of Oklahoma is a party? If not, why not?
- The CREW letter states that any waiver request you might make from recusal from any of these matters “should be denied based on consideration of the relevant factors listed under” 5 C.F.R. 2635.502(d). Do you agree not to request a waiver from recusal from any such matter? If not, why don’t you agree with the analysis of the factors listed in the regulations as they apply to your past litigation history against the Agency that CREW described in the letter should result in a denial of the waiver request?

**As discussed above, my Ethics Agreement was drafted in close consultation with ethics experts at the Office of Government Ethics and EPA ethics officials, and reflects a diligent effort to ensure I comply with all applicable federal ethics rules. If confirmed, I will ask relevant federal ethics officials to fully review the issues raised in the CREW letter and, if appropriate, take them into account in determining the proper legal course of action in particular instances.**

15. Some of the legal cases that you brought against the agency remain open, and there may be legal decisions that require EPA regulatory action as they are resolved; for example, a court could uphold the EPA regulation and require it to be enforced, or a court could direct such a regulation's revision. Since such regulatory actions would be a direct consequence of the litigation, any conflict of interests associated with your participating in the legal matter should extend to any EPA regulatory or enforcement action taken as a result of court action on the litigation. Do you agree to recuse yourself without waiver and for the entirety of your tenure at the EPA from all such regulatory or enforcement actions that are taken as a result of court action on a specific legal matter from which you were recused? If not, why not?

**As EPA Administrator I will recuse from participation in litigation in matters in which I represented the State of Oklahoma, unless I receive informed consent from the State of Oklahoma and the permission of relevant federal ethics officials. It is my understanding that recusal obligations do not extend to regulatory rulemaking of general applicability, which does not create a conflict under applicable rules.**

16. If you are confirmed, you will also have the ability to accomplish through *regulation* as EPA Administrator what you have been seeking to accomplish through *litigation* as Attorney General. For example, instead of waiting for a court to decide whether to grant your lawsuit's request to overturn EPA's smog standard, you could start to write a regulation to do just that on your very first day on the job. Will you commit to recuse yourself from working on the revision or elimination of any *regulation* regarding issues on which you have sued the EPA? If not, why not?

**It is my understanding under federal ethics rules that regulatory rulemaking of general applicability does not create a conflict.**

17. I am also attaching, for the record and for your review, the Ethics Agreement signed by Carol Browner, former EPA Administrator during the Clinton Administration. In her Ethics Agreement, she agreed to recuse herself from participating "personally and substantially in any EPA matter which involves the State of Florida as a specific party and in which I was personally and substantially involved as Secretary, Department of Environmental Regulations, State of Florida". I note that this agreement was not limited to one year in duration and not subject to waivers. I am also attaching, for the record and for your review, the Obama Administration Ethics Pledge that each nominee agreed to uphold, which states, in part, "I will not for a period of 2 years from the date of my appointment participate in any particular matter involving specific parties that is directly and substantially related to my former employer or former clients, including regulations and contracts." If the response to any part of questions 2, 3 or 4 is no, please

also explain why in light of the stronger Ethics Agreements and pledges made by past EPA Administrators?

**I am not familiar with the facts and circumstances surrounding Ms. Browner's Ethics Agreement. In my Ethics Agreement, which was drafted in close consultation with ethics experts at the Office of Government Ethics and EPA ethics officials, I agreed to abide by federal regulations that require my recusal from particular matters involving specific parties in which the State of Oklahoma is a party for a period of one year after my resignation as Attorney General, unless I receive a waiver. I will abide by the commitment in that letter, in addition to any other obligations imposed by the Trump Administration as well as my obligations as a member of the bar.**

18. In addition to your participation in specific litigation and regulatory matters that raise conflicts of interests, there may be pending enforcement matters at EPA in which donors to you or your political action committees are the subjects. For example, records indicate that Tyson Foods has been the subject of an EPA Clean Air Act enforcement action<sup>3</sup> and reportedly "faces an ongoing criminal investigation by the EPA for its release of toxic pollutants into waterways".<sup>4</sup> Do you commit to recusing yourself from participation in any enforcement matter in which the subject is an entity that has previously made a donation to you or any of your political action committees? If not, why not?

**I will consult with relevant federal ethics officials to determine whether to participate in a particular matter.**

19. *Miss. Comm'n on Env'tl. Quality v. EPA*, 790 F.3d 138 (D.C. Cir. 2015) stated that "Decisionmakers violate the Due Process Clause and must be disqualified . . . when they act with an 'unalterably closed mind.'" One of your filings stated that the agency's record "does not support EPA's findings that mercury, non-mercury HAP metals, and acid gas HAPs pose public health hazards." Do you have an "unalterably closed mind" on the question of whether mercury and acid gas HAPs pose public health hazards? If not, please explain your current view on this question.

**As I stated in my testimony to the committee, all legal positions that I took in my capacity as Attorney General for the State of Oklahoma were in my capacity as an advocate. If confirmed as Administrator, I will consider all**

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<sup>3</sup> <https://www.epa.gov/enforcement/tyson-foods-inc>

<sup>4</sup> [http://www.meatpoultry.com/articles/news\\_home/Business/2016/08/Tyson\\_investors\\_call\\_for\\_envir.aspx?ID=%7B4E28BCD7-045D-489C-8A41-48A6DDDBE99F%7D&cck=1](http://www.meatpoultry.com/articles/news_home/Business/2016/08/Tyson_investors_call_for_envir.aspx?ID=%7B4E28BCD7-045D-489C-8A41-48A6DDDBE99F%7D&cck=1)

**matters presented to me with an open mind and will work to reach conclusions that are reflected in the administrative record of each matter and that comport with Congress's intent in enacting the Act.**

20. Section 301(a) of the Clean Air Act prohibits the Administrator from delegating authority over many regulatory proceedings. To the extent that you are recused from participating in such decisions, who could lawfully make them?

**If I am recused from participating in a matter, the Federal Vacancies Reform Act and other federal law provide a mechanism for another EPA official to perform such functions in an acting capacity. Under current policy, the EPA Deputy Administrator would typically serve this function.**

21. Each case in which you litigated on behalf of your former client requested that the court compel EPA to take a specific action; for example, one pending suit asks a court to compel EPA to maintain the ozone standard at 75 ppb instead of lowering it to 70 ppb. A court may direct EPA to take specific actions as these cases are resolved, which will require changes to EPA regulations. Moreover, as EPA Administrator, you could simply direct the Agency to amend its regulations to do the very thing your lawsuit asked a court to do in the first place. This also creates an unresolvable conflict of interests.

- Will you recuse yourself, without waiver and for the entirety of your tenure as EPA Administrator, from any agency proceedings that a) directly result from the resolution of or b) are related to the “particular matters” that your Ethics Agreement agrees you should be recused from? If not, why not, and why do you not believe that such agency proceedings would be covered by your recusal under the applicable Standards of Ethical Conduct for Employees of the Executive Branch?

**As EPA Administrator I will recuse from participation in litigation in matters in which I represented the State of Oklahoma, unless I receive informed consent from the State of Oklahoma and the permission of relevant federal ethics officials. I understand that this does not extend to regulatory rulemaking of general applicability, which would not create a conflict under applicable rules.**

22. Our oceans are essential for life, and much of what happens on land ultimately ends up in our oceans. There are many ways in which our actions on land can both positively and negatively affect marine life and the marine environment. Under the Marine Protection, Research and Sanctuaries Act (MPRSA), the EPA ensures that harmful substances are not dumped into the

**Senator Whitehouse:**

1. Estuaries are important coastal habitats that sustain unique wildlife and plant species, serve as nurseries for commercially important fish, buffer coastal communities from coastal storms, and filter water as it flows into the ocean. The EPA manages a network of 28 estuaries of national significance around the country. Last Congress, the National Estuary Program (NEP) was reauthorized through 2021 (Public Law No. 114-162) in a bipartisan effort and charged with providing grants to support projects that address a number of problems facing estuarine and coastal environments, including seagrass habitat loss, harmful algal blooms, invasive species, and sea level rise. Coming from a non-coastal state, please describe in detail how you will acquaint yourself with 1) the NEP, and 2) coastal issues the NEP helps address.

**If confirmed, I would expect to be briefed by EPA staff on the relevant statutory authority and any EPA programs established pursuant to this authority.**

2. Each NEP must institute a Comprehensive Conservation and Management Plan (CCMP) to guide management and conservation decisions at the NEP. The effects of climate change on estuaries (i.e., saltwater inundation, increased rainfall-driven runoff, warming waters) are included in these CCMPs. Would you direct the NEPs to disregard the consequences of climate change in the CCMPs and other decision-making reports and tools?

**If confirmed, I would expect to be briefed by EPA staff on the relevant statutory authority and any EPA programs established pursuant to this authority. If confirmed, I will follow all as enacted by Congress.**

3. The Climate Ready Estuaries program coordinates with the NEP to educate managers on how to assess the effects of climate change on U.S. estuaries. It also provides recommendations and toolkits to help design climate change adaptation and risk identification capabilities. Will you direct the Climate Ready Estuaries program to remove any materials, cancel any webinars or presentations, or stop its coordinated work on climate change with the NEPs?

**I am not familiar with the details of the specific program referenced in your question. If confirmed, I would expect to be briefed by EPA staff on the relevant statutory authority and any EPA programs established pursuant to this authority.**

4. Marine debris is a growing problem around the world, with plastic debris being the most troublesome component due to its pervasiveness and persistence in the marine environment. The EPA is currently a co-chair of the federal Interagency Marine Debris Coordinating Committee. Under your direction, will the EPA to maintain a leadership role on the committee? How will you continue EPA's

88. As Attorney General you have played a major role challenging EPA's Clean Power Plan and seven other major rules protecting the public from air pollution, water pollution, and toxic threats. Professional ethics rules prohibit attorneys from changing sides, as you would be doing if confirmed. Federal ethical guidelines specifically require that a public official should not act on a matter if a reasonable person who knew the circumstances of the situation could legitimately question his or her fairness. Will you commit to recusing yourself from substantive matters that include EPA's climate rules, its mercury and air toxics rules, its most recent clean water rule, and others related to the eight pending cases you have against EPA as an Attorney General?

**It is my understanding that recusal obligations do not extend to regulatory rulemaking of general applicability, which does not create a conflict under applicable rules. With respect to my professional obligations as a member of the bar, I am not permitted to "switch sides" as counsel in any matter in which I participated as a lawyer. The standards that would apply to me as EPA Administrator are different as I would not be representing the EPA as a lawyer. Nonetheless, in any matters involving specific parties where I believe that my impartiality may be questioned, I will consult with relevant federal ethics officials to determine whether to participate in a particular matter and provide them with all relevant facts.**

89. You have taken credit for the lawsuit *State of Oklahoma et al. v. Mahard Egg Farm*. What was the date on which the complaint in that case was filed? What are the dates of the allegations in the case? Had any Oklahoma state agencies taken any steps to investigate that matter before you became Attorney General? If so, please specify the agencies, their roles investigating the case, and the dates on which they were taken. Did the Oklahoma Attorney General's office take any steps to investigate that matter before you became Attorney General? If so, please specify what was done and when. Please indicate the date on which the Attorney General's office first contacted defendant(s) in this matter.

**As I have testified, it was a lawsuit that I initiated together with the State of Texas and the EPA. The complaint was filed on May 23, 2011. The consent decree was entered into on August 10, 2011. There was no case when I took office, but the matter had been investigated by the Office of Attorney General, the Oklahoma Department of Agriculture, the EPA, and the State of Texas. I do not know the first date that the Office of Attorney General first contacted the defendants in that matter.**

90. Have you ever met or spoken with Richard "Rick" Berman, who has been affiliated with Center for Consumer Freedom? If so, please describe the substance and dates of your communications with him. Did you or the Attorney General's Office during your tenure ever receive communications of any sort from



## ATTACHMENT 5



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

MAY - 4 2017

THE ADMINISTRATOR

**MEMORANDUM**

**SUBJECT:** My Ethics Obligations

**FROM:** E. Scott Pruitt  
Administrator

**TO:** Acting Assistant Administrators  
Acting General Counsel  
Inspector General  
Acting Regional Administrators

This memorandum provides you with written notification regarding my ethics obligations. I have conferred with the Office of General Counsel's Ethics Office (OGC/Ethics) and understand that I must recuse myself from matters in which I have a financial interest, or a personal or business relationship. I also understand that I have certain obligations to my state bar and also under the President's Ethics Pledge that I have signed. This recusal statement addresses all of my ethics obligations.

*Obligations Under the President's Ethics Pledge*

I understand that I have ethics obligations with respect to my former employer and my former client, the State of Oklahoma. The President's Ethics Pledge provides more restrictions than the federal ethics rules, but I am advised by OGC/Ethics that the additional restrictions contained in the pledge that regard former employer and former client do not apply to me. The Executive Order defines "former employer" to exclude state government,<sup>1</sup> and the Office of Government Ethics has determined that this same exclusion applies to the definition of "former client."<sup>2</sup> Therefore, OGC/Ethics has confirmed that I am not subject to the additional pledge restrictions regarding former employers or former clients.

*Ethics Obligations Under the Impartiality Provisions*

Pursuant to federal ethics rules, I understand that I have a one-year cooling off period with my former employer and former client. I also understand that I have a "covered relationship" with certain

---

<sup>1</sup> See Exec. Order 13,770, Section 2(j), which provides that "former employer" does not include ... State government."

<sup>2</sup> See Office of Government Ethics Legal Advisory 17-02 (February 6, 2017), which states that, "[w]ith respect to Executive Order 13770, ethics officials and employees may continue to rely on OGE's prior guidance regarding Executive Order 13490 to the extent that such guidance addresses language common to both orders," and Office of Government Ethics Legal Advisory DO-09-011 (March 26, 2009), which states that "based on discussions with the White House Counsel's office, OGE has determined that the definition of former client is intended to exclude the same governmental entities as those excluded from the definition of former employer."

organizations in which I was active during the past year. For one year after my resignation as Attorney General, and one year from my resignation from the entities specified below, I will not participate personally and substantially in any particular matter involving specific parties in which any of the following entities is a party or represents a party, unless I am first authorized by OGC/Ethics to participate, pursuant to 5 C.F.R. § 2635.502(d). This federal ethics limitation does not extend to particular matters of general applicability, such as rulemaking.

Name of Entity	Date when recusal from specific party matters ends under Federal Ethics Obligations
State of Oklahoma	February 18, 2018
Southern Baptist Theological Seminary	February 18, 2018
Windows Ministry Incorporated	February 18, 2018
Rule of Law Defense Fund	December 9, 2017

#### *Commitment to My Ethical Responsibilities*

To demonstrate my profound commitment to carrying out my ethical responsibilities, while I am the Administrator of the United States Environmental Protection Agency, I will not participate in any active cases in which Oklahoma is a party, petitioner or intervenor, including the following:

Case Name	Citation
American Petroleum Institute, et al. v. EPA	No. 13-1108 (D.C. Cir.)
Florida <i>et al.</i> v. EPA	No. 15-1267 (D.C. Cir.)
Murray Energy, <i>et al.</i> v. EPA	No. 15-3751 (6 <sup>th</sup> Cir.)
Murray Energy, <i>et al.</i> v. EPA	No. 15-1385 (D.C. Cir.) (consolidated with 15-1392, 15-1490, 15-1491 & 15-1494)
Murray Energy Corp. v. EPA	No. 16-1127 (D.C. Cir.)
Oklahoma <i>ex rel.</i> Pruitt v. EPA	No. 15-cv-00381 (10 <sup>th</sup> Cir.)
Oklahoma <i>ex rel.</i> Pruitt v. EPA appeal pending <i>sub nom.</i> State of Oklahoma <i>ex rel.</i> Hunter, No. 16-5039 (10 <sup>th</sup> Cir.)	No. 4:15-cv-381 (N.D. Okla.)
<i>In Re</i> Volkswagen "Clean Diesel" Marketing, Sales, Practices, And Products Liability Litigation (extends to criminal case too)	No. 2672 MDL CRB (JSC) (N.D. Cal.) Criminal case: E.D. Michigan
State of North Dakota v. EPA	No. 15-1381 (D.C. Cir.) (joined with No. 15-1399, then consolidated with No. 15-1381)
State of West Virginia, <i>et al.</i> v. EPA	No. 15-1363 (D.C. Cir.)
Walter Coke Inc. v. EPA	No. 15-1166 (D.C. Cir.)
Wildearth Guardians v. EPA	No. 13-cv-02748 (D.C. Colo.)



I understand that this commitment is longer than is required by the federal impartiality standards, but I am taking this action to avoid even the appearance of any impropriety under federal ethics or professional responsibility obligations.

With respect to cases involving EPA in which Oklahoma joined other states in filing an amicus brief, I understand that Oklahoma was not a party to the litigation itself. I have informed the Designated Agency Ethics Official (DAEO) that Oklahoma itself neither authored the amici briefs nor otherwise participated in the litigation in any way. Most of those cases are resolved, except for *Building Industry Association of the Bay Area, et al. v. Department of Commerce, et al.* (the U.S. Supreme Court denied *certiorari*); *Sierra Club et al., plaintiffs-appellees v. Regina McCarthy in her capacity as Administrator of the United States Environmental Protection Agency, defendants-appellees; State of Arizona et al, intervenor-plaintiff-appellants*, No. 15-15894 (9<sup>th</sup> Cir.), on appeal from N.D. Cal., No. 13-cv-03953-SI (this case is fully argued and briefed is awaiting decision only); *Wyoming v. EPA*, Nos. 14-9512 and 14-9514 (10<sup>th</sup> Cir.) (the standard of review argument advanced in the amicus brief that Oklahoma joined was uncontested on review); and *National Association of Manufacturers, petitioner, v. U.S. Department of Defense, U.S. Army Corps of Engineers, and U.S. EPA, et al., respondents*, No. 16-299 (S. Ct.) (U.S. Supreme Court granted *certiorari*, briefing for petitioners and supporting persons is complete, and case will be argued in the upcoming October term).

Thus far, I have not participated in any of the cases listed in this recusal statement officially at all and will continue to recuse for now. In the event that I wish to participate, I will seek an ethics determination from the DAEO, who will apply the federal impartiality standard set forth at 5 C.F.R. § 2635.502. I understand that my professional responsibility obligations may impose consent requirements in order to participate. I will provide notification of such consent, if sought and obtained, to EPA's ethics officials.

#### *Screening Arrangement*

In order to help ensure that I do not participate in matters relating to any of the entities listed above, I have taken or will take the following steps:

1. I am instructing Ryan Jackson, Chief of Staff to screen all EPA matters, including existing litigation, directed to my attention that involve outside entities or that require my participation, to determine if they involve any of the entities or organizations listed above.
2. Until such time as a Presidentially Appointed Senate confirmed appointee is confirmed and sworn into a position such as the Deputy Administrator, General Counsel or Assistant Administrator, I am designating the Chief of Staff to take appropriate action or refer it with the Agency for appropriate action or assignment, without my knowledge or involvement.
3. I will provide the Chief of Staff and Sarah Greenwalt, Senior Advisor to the Administrator, with a copy of this memorandum so that they may fully understand the purpose and scope of my

recusal obligations and this screening arrangement. In order to help ensure that I do not inadvertently participate in matters from which I am recused, I am directing the Chief of Staff and/or Ms. Greenwalt to seek the assistance of OGC/Ethics if they are ever uncertain whether or not I may participate in a matter.

4. I will provide a copy of this memorandum to my principal subordinates. I will also instruct my principal subordinates that all inquiries and comments involving any of the entities listed above should be directed to the Chief of Staff without my knowledge or involvement.
5. In consultation with OGC/Ethics, I will revise and update my ethics agreement and/or this memorandum whenever is warranted by changed circumstances, including changes in my financial interests, my personal or business relationships, or the nature of my official duties.
6. In the event of any changes to this screening arrangement, I will provide a copy of the revised screening arrangement memorandum to the Chief of Staff, OGC/Ethics, and any principal subordinates.

cc: Ryan Jackson, Chief of Staff  
Sarah Greenwalt, Senior Advisor to the Administrator  
Kevin S. Minoli, Designated Agency Ethics Official  
Justina Fugh, Alternate Designated Agency Ethics Official

## ATTACHMENT 6



**Administrator Pruitt** ✓

@EPAScottPruitt

Follow



## Scott Pruitt Explains Why He Sued EPA So Many Times: 'They Deserved It':



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# THE DAILY CALLER

## Scott Pruitt Explains Why He Sued EPA So Many Times: 'They Deserved It'

Posted By [Michael Bastasch](#) On 1:13 PM 05/11/2017 In | [No Comments](#)

Environmental Protection Agency Administrator Scott Pruitt said he sued the agency he heads so many times while Oklahoma attorney general because "they exceeded their statutory authority."

"They deserved it and they deserved it because they exceeded their statutory authority, they exceeded their constitutional authority," Pruitt [told WDAY's Rob Port](#) Wednesday.

Pruitt was hammed by Democrats and environmental activists during the confirmation process for suing the EPA at least a dozen times while representing Oklahoma. Pruitt's recused himself from litigation he brought against the Obama administration.

"When they got outside their lane, they got sued and they got stopped," Pruitt said during the WDAY interview, not backing down from his record of suing EPA.

Pruitt sued EPA about a dozen times while Oklahoma AG, including filing suits on regulations he's now reviewing, including the Clean Power Plan (CPP), the "waters of the U.S." rule (WOTUS) and the Mercury and Air Toxics Standards (MATS).

Trump ordered EPA in March to review regulations that "potentially burden the development or use of domestically produced energy resources," including the CPP. EPA later [disclosed](#) in a court filing they were also reviewing MATS.

The president ordered EPA and the U.S. Army Corps of Engineers to [rewrite](#) the WOTUS rule in a "manner consistent with the opinion of Justice Antonin Scalia in *Rapanos v. United States*."

But Pruitt wasn't the only attorney general to sue the Obama EPA. Dozens of states sued EPA over the CPP, WOTUS and MATS. Pruitt was part of a 27-state coalition suing the CPP and a 28-state coalition suing over WOTUS.

Twenty states sued EPA to have the MATS rule overturned. Pruitt's been consistent in saying he filed these suits because he saw these rules as federal overreach.

"They used the power of Washington, D.C. to coerce, to walk all over the states," Pruitt told WDAY.

Pruitt wants states to play a larger role in environmental regulation. Pruitt recently approved North Dakota's plan to create and administer its own implement and enforce its own carbon sequestration program.

"North Dakota is going to be the primary regulator of that," Pruitt said, adding the state had been trying to create its own program for four years.

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## ATTACHMENT 7



United States  
**Office of Government Ethics**  
1201 New York Avenue, NW., Suite 500  
Washington, DC 20005-3917

October 4, 2006

DO-06-029

MEMORANDUM

TO: Designated Agency Ethics Officials

FROM: Robert I. Cusick  
Director

SUBJECT: "Particular Matter Involving Specific Parties,"  
"Particular Matter," and "Matter"

Perhaps no subject has generated as many questions from ethics officials over the years as the difference between the phrases "particular matter involving specific parties" and "particular matter." These phrases are used in the various criminal conflict of interest statutes to describe the kinds of Government actions to which certain restrictions apply. Moreover, because these phrases are terms of art with established meanings, the Office of Government Ethics (OGE) has found it useful to include these same terms in various ethics rules. A third term, "matter," also has taken on importance in recent years because certain criminal post-employment restrictions now use that term without the modifiers "particular" or "involving specific parties."

It is crucial that ethics officials understand the differences among these three phrases. OGE's experience has been that confusion and disputes can arise when these terms are used in imprecise ways in ethics agreements, conflict of interest waivers, and oral or written ethics advice. Therefore, we are issuing this memorandum to provide guidance in a single document about the meaning of these terms and the distinctions among them.

Because the three phrases are distinguished mainly in terms of their relative breadth, the discussion below will proceed from the narrowest phrase to the broadest.

### **Particular Matter Involving Specific Parties**

The narrowest of these terms is "particular matter involving specific parties." Depending on the grammar and structure of the particular statute or regulation, the wording may appear in slightly different forms, but the meaning remains the same, focusing primarily on the presence of specific parties.

#### **1. Where the Phrase Appears**

This language is used in many places in the conflict of interest laws and OGE regulations. In the post-employment statute, the phrase "particular matter . . . which involved a specific party or parties" is used to describe the kinds of Government matters to which the life-time and two-year representational bans apply. 18 U.S.C. § 207(a)(1), (a)(2). Occasionally, ethics officials have raised questions because section 207 includes a definition of the term "particular matter," section 207(i)(3), but not "particular matter involving specific parties"; however, it is important to remember that each time "particular matter" is used in section 207(a), it is modified by the additional "specific party" language.<sup>1</sup>

In addition to section 207(a), similar language is used in 18 U.S.C. §§ 205(c) and 203(c). These provisions describe the limited restrictions on representational activities applicable to special Government employees (SGEs) during their periods of Government service.<sup>2</sup>

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<sup>1</sup> For a full discussion of the post-employment restrictions, see OGE DAE Ogram DO-04-023, at <https://www.oge.gov/Web/oge.nsf/Resources/DO-04-023:+Summary+of+18+U.S.C.+§+207>.

<sup>2</sup> These restrictions on SGEs are discussed in more detail in OGE DAE Ogram DO-00-003, at <https://www.oge.gov/Web/oge.nsf/Resources/DO-00-003:+Summary+of+Ethical+Requirements+Applicable+to+Special+Government+Employees>.

As explained below, 18 U.S.C. § 208 generally uses the broader phrase "particular matter" to describe the matters from which employees must recuse themselves because of a financial interest. However, even this statute has one provision, dealing with certain Indian birthright interests, that refers to particular matters involving certain Indian entities as "a specific party or parties." 18 U.S.C. § 208(b)(4); see OGE Informal Advisory Letter 00 x 12. Moreover, OGE has issued certain regulatory exemptions, under section 208(b)(2), that refer to particular matters involving specific parties. 5 C.F.R. § 2640.202(a), (b). Likewise, the distinction between particular matters involving specific parties and broader types of particular matters (i.e., those that have general applicability to an entire class of persons) is crucial to several other regulatory exemptions issued by OGE under section 208(b)(2). 5 C.F.R. §§ 2640.201(c)(2), (d); 2640.202(c); 2640.203(b), (g).

Finally, OGE has used similar language in various other rules. Most notably, the provisions dealing with impartiality and extraordinary payments in subpart E of the Standards of Ethical Conduct for Employees of the Executive Branch (Standards of Conduct) refer to particular matters in which certain persons are specific parties. 5 C.F.R. §§ 2635.502; 2635.503. OGE also uses the phrase to describe a restriction on the compensated speaking, teaching and writing activities of certain SGEs. 5 C.F.R. § 2635.807(a)(2)(i)(4).

## 2. What the Phrase Means

When this language is used, it reflects "a deliberate effort to impose a more limited ban and to narrow the circumstances in which the ban is to operate." Bayless Manning, Federal Conflict of Interest Law 204 (1964). Therefore, OGE has emphasized that the term "typically involves a specific

proceeding affecting the legal rights of the parties, or an isolatable transaction or related set of transactions between identified parties." 5 C.F.R. § 2640.102(1).<sup>3</sup> Examples of particular matters involving specific parties include contracts, grants, licenses, product approval applications, investigations, and litigation. It is important to remember that the phrase does not cover particular matters of general applicability, such as rulemaking, legislation, or policy-making of general applicability.<sup>4</sup>

Ethics officials sometimes must decide when a particular matter first involves a specific party. Many Government matters evolve, sometimes starting with a broad concept, developing into a discrete program, and eventually involving specific parties. A case-by-case analysis is required to determine at which stage a particular matter has sufficiently progressed to involve

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<sup>3</sup> This definition, found in OGE's regulations implementing 18 U.S.C. § 208, differs slightly from the definition found in the regulations implementing a now-superseded version of 18 U.S.C. § 207, although this is more a point of clarification than substance. Specifically, the old section 207 regulations referred to "identifiable" parties, 5 C.F.R. § 2637.201(c)(1), whereas the more recent section 208 rule refers to "identified" parties. As explained in the preamble to OGE's proposed new section 207 rule: "The use of 'identified,' rather than 'identifiable,' is intended to distinguish more clearly between particular matters involving specific parties and mere 'particular matters,' which are described elsewhere as including matters of general applicability that focus 'on the interests of a discrete and identifiable class of persons' but do not involve specific parties. [citations omitted] The use of the term 'identified,' however, does not mean that a matter will lack specific parties just because the name of a party is not disclosed to the Government, as where an agent represents an unnamed principal." 68 Federal Register 7844, 7853-54 (February 18, 2003).

<sup>4</sup> Usually, rulemaking and legislation are not covered, unless they focus narrowly on identified parties. See OGE Informal Advisory Opinions 96 x 7 ("rare" example of rulemaking that involved specific parties); 83 x 7 (private relief legislation may involve specific parties).

specific parties. The Government sometimes identifies a specific party even at a preliminary or informal stage in the development of a matter. E.g., OGE Informal Advisory Letters 99 x 23; 99 x 21; 90 x 3.

In matters involving contracts, grants and other agreements between the Government and outside parties, the general rule is that specific parties are first identified when the Government first receives an expression of interest from a prospective contractor, grantee or other party. As OGE explained recently in Informal Advisory Letter 05 x 6, the Government sometimes may receive expressions of interest from prospective bidders or applicants in advance of a published solicitation or request for proposals. In some cases, such matters may involve specific parties even before the Government receives an expression of interest, if there are sufficient indications that the Government actually has identified a party. See OGE Informal Advisory Letter 96 x 21.

### **Particular Matter**

Despite the similarity of the phrases "particular matter" and "particular matter involving specific parties," it is necessary to distinguish them. That is because "particular matter" covers a broader range of Government activities than "particular matter involving specific parties." Failure to appreciate this distinction can lead to inadvertent violations of law. For example, the financial conflict of interest statute, 18 U.S.C. § 208, generally refers to particular matters, without the specific party limitation. If an employee is advised incorrectly that section 208 applies only to particular matters that focus on a specific person or company, such as an enforcement action or a contract, then the employee may conclude it is permissible to participate in other particular matters, even though the law prohibits such participation.

1. Where the Phrase Appears

In addition to 18 U.S.C. § 208, several other statutes and regulations use the term "particular matter."<sup>5</sup> The representational restrictions applicable to current employees (other than SGEs), under 18 U.S.C. §§ 203 and 205, apply to particular matters.<sup>6</sup> As mentioned above, section 207 also contains a definition of "particular matter."<sup>7</sup> However, where the phrase is used in the post-employment prohibitions in

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<sup>5</sup> The relevant language in 18 U.S.C. § 208(a) is "a judicial or other proceeding, application, request for a ruling or other determination, contract, claim, controversy, charge, accusation, arrest, or other particular matter" (emphasis added).

<sup>6</sup> The prohibition in 18 U.S.C. § 205(a)(2) actually uses the phrase "covered matter," but that term is in turn defined as "any judicial or other proceeding, application, request for a ruling or other determination, contract, claim, controversy, investigation, charge, accusation, arrest or other particular matter," 18 U.S.C. § 205(h) (emphasis added).

<sup>7</sup> The definition in 18 U.S.C. § 207(i)(3) provides: "the term 'particular matter' includes any investigation, application, request for a ruling or determination, rulemaking, contract, controversy, claim, charge, accusation, arrest, or judicial or other proceeding." This language differs slightly from other references to "particular matter" in sections 203, 205 and 208, in part because the list of matters is not followed by the residual phrase "or other particular matter." However, OGE does not believe that the absence of such a general catch-all phrase means that the list of enumerated matters exhausts the meaning of "particular matter" under section 207(i)(3). The list is preceded by the word "includes," which is generally a term of enlargement rather than limitation and indicates that matters other than those enumerated are covered. See Norman J. Singer, 2A Sutherland on Statutory Construction 231-232 (2000).

section 207(a)(1) and (a)(2), it is modified by the "specific parties" limitation.<sup>8</sup>

The phrase "particular matter" is used pervasively in OGE's regulations. Of course, the term appears throughout 5 C.F.R. part 2640, the primary OGE rule interpreting and implementing 18 U.S.C. § 208. Similarly, it is used in 5 C.F.R. § 2635.402, which is the provision in the Standards of Conduct that generally deals with section 208. The phrase also is used throughout subpart F of the Standards of Conduct, which contains the rules governing recusal from particular matters affecting the financial interest of a person with whom an employee is seeking non-Federal employment. 5 C.F.R. §§ 2635.601-2635.606. Moreover, the phrase appears in the "catch-all" provision of OGE's impartiality rule, 5 C.F.R. § 2635.502(a)(2). See also 5 C.F.R. 2635.501(a).<sup>9</sup> Various other regulations refer to "particular matter" for miscellaneous purposes. E.g., 5 C.F.R. § 2635.805(a) (restriction on expert witness activities of SGEs); 5 C.F.R. § 2634.802(a)(1) (written recusals pursuant to ethics agreements).

## 2. What the Phrase Means

Although different conflict of interest statutes use slightly different wording, such as different lists of examples of particular matters, the same standards apply for determining what is a particular matter under each of the relevant statutes

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<sup>8</sup> At one time, the post-employment "cooling-off" restriction for senior employees in 18 U.S.C. § 207(c) applied to particular matters, but the language was amended (and broadened) in 1989 when Congress removed the adjective "particular" that had modified "matter." See 17 Op. O.L.C. 37, 41-42 (1993).

<sup>9</sup> Generally, section 2635.502 focuses on particular matters involving specific parties, as noted above. However, section 2635.502(a)(2) provides a mechanism for employees to determine whether they should recuse from other "particular matters" that are not described elsewhere in the rule. In appropriate cases, therefore, an agency may require an employee to recuse from particular matters that do not involve specific parties, based on the concern that the employee's impartiality reasonably may be questioned under the circumstances.



and regulations. See 18 Op. O.L.C. 212, 217-20 (1994). Particular matter means any matter that involves "deliberation, decision, or action that is focused upon the interests of specific persons, or a discrete and identifiable class of persons." 5 C.F.R. § 2640.103(a)(1) (emphasis added). It is clear, then, that particular matter may include matters that do not involve parties and is not "limited to adversarial proceedings or formal legal relationships." Van Ee v. EPA, 202 F.3d 296, 302 (D.C. Cir. 2000).

Essentially, the term covers two categories of matters: (1) those that involve specific parties (described more fully above), and (2) those that do not involve specific parties but at least focus on the interests of a discrete and identifiable class of persons, such as a particular industry or profession. OGE regulations sometimes refer to the second category as "particular matter of general applicability." 5 C.F.R. § 2640.102(m). This category can include legislation and policymaking, as long as it is narrowly focused on a discrete and identifiable class. Examples provided in OGE rules include a regulation applicable only to meat packing companies or a regulation prescribing safety standards for trucks on interstate highways. 5 C.F.R. §§ 2640.103(a)(1) (example 3); 2635.402(b)(3) (example 2). Other examples may be found in various opinions of OGE and the Office of Legal Counsel, Department of Justice. E.g., OGE Informal Advisory Letter 00 x 4 (recommendations concerning specific limits on commercial use of a particular facility); 18 Op. O.L.C. at 220 (determinations or legislation focused on the compensation and work conditions of the class of Assistant United States Attorneys).

Certain OGE rules recognize that particular matters of general applicability sometimes may raise fewer conflict of interest concerns than particular matters involving specific

parties.<sup>10</sup> Therefore, while both categories are included in the term "particular matter," it is often necessary to distinguish between these two kinds of particular matters. Of course, in many instances, the relevant prohibitions apply equally to both kinds of particular matters. This is the case, for example, in any application of 18 U.S.C. § 208 where there is no applicable exemption or waiver that distinguishes the two.

It is important to emphasize that the term "particular matter" is not so broad as to include every matter involving Government action. Particular matter does not cover the "consideration or adoption of broad policy options directed to the interests of a large and diverse group of persons." 5 C.F.R. § 2640.103(a)(1). For example, health and safety regulations applicable to all employers would not be a particular matter, nor would a comprehensive legislative proposal for health care reform. 5 C.F.R. § 2640.103(a)(1)(example 4), (example 8). See also OGE Informal Advisory Letter 05 x 1 (report of panel on tax reform addressing broad range of tax policy issues). Although such actions are too broadly focused to be particular matters, they still are deemed "matters" for purposes of the restrictions described below that use that term.

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<sup>10</sup> As noted above, OGE's impartiality rule generally focuses on particular matters involving specific parties. See OGE Informal Advisory Letter 93 x 25 (rulemaking "would not, except in unusual circumstances covered under section 502(a)(2), raise an issue under section 502(a)"). Furthermore, as also discussed above, several of the regulatory exemptions issued by OGE under 18 U.S.C. § 208(b)(2) treat particular matters of general applicability differently than those involving specific parties. The preamble to the original proposed regulatory exemptions in 5 C.F.R. part 2640 explains: "The regulation generally contains more expansive exemptions for participation in 'matters of general applicability not involving specific parties' because it is less likely that an employee's integrity would be compromised by concern for his own financial interests when participating in these broader matters." 60 Federal Register 47207, 47210 (September 11, 1995). Of course, Congress itself has limited certain conflict of interest restrictions to the core area of particular matters that involve specific parties. E.g., 18 U.S.C. § 207(a)(1), (a)(2).

A question that sometimes arises is when a matter first becomes a "particular matter." Some matters begin as broad policy deliberations and actions pertaining to diverse interests, but, later, more focused actions may follow. Usually, a particular matter arises when the deliberations turn to specific actions that focus on a certain person or a discrete and identifiable class of persons. For example, although a legislative plan for broad health care reform would not be a particular matter, a particular matter would arise if an agency later issued implementing regulations focused narrowly on the prices that pharmaceutical companies could charge for prescription drugs. 5 C.F.R. § 2640.102(a)(1)(example 8). Similarly, the formulation and implementation of the United States response to the military invasion of an ally would not be a particular matter, but a particular matter would arise once discussions turned to whether to close a particular oil pumping station or pipeline operated by a company in the area where hostilities are taking place. 5 C.F.R. § 2640.102(a)(1)(example 7).

## **Matter**

The broadest of the three terms is "matter." However, this term is used less frequently than the other two in the various ethics statutes and regulations to describe the kinds of Government actions to which restrictions apply.

### 1. Where the Phrase Appears

The most important use of this term is in the one-year post-employment restrictions applicable to "senior employees" and "very senior employees." 18 U.S.C. § 207(c), (d). In this context, "matter" is used to describe the kind of Government actions that former senior and very senior employees are prohibited from influencing through contacts with employees of their former agencies (as well as contacts with Executive Schedule officials at other agencies, in the case of very senior employees). The unmodified term "matter" did not appear in these provisions until 1989, when section 207(c) was amended to replace "particular matter" with "matter" and section 207(d) was first enacted. Pub. L. No. 101-194, § 101(a), November 30, 1989. OGE also occasionally uses the term "matter" in ethics regulations, for example, in the description of teaching,

speaking and writing that relates to an employee's official duties. 5 C.F.R. § 2635.807(a)(2)(E)(1).

## 2. What the Phrase Means

It is clear that "matter" is broader than "particular matter." See 17 Op. O.L.C. at 41-42. Indeed, the term is virtually all-encompassing with respect to the work of the Government.<sup>11</sup> Unlike "particular matter," the term "matter" covers even the consideration or adoption of broad policy options that are directed to the interests of a large and diverse group of persons. Of course, the term also includes any particular matter or particular matter involving specific parties.

Nevertheless, it is still necessary to understand the context in which the term "matter" is used, as the context itself will provide some limits. In 18 U.S.C. § 207(c) and (d), the post-employment restrictions apply only to matters "on which [the former employee] seeks official action." Therefore, the only matters covered will be those in which the former employee is seeking to induce a current employee to make a decision or otherwise act in an official capacity.

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<sup>11</sup> A now-repealed statute, 18 U.S.C. § 281 (the predecessor of 18 U.S.C. § 203), used the phrase "any proceeding, contract, claim, controversy, charge, accusation, arrest, or other matter" (emphasis added). One commentator noted that the term "matter" in section 281 was "so open-ended" that it raised questions as to what limits there might be on the scope. Manning, at 50-51. Manning postulated that some limits might be inferred from the character of the matters listed before the phrase "or other matter." *Id.* at 51. Whatever the force of this reasoning with respect to former section 281, the same could not be said with respect to 18 U.S.C. § 207(c) or (d), as neither of these current provisions contains an exemplary list of covered matters.

**Attorneys General of California, Illinois, Iowa, Maine, Maryland, Commonwealth of Massachusetts, New Mexico, New York, Oregon, Commonwealth of Pennsylvania, Rhode Island, Vermont, Washington, and the District of Columbia, and the Corporation Counsel of the City of Chicago**

December 8, 2017

*Via electronic transmission*

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RE: Comments on Environmental Protection Agency's Notices of Data Availability  
Regarding Proposed Delays of Oil and Natural Gas Sector Emission Standards

**Attention: Docket ID No. EPA-HQ-OAR-2017-0346**

**Docket ID No. EPA-HQ-OAR-2010-0505**

The Attorneys General of California, Illinois, Iowa, Maine, Maryland, the Commonwealth of Massachusetts, New Mexico, New York, Oregon, the Commonwealth of Pennsylvania, Rhode Island, Vermont, Washington, and the District of Columbia, and the Corporation Counsel of the City of Chicago ("States") respectfully submit these comments on the Environmental Protection Agency's ("EPA") two notices of data availability published on November 8, 2017<sup>1</sup> (the "NODAs") in support of the two proposed rules titled "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements"<sup>2</sup> and "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three Month Stay of Certain Requirements"<sup>3</sup> (collectively, the "Proposed Stay Rules").

The Proposed Stay Rules mark EPA's second attempt to exempt the oil and natural gas sector from the final rule titled "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources," published in the Federal Register on June 3, 2016 (the "2016 Rule"), which has been in effect for over one year. EPA's first attempt failed when the D.C. Circuit Court struck down the agency's administrative stay of key elements of the 2016 Rule, holding that EPA's action was arbitrary and capricious because the underlying reconsideration grant cited by EPA as the basis for the stay failed to satisfy the requirements of the Clean Air Act. *Clean Air Council v. Pruitt*, 2017 WL 2838112 (D.C. Cir. July 3, 2017).

In June 2017, EPA issued the Proposed Stay Rules, which would collectively stay, for a period of twenty-seven months, those same core compliance requirements contained in the 2016 Rule. But EPA failed to set forth the legal justification for the stays. On August 9, 2017, the

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<sup>1</sup> 82 Fed. Reg. 51,788 (Nov. 8, 2017); 82 Fed. Reg. 51,794 (Nov. 8, 2017)

<sup>2</sup> 82 Fed. Reg. 27,645 (June 16, 2017)

<sup>3</sup> 82 Fed. Reg. 27,641 (June 16, 2017)

States submitted a comment letter, which is incorporated by reference herein (see Docket ID Nos. EPA-HQ-OAR-2010-0505-11820; EPA-HQ-OAR-2017-0346-0281), opposing the Proposed Stay Rules. Our comment letter details how the Proposed Stay Rules are unlawful because (1) EPA lacks the statutory authority to stay compliance requirements in the 2016 Rule and (2) EPA fails to justify its reversal of its prior position regarding the importance of reducing methane emissions from the oil and natural gas sector and to reconcile the stay with its own rulemaking record. Our comment letter further identified how the Proposed Stay Rules would significantly harm the States by delaying reductions in emissions of methane, volatile organic compounds (“VOCs”), and hazardous air pollutants, thereby adversely impacting public health and the environment.

In the NODAs, EPA proposes to adopt the legal justification prepared by the American Petroleum Institute (API) and seeks comments on “the legal authority to issue a stay and the technological, resource, and economic challenges with implementing the fugitive emissions requirements, well site pneumatic pump standards, and the requirements for certification of closed vent systems by a professional engineer.” 82 Fed. Reg. 51,788. EPA also solicits comments on the recommendation that, as an alternative to the proposed stay, EPA should amend the 2016 Rule by extending the “phase-in” periods provided in the 2016 Rule. *Id.* at 51,791. The NODAs also present a reworked economic analysis that newly incorporates forgone climate benefits expected from the Proposed Stay Rules and applies EPA’s new “interim” domestic social cost of methane.

For the reasons stated herein, EPA’s Proposed Stay Rules, including EPA’s proposed alternative of extending compliance “phase-in” periods in the 2016 Rule, are unlawful. Indeed, we find that the NODAs merely compound the legal flaws with the Proposed Stay Rules by seeking to bolster EPA’s inadequate record in attempt to develop a post-hoc justification for rolling back the public health and environmental safeguards of the 2016 Rule. Therefore, we renew our request that EPA withdraw the Proposed Stay Rules and continue to implement and enforce the 2016 Rule.

#### **I. EPA MUST PUBLISH THE ANNUAL REPORTS SUBMITTED TO EPA IN ORDER FOR THE PUBLIC TO MEANINGFULLY COMMENT ON THE NODAS**

EPA vaguely asserts in the NODAs, without providing supporting data, that affected facilities are unable to implement certain requirements in the 2016 Rule and therefore a stay or “extended phase-in” of compliance requirements is necessary. The 2016 Rule has been in effect for over one year and affected facilities have already had to comply with the requirements that EPA now seeks to delay. Under the 2016 Rule, affected facilities were required to submit to EPA annual reports documenting compliance with its requirements by October 31, 2017. *See* 40 C.F.R. Part 60, Subpart OOOOa. If stakeholders are actually complying with the requirements, that would undermine the presumption behind the NODAs. If industry is failing to comply, that information should be disclosed so that appropriate enforcement action can be taken. Either way, that information needs to see the light of day.

For this reason, on November 21, 2017, many of the States formally submitted a Freedom of Information Act request that EPA make public the annual reports submitted to EPA pursuant to 40 C.F.R. Part 60, Subpart OOOOa, and any related records that have been created by EPA. In addition, those States requested that EPA extend the comment deadline for the NODAs to ninety days after the reports are made available to allow adequate time for review and comment. EPA has not responded to that request for an extension of the comment deadline, but instead has requested an extension until January 19, 2018 to respond to the FOIA. *See* Attachment A. EPA's failure to make the annual reports publicly available before the comment deadline for the NODAs constitutes a procedural error, rendering any final decision arbitrary and capricious. *See* 42 U.S.C. § 7607(d)(9). EPA's failure deprives the States and the public of the opportunity to usefully respond to EPA concerning any purported implementation challenges.

"The purpose of the comment period is to allow interested members of the public to communicate information, concerns, and criticisms to the agency during the rule-making process." *Connecticut Light & Power Co. v. Nuclear Regulatory Com.*, 673 F.2d 525, 530-531 (D.C. Cir. 1982). "In order to allow for useful criticism, it is especially important for the agency to identify and make available technical studies and data that it has employed in reaching the decisions to propose particular rules." *Id.* For a decision to be sustained, "the agency must consider all of the relevant factors and demonstrate a reasonable connection between the facts on the record and the resulting policy choice." *Sierra Club v. Costle*, 657 F.2d 298, 323 (D.C. Cir. 1981).

In general, an agency's failure to make data underlying a proposed rule publicly available precludes an agency from considering all relevant factors in making a decision. *See National Black Media Coalition v. Federal Communications Commission*, 791 F.2d 1016 (2d Cir. 1986) (holding FCC's use of critical, unpublished data to reach rulemaking decision precluded the agency from considering all relevant factors in making a decision and rendered it arbitrary and capricious); *United States v. Nova Scotia Food Prod. Corp.*, 586 F.2d 240, 251-52 (2d Cir. 1977) (holding FDA's failure to disclose the scientific data upon which the FDA relied prevented the agency from considering all relevant factors and was procedurally erroneous.) "To suppress meaningful comment by failure to disclose the basic data relied upon is akin to rejecting comment altogether." *Id.* at 252.

Under the Clean Air Act, EPA is subject to an even more extensive notice requirement than under the Administrative Procedure Act cases discussed above. *See Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 550 (D.C. Cir. 1983) ("[T]he additional notice requirements in § 307(d)(3) suggest that Congress intended agency notice under the Clean Air Act to be more, not less, extensive than under the APA.") Section 307(d)(3) states that a notice of proposed rulemaking "shall be accompanied by a statement of its basis and purpose" including "the factual data on which the proposed rule is based; the methodology used in obtaining and in analyzing the data; and the major legal interpretations and policy considerations underlying the proposed rule." 42 U.S.C. § 7607(d)(3). Courts interpreting this section have found that EPA's failure to make data relating to the basis for its regulations publicly available made "meaningful comment on the merits of EPA's assertions impossible" and constituted reversible error.

*Kennecott Corp. v. EPA*, 684 F.2d 1007 (D.C. Cir. 1982) (holding EPA’s failure to include data in the docket “constitutes reversible error, for the uncertainty that might be clarified by those documents . . . indicates a substantial likelihood that the regulations would have been significantly changed.”) “It is not consonant with the purpose of a rule-making proceeding to promulgate rules on the basis of inadequate data, or on data that, (in) critical degree, is known only to the agency.” *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375, 392-95 (D.C. Cir. 1973).

For these reasons, we reiterate our request that EPA promptly make public the annual reports submitted to EPA pursuant to 40 C.F.R. Part 60, Subpart OOOOa, and extend the comment deadline for the NODAs to ninety days after the reports are made available to allow adequate time for the public to meaningfully comment. EPA has, in the past, granted an extension of the comment period when a NODA presents new technical information and legal justification for a proposed rule.<sup>4</sup> We ask that EPA follow its past precedent here and extend the comment period to ensure that the public has sufficient time to review and comment on all the information available supporting its proposed rules.

## **II. THE PROPOSED STAY RULES ARE NOT AUTHORIZED UNDER THE CLEAN AIR ACT OR THE ADMINISTRATIVE PROCEDURE ACT**

In the NODAs, EPA solicits comments on the legal theories discussed in the comment letter submitted by API on July 27, 2017, Docket ID No. EPA-HQ-OAR-2010-0505-10577. Specifically, EPA requests comments on API’s assertion that Clean Air Act section 111 authorizes EPA to revise the 2016 Rule by extending compliance deadlines or establishing future compliance dates. EPA further requests comments on API’s assertion that the Proposed Stay Rules are authorized under EPA’s general rulemaking authority of Clean Air Act section 301. Finally, EPA solicits comments on API’s argument that Administrative Procedure Act section 705 authorizes the Proposed Stay Rules because the term “postpone” in that section includes “delay, defer, adjourn, shelve, table, and put on hold.” Docket ID No. EPA-HQ-OAR-2010-0505-10577 at 7.

Although EPA may revise the 2016 Rule, it must follow the procedures mandated by Clean Air Act section 111 and must therefore demonstrate that the revisions are consistent with section 111 principles and requirements. As discussed in our August 9, 2017 comment letter and as further detailed below, no provision in the Clean Air Act provides EPA with the authority to stay a duly promulgated regulation for twenty-seven months. EPA only has authority, under section 307(d)(7)(b), to stay a rule for no more than three months. Unless EPA completes a rulemaking that substantively amends the 2016 Rule’s standards consistent with this statutory

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<sup>4</sup> See *Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units*, 79 Fed. Reg. 12,681 (Mar. 6, 2014); Letter from Attorneys General for the States of West Virginia, Oklahoma, Alabama, South Carolina, Kansas, Texas, Nebraska, Wyoming, and Ohio to Gina McCarthy, EPA Administrator (Feb. 21, 2014).



mandate and pursuant to a reasoned justification with support in the administrative record, EPA cannot alter the compliance requirements in the 2016 Rule. Nor can EPA rely on Administrative Procedure Act section 705 to “put on hold” the 2016 Rule because section 705 only permits an agency to postpone the effective date of a rule *that is not yet effective*. Given that the 2016 Rule has been in effect for over one year, APA section 705 provides no authority for the Proposed Stay Rules.

**A. EPA’s Proposed Stay and Extended “Phase-in” of Compliance Requirements Do Not Meet the Reasoned Decision-making and Rulemaking Requirements under Section 111 of the Clean Air Act to Revise the 2016 Rule**

The Proposed Stay Rules and EPA’s proposed alternative of an extended “phase-in” of compliance requirements constitute a substantive revision to the 2016 Rule, which may only be accomplished if it is permissible under the statute, and there are good reasons for it supported by the agency’s record. *See FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009). API’s comment letter, in contrast, incorrectly argues that EPA has authority under Clean Air Act section 111 to “extend compliance deadlines or establish future compliance dates” divorced from any consideration of the principles of section 111. 82 Fed. Reg. at 51789. EPA therefore cannot rely on API’s incorrect contention to support its proposed stay and extended “phase-in.”

For EPA’s proposed revisions to the 2016 Rule to be permissible under the Clean Air Act, EPA must comply with the procedures and substantive requirements of section 111. *See* 42 U.S.C. § 7411(b)(1)(B) (requiring EPA to “revise such standards following the procedures required by this subsection for promulgation of such standards.”) EPA must demonstrate that the standard or revision “reflects the degree of emission limitation achievable through the application of the best system of emission reduction (“BSER”) which (taking into account the costs of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.” 42 U.S.C. § 7411(a).<sup>5</sup> EPA must also “consider the emission limitations and percent reductions achieved in practice.” 42 U.S.C. § 7411(b)(1)(B).

EPA fails to meet any of these requirements here. EPA does not explain how the Proposed Stay Rules or an extended “phase-in” reflects the BSER. EPA also fails to explain how the

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<sup>5</sup> EPA seeks to revise standards of performance in the 2016 Rule promulgated under section 111(b), as well as “work practice” standards promulgated under section 111(h). “Work practice” standards must reflect “the best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.” 42 U.S.C. § 7411(h). Given that both types of standards are “treated as a standard of performance for purposes of the provisions of this chapter” (see 42 U.S.C. § 7411(h)(5)), both are referred to as BSER standards.

current compliance timeline presents implementation challenges. In developing the 2016 Rule, EPA compiled a robust administrative record supporting why the compliance deadlines were achievable by the affected facilities. But now EPA does not point to any factual support that an extended “phase-in” is necessary, and instead seeks to bolster its inadequate record by “soliciting comments, data, and any other information that would help the EPA determine whether a phase-in period . . . is needed and, if so, the length of such period.” 82 Fed. Reg. at 51789. EPA’s proposed revision also entirely ignores section 111’s technology-forcing mandate to consider the emission limitations and percent reductions achieved in practice.” 42 U.S.C. § 7411(b)(1)(B); see also *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375, 391 (D.C.Cir.1973) (recognizing that section 111 “looks toward what may fairly be projected for the regulated future, rather than the state of the art at present.”)<sup>6</sup>

EPA further fails to find support in the administrative record for its purported reasons behind its Proposed Stay Rules and extended “phase-in” of compliance requirements. In the NODAs, EPA asserts that the stay of the 2016 Rule and extended “phase in” are “lawful exercises of the EPA’s statutory authority and discretion under the CAA” in order to: (1) prevent disruption to existing state programs and company specific programs; (2) provide clarity on what is a “greenfield site”; and (3) consider the costs associated with closed vent certification by professional engineers. 82 Fed. Reg. at 51791. With respect to the first reason, EPA claims that the alternative methods of emissions limitation (“AMEL”) process requires clarification before sources can apply and obtain approval to implement their current state program in lieu of the 2016 Rule. *Id.* But, EPA does not provide any evidence or data supporting its assertion that actual affected facilities have applied for, and failed to receive, approval for AMEL. Nor has the agency explained why it cannot issue guidance to resolve any alleged lack of clarity in the AMEL application process or the “greenfield” definition. Without this factual support or explanation, EPA cannot now contend that clarifying the AMEL and “greenfield” provisions provide good reasons for revising the 2016 Rule. EPA also points to the costs associated with certification by professional engineers as justification for the proposed stay and revision, but it fails to reconcile those purported costs with the other substantive factors mandated by section 111 (e.g., nonair quality health and environmental impacts, amount of air pollution reduced, and technological innovation.)

For these reasons, EPA’s proposed stay and extended “phase-in” fail to meet the substantive and procedural requirements to revise an emission standard promulgated under section 111 of the Clean Air Act. EPA’s proposed action also lacks a “good reason” for the change in course and “a reasoned explanation . . . for disregarding facts and circumstances that underlay or were engendered by the prior policy.” *FCC v. Fox Television Stations, Inc.*, 556

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<sup>6</sup> API points to *Portland Cement* for the proposition that “EPA has authority to set future effective BSER.” Docket ID No. EPA-HQ-OAR-2010-0505-10577 at 4. However, nothing in that case, or in *Lignite Energy Council v. EPA*, 198 F.3d 930 (D.C. Cir. 1999), also cited by API, has any bearing on whether EPA may extend an *existing* deadline under Section 111 without completing a new rulemaking in accordance with the requirements of that Section.

U.S. 502, 515 (2009). Indeed, EPA has not provided any factual basis for rejecting or revising the conclusions set forth in the rulemaking record for the 2016 Rule. Accordingly, EPA's proposed revision to the 2016 Rule does not meet the reasoned decision-making and rulemaking requirements of the Clean Air Act and is arbitrary and capricious. *See* 42 U.S.C. § 7607(d)(9)(A).

**B. EPA's General Rulemaking Authority Under Clean Air Act Section 301 Does Not Authorize the Proposed Stay Rules**

Section 301 authorizes the EPA Administrator "to prescribe such regulations as are necessary to carry out his functions under this chapter." 42 U.S.C. § 7601(a)(1). But, it "does not provide the Administrator with carte blanche authority to promulgate any rules, on any matter relating to the Clean Air Act, in any manner that the Administrator wishes." *Citizens to Save Spencer City v. EPA*, 600 F.2d 844, 873 (D.C. Cir. 1979). Further, the general power of section 301 does not trump the specific statutory provisions of the Clean Air Act. *See Natural Res. Def. Council v. Reilly*, 976 F.2d 36, 40-41 (D.C. Cir. 1992) ("*Reilly*"); *see also Morales v. Trans World Airlines, Inc.*, 504 U.S. 374, 384 (1992) ("[I]t is a commonplace of statutory construction that the specific governs the general."). Therefore, EPA's general rulemaking authority under section 301(a) of the Clean Air Act does not authorize the Proposed Stay Rules or the alternative extended phase-in of compliance requirements.

*Reilly* is directly on point here. In that case, petitioners challenged one of a series of EPA actions staying duly promulgated section 112 standards for radionuclide emissions from sources other than nuclear power plants for over a year following a notice and comment rulemaking. EPA had imposed the stay while it actively reconsidered the standards in language almost identical to what EPA uses in the Proposed Stay Rules and the NODAs, reasoning that "'it would be inappropriate to compel [certain] facilities ... to make all of the initial expenditures of time and resources' to comply with the emission standards 'when it is possible that EPA will conclude that EPA regulation of some or all of these facilities is duplicative and unnecessary.'" *Id.* at 39 (citing 56 Fed. Reg. 18,735, 18,736 (1991)). The court found that "both the language and the purpose of the Act and the 1990 Amendments preclude the authority claimed by the EPA to stay the effectiveness of the standards." *Id.* at 40. Instead, the court held that "EPA ha[s] no authority to stay the effectiveness of a promulgated standard except for the single, three-month period authorized by section 307(d)(7)(B)." *Id.* at 40-41. Thus, EPA's reliance on section 301 here is unsupportable.

EPA incorrectly attempts to distinguish *Reilly* by asserting that unlike section 112, EPA has the "discretion under CAA section 111(B)(1)(B) to add new standards of performance." Whether EPA promulgated the 2016 Rule under EPA's discretionary duty is beside the point. The question is not whether EPA must regulate as a threshold matter – it already decided to do so

in promulgating the 2016 Rule. The question here is whether EPA has the authority under the Clean Air Act to stay the 2016 Rule for twenty-seven months. As discussed above, it does not.<sup>7</sup>

**C. EPA Cannot Rely on Administrative Procedure Act Section 705 for the Proposed Stay Rules**

Given that the 2016 Rule has been in effect for over one year, EPA cannot rely on section 705 for the Proposed Stay Rules. Under section 705 of the Administrative Procedure Act, an agency “may postpone the effective date of action taken by it, pending judicial review” when it “finds that justice so requires.” 5 U.S.C. § 705. As the D.C. Circuit has found, section 705 only “permits an agency to postpone the effective date of a not yet effective rule, pending judicial review.” *Safety-Kleen Corp. v. EPA*, No. 92-1629, 1996 U.S. App. LEXIS 2324, at \*2-3 (D.C. Cir. Jan. 19, 1996) (per curiam); *see also Becerra v. United States Department of Interior*, No. 17-CV-02376-EDL, 2017 WL 3891678, at \*9 (N.D. Cal. Aug. 30, 2017) (agreeing with *Safety-Kleen Corp.* and holding that the plain language of Section 705 authorizes postponement of only the effective date, not subsequent dates characterized by the agency as “compliance dates”); *California v. United States Bureau of Land Mgmt.*, No. 17-CV-03804-EDL, 2017 WL 4416409, at \*8 (N.D. Cal. Oct. 4, 2017) (holding that agency’s attempt to delay compliance with rules on methane releases from oil and gas industry that were already in effect was “contrary to the plain language of” section 705). API’s interpretation of section 705 as authorizing the postponement of the effectiveness of a rule after it has gone into effect contradicts the plain language of the statute and has since been squarely rejected by the courts. Therefore, EPA cannot rely on API’s legal argument as a basis for the Proposed Stay Rules.

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<sup>7</sup> To the extent EPA is relying on section 301 to revise the phase-in periods provided in the 2016 Rule, EPA’s reliance is misplaced as section 111 governs the revision of an emission standard. See *infra* Section II. A

### III. CONCLUSION

For these reasons, the States remain strongly opposed to the Proposed Stay Rules, including EPA's proposed alternative of extending compliance "phase-in" periods in the 2016 Rule. We therefore respectfully request that EPA not finalize the Proposed Stay Rules.

Sincerely,

FOR THE STATE OF CALIFORNIA

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## ATTACHMENT A



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December 8, 2017

***Via U.S. Mail and Electronic Mail***

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(202) 564-7042

**RE: Freedom of Information Act Request for Records Related to Reporting Required by  
40 C.F.R. Part 60 Subpart OOOOa (EPA-HQ-2018-001886)**

Dear Ms. Mia:

This letter memorializes our telephone conversation of December 6, 2017, whereby we discussed the FOIA request submitted by the Attorney Generals of California, Iowa, the Commonwealth of Massachusetts, Oregon, Vermont, and the District of Columbia, the State of Colorado, and the Corporation Counsel of the City of Chicago ("States") to the U.S. Environmental Protection Agency (EPA) on November 21, 2017. *See* Attachment 1.

As we discussed, of central concern to the States is the fact that EPA's failure to make public the annual reports submitted to EPA pursuant to 40 C.F.R. Part 60, Subpart OOOOa has deprived California, along with the other states and cities working together on joint comments, of the ability to comment meaningfully on the two "notices of data availability" published in the Federal Register on November 8, 2017 (the "NODAs"). For this reason, the States renew their request that EPA agree to extend the comment deadline for the NODAs until ninety days after January 19, 2018 so that we have sufficient time to review the responsive records and meaningfully comment on the NODAs. *See* Attachment 2. Without such an extension of time to comment on the NODAs, the States cannot agree to EPA's request for an extension until January 19, 2108 to produce records responsive to our request.

With respect to the other matters we discussed on our call, the States agree to the following:

**General issues**

1. We understand that our request may involve voluminous material and searches in multiple locations within EPA. Therefore, we are requesting that EPA provide interim responses and release the records on a "rolling basis." *See, e.g.,*

<https://www.justice.gov/oip/template-agency-foia-regulations>. As we discussed, this means that EPA will provide responsive documents as soon as those documents are available. For example, there are currently (at least) 43 annual reports in the CEDRI database. Copies of those documents currently in CEDRI should be provided to us as soon as possible.

2. We agree to limit the geographic scope of our request to EPA's Headquarters and EPA Regions 3, 4, 5, 6, 7, 8, 9, and 10.
3. In response to your request for a start date for EPA's records search, please provide all records responsive to our request between August 2, 2016 and November 21, 2017.

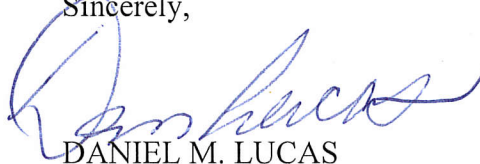
**Item 1**

We do not agree to limit the scope of Item 1 (a)-(e) in our request to those reports in CEDRI. As we discussed, affected facilities are not required to submit annual reports electronically until 90 days after the final template is posted in CEDRI. Given that only 43 reports have been submitted on CEDRI to date, you agreed with us that most affected facilities likely submitted hard copies of their annual reports to EPA. Therefore, we must insist that EPA produce all records responsive to Item 1 (a)-(e), regardless of whether they were received electronically, on paper, or via any media.

**Items 2 and 3**

1. We agree to limit the scope of "EPA," as that term is used in Items 2 and 3, to include only the Office of Enforcement and Compliance Assurance, the Office of the Administrator, and the Office of Air and Radiation (excluding the sub-offices of the Office of Radiation and Indoor Air, and the Office of Transportation and Air Quality).
2. We do not agree to limit the scope of records requested in Items 2 and 3 to email correspondence. Therefore, please provide all responsive records.

Sincerely,



DANIEL M. LUCAS  
Deputy Attorney General

For XAVIER BECERRA  
Attorney General

Encl.

cc: William Wehrum, Assistant Administrator, Office of Air and Radiation  
Peter Tsirigotis, Office of Air Quality Planning and Standards

## **ATTACHMENT 1**

**XAVIER BECERRA**  
*Attorney General*

*State of California*  
**DEPARTMENT OF JUSTICE**



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November 21, 2017

**SUBMITTED ELECTRONICALLY**

National Freedom of Information Officer  
U.S. Environmental Protection Agency 1200  
Pennsylvania Avenue, NW (2822T)  
Washington, DC 20460  
(202) 566-1667

**RE: Freedom of Information Act Request for Records Related to Reporting Required by  
40 C.F.R. Part 60 Subpart OOOOa**

Dear National Freedom of Information Officer:

Pursuant to the Freedom of Information Act (FOIA), 5 U.S.C. §552, as amended, and its implementing regulations, the Attorney Generals of California, Iowa, the Commonwealth of Massachusetts, Oregon, Vermont, and the District of Columbia, the State of Colorado, and the Corporation Counsel of the City of Chicago ("States") hereby make this request for records. This request describes: (1) the records sought; and (2) our request for a fee waiver for production of these records.

Request for Materials

The States believe that EPA is in possession of records, as that term is described at 5 U.S.C. § 552(f)(2), related to reporting made pursuant to 40 C.F.R. Part 60 Subpart OOOOa ("Subpart OOOOa"). These records include, but are not limited to, communications, documents, letters, information, notes, memoranda, electronic mail transmissions or other electronic forms of information, telephone logs and records, meeting records, reports, analyses, assessments, data, and modeling, including all drafts and preliminary forms of any such records.

Specifically, the States request the following records:

1. Reports submitted to EPA pursuant to Subpart OOOOa's reporting requirements including, but not limited to, the following reports:

(a) Results of the Performance Test, as required by 40 C.F.R. § 60.5420a(b)(9)(i);

(b) Initial Semiannual Reports, as required by 40 C.F.R. § 60.5422a(b);

- (c) Semiannual Reports, as required by 40 C.F.R. § 60.5422a(a);
- (d) Annual Reports, as required by 40 C.F.R. § 60.5420a(b); and
- (e) Annual Reports of Excess Emissions for Sweetening Units, as required by 40 C.F.R. § 60.5423a(b).

2. Copies of all correspondence between EPA and outside parties containing:

- (a) reference to the new source performance standards for the oil and gas sector, Subpart OOOOa, or any of the specific reports or regulatory provisions listed above in paragraph (1) of this request; and
- (b) one or more of the following terms:
  - (i) "comply," including any inflection thereof (e.g., "complies," "complying," "compliant," or "compliance");
  - (ii) "deadline" or "deadlines";
  - (iii) "delay," including any inflection thereof (e.g., "delays," "delayed," or "delaying");
  - (iv) "due";
  - (v) "enforce," including any inflection thereof (e.g., "enforces," "enforcing," or "enforcement");
  - (vi) "extend," including any inflection thereof (e.g., "extends," "extending," "extension," or "extensions");
  - (vii) "postpone," including any inflection thereof (e.g., "postpones," "postponed," "postponing," or "postponement"); or
  - (viii) "variance" or "variances."

3. Copies of all internal correspondence within EPA containing:

- (a) reference to the new source performance standards for the oil and gas sector, Subpart OOOOa, or any of the specific reports or regulatory provisions listed above in paragraph (1) of this request; and
- (b) one or more of the following terms:
  - (i) "comply," including any inflection thereof (e.g., "complies," "complying," "compliant," or "compliance");

- (ii) "deadline" or "deadlines";
- (iii) "delay," including any inflection thereof (e.g., "delays," "delayed," or "delaying");
- (iv) "due";
- (v) "enforce," including any inflection thereof (e.g., "enforces," "enforcing," or "enforcement");
- (vi) "extend," including any inflection thereof (e.g., "extends," "extending," "extension," or "extensions");
- (vii) "postpone," including any inflection thereof (e.g., "postpones," "postponed," "postponing," or "postponement"); or
- (viii) "variance" or "variances."

Please provide all of the requested records on a rolling basis. If any of the information sought in this request is deemed by EPA to be exempt from production pursuant to one or more exemptions set forth at 5 U.S.C. § 552(b), then please provide an explanation, for each such record or portion thereof, sufficient to identify the record and the particular exemption(s) claimed.

#### Request for Fee Waiver

The States are, of course, noncommercial organizations not subject to review fees. In addition, the States respectfully request a waiver of search and copying fees. Under FOIA, agencies must waive such fees where disclosure is likely to contribute to public understanding of the operations and activities of the government and disclosure is not primarily in the commercial interest of the requester. *See* 5 U.S.C. § 552(a)(4)(A)(iii); 40 C.F.R. § 2.107(l)(1). EPA has incorporated this requirement in its regulations for responding to FOIA requests. 40 C.F.R. section § 2.107.

As discussed below, each of the four factors that EPA uses to assess whether the requested information in fact is in the public interest and likely to contribute significantly to public understanding of the operations or activities of the government demonstrates that a waiver is proper here. And because the States are governmental, and not a commercial, entities, the second fee waiver requirement—that the request "is not primarily in the commercial interest of the requester"—is not applicable. 40 C.F.R. § 2.107(l)(1).

*The Subject of the Request Concerns the Operations or Activities of the Government.*

The requested records, which relate to oil and gas industry reporting pursuant to 40 C.F.R. Part 60 Subpart OOOOa, directly concern the "operations or activities of the government." 40 C.F.R. § 2.107(l)(2)(i).

Under Clean Air Act § 111(b), when the EPA administrator determines that a category of sources "causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare," the Administrator "shall" include that category on a list of stationary sources. 42 U.S.C. § 7411(b)(1)(A). Pursuant to § 111(b), EPA listed crude oil and natural gas production as a source category that contributes significantly to air pollution that may reasonably be anticipated to endanger public health and welfare. *See Priority List and Additions to the List of Categories of Stationary Sources*, 44 Fed. Reg. 49,222 (Aug. 21, 1979).

Methane is a particularly powerful agent of climate change; pound-for-pound, methane warms the climate about thirty-four times more than carbon dioxide over a 100-year period, according to the Intergovernmental Panel on Climate Change, and on a twenty-year timeframe, has about eighty-six times the global warming potential of carbon dioxide. According to EPA, the oil and gas sector is the largest industrial emitter of methane in the U.S., accounting for a third of total U.S. methane emissions.<sup>1</sup> Oil and gas production, transmission, and distribution results in massive leakage of methane to the atmosphere.

Numerous scientific assessments, including, but not limited to, EPA's 2009 greenhouse gas endangerment determination, the assessments of the International Panel on Climate Change, the U.S. Global Change Research Program and the National Academy of Sciences, and scientific studies undertaken by states across the nation, establish that anthropogenic greenhouse gas emissions, including methane, may reasonably be anticipated to endanger public health or welfare. The oil and natural gas source category causes or contributes significantly to such greenhouse gas air pollution. As well, available technology can effectively and efficiently reduce methane emissions from the oil and natural gas industry. As a result, in 2015, EPA promulgated a final New Source Performance Standard under Clean Air Act § 111(b) for methane emissions from new and modified oil and natural gas sources. *Oil and Natural Gas Sector Emission Standards for New, Reconstructed and Modified Sources*, 81 Fed. Reg. 35, 824 (June 3, 2016).

Nevertheless, on June 16, 2017, EPA proposed two rules that would collectively stay, for a period of two years and three months, the compliance requirements contained in the final rule titled "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified

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<sup>1</sup> EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015 (2017) ("2017 GHGI"), at ES-16, Table ES-2, available at [https://www.epa.gov/sites/production/files/2017-02/documents/2017\\_complete\\_report.pdf](https://www.epa.gov/sites/production/files/2017-02/documents/2017_complete_report.pdf)

Sources,” published in the Federal Register on June 3, 2016 (the “2016 Rule”).<sup>2</sup> More recently, EPA issued notices of data availability (NODAs) discussing “the technological, resource, and economic challenges with implementing” certain compliance requirements in the 2016 Rule.<sup>3</sup> The NODAs reference feedback from stakeholders that affected facilities are unable to implement certain requirements in the 2016 Rule and therefore a stay or “extended phase-in” of compliance requirements is necessary.

The documents sought by this FOIA request will assist the public’s understanding of methane emissions from the oil and gas sector, cost effective methods of controlling those emissions. The documents will also assist the public’s understanding of the volume of natural gas currently escaping to the atmosphere, where it cannot be put to productive use, and the economic cost of failure to control those emissions. Finally, the documents sought by this FOIA will provide the public’s understanding about EPA’s responses to methane emissions and the bases for those responses.

*The Disclosure Is Very Likely to Contribute to an Understanding of Government Activities and Operations.*

Americans are deeply concerned about the impacts of climate change, which are already being felt across the United States. A recent 2017 poll by the Yale Program on Climate Communication shows that Americans broadly support action on climate change—seven in ten Americans support regulating carbon dioxide from coal-fired power plants, and seventy-five percent support regulation of carbon dioxide more generally.<sup>4</sup> The Yale polling shows that most Americans know that climate change is occurring now, and a majority agree it is already harming people in the United States.<sup>5</sup>

A poll conducted from March 30 through April 3, 2017, by Quinnipiac University found that two-thirds of Americans are “very concerned” or “somewhat concerned” that climate change will affect them or a family member personally.<sup>6</sup> Three-quarters are “very” or “somewhat”

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<sup>2</sup> *Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three Month Stay of Certain Requirements*, 82 Fed. Reg. 27,641 (June 16, 2017); *Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements*, 82 Fed. Reg. 27,645 (June 16, 2017).

<sup>3</sup> 82 Fed. Reg. 51,788 (Nov. 8, 2017).

<sup>4</sup> Nadja Popovich, John Schwartz, Tatiana Schlossberg, *How Americans Think About Climate change in Six Maps*, N.Y. TIMES (Mar. 21, 2017), <https://www.nytimes.com/interactive/2017/03/21/climate/how-americans-think-about-climate-change-in-six-maps.html>

<sup>5</sup> *Id.*

<sup>6</sup> Hannah Hess, *Voters object to cutting climate research—poll*, E&E NewsPM (Apr. 5, 2017), <http://www.eenews.net/eenewspm/2017/04/05/stories/1060052676>



concerned about climate change, and fifty-nine percent want government action to address the threat of climate change.<sup>7</sup>

Climate change is having a very real, significant, and adverse impact on American families and businesses. Just this year, after drought and unseasonably high temperatures set the stage, wildfires ravaged California, Kansas, Oklahoma, and Texas. Without reduction in global warming pollution like methane, the impacts of climate change will only worsen. *See generally, Our Changing Planet*, U.S. Global Change Research Program for FY 2017 at 2 (hereinafter, "USGCRP Report") (climate-driven impacts include risks to human health; more frequent and intense storms that threaten food security, infrastructure, and livelihoods; sea level rise and coastal flooding; international stability; and U.S. national security).

The National Aeronautics and Space Administration ("NASA") and the National Oceanic and Atmospheric Administration ("NOAA") have confirmed that 2016 was the warmest year on record globally.<sup>8</sup> NASA observed, "2016 is remarkably the third record year in a row in this series . . . . We don't expect record years every year, but the ongoing long-term warming trend is clear." *See also* USGCRP Report at 2 (internal citations omitted) ("The global environment is changing rapidly. . . . [G]lobally-averaged temperatures in 2015 shattered the previous record, which was set in 2014; and 2016 is on track to break the 2015 record."). According to NASA, the Earth's average temperature has risen about two degrees Fahrenheit since the late nineteenth century, due largely to increased carbon dioxide and other human-made emissions in the atmosphere. And most of that warming has occurred in our lifetimes, in the past thirty-five years. Indeed, sixteen of the seventeen warmest years on record have occurred since 2001.

The documents that the States seek through this request are based on private oil and gas sector data reported to the EPA regarding methane emissions and are not generally available in the public domain. The documents are critically important to the public's understanding of the volume and sources of methane emissions from new, reconstructed, and modified oil and gas facilities' standard production, processing and transmission activities. *See* 40 C.F.R. § 2.107(1)(2)(i). The documents will likely be highly informative because of its potential to shed significant light on the merits of the EPA's standards for new, reconstructed, and modified oil and gas facilities; and also on cost-effective measures that EPA may opt to pursue to satisfy its Clean Air Act statutory obligation to protect the environment and human health by controlling methane emissions from existing oil and gas sector sources. *Id.*

*Contribution to an Understanding of the Subject by the Public Is Likely to Result from the Disclosure.*

The States routinely engage with the public and press, and serve as a source of information to promote public understanding of issues, while advocating in the public interest.

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<sup>7</sup> *Id.*

<sup>8</sup> NASA, NOAA Data Show 2016 Warmest Year on Record Globally, NASA (Jan. 18, 2017), <https://www.nasa.gov/press-release/nasa-noaa-data-show-2016-warmest-year-on-record-globally>.

For example, California's Office of the Attorney General regularly issues press releases in connection with its work that are made available on the Attorney General's website, *see* <https://oag.ca.gov/media/news>, and representatives of the Office frequently speak on issues of public concern. California's Attorney General also posts regularly on issues of public concern to the Office's Twitter account, which has over 50,000 followers, *see* <https://twitter.com/AGBecerra>.

Moreover, the Offices of Attorney General from the States have specialized expertise in environmental regulation and they regularly engage in enforcement of state and federal environmental laws. These attorneys general intend to analyze the data released pursuant to this request and inform the public of any newsworthy information found in the documents requested. Thus, the States are particularly well suited to present information from the documents presented to the public in a manner that is accessible and understandable to non-experts. Accordingly, disclosure will contribute to the understanding of the subject of the request by a broad public audience. See 40 C.F.R. § 2.107(l)(2)(iii).

*The Disclosure is Likely to Contribute "Significantly" to Public Understanding of Government Operations or Activities.*

As set forth above, climate change, and controlling the pollution that is causing climate change, is a topic about which the public is deeply concerned. Information gathered from the requested documents will help the public to understand more about the sources of and potential options for controlling oil and gas sector methane pollution, and EPA's actions as they relate to regulation of those emissions. *See* 40 C.F.R. § 2.107(l)(2)(iv). While the public is very familiar with the contribution of carbon dioxide to climate change, it is less familiar with the role of methane in driving climate change, and, in particular, the contribution of methane emissions from the oil and gas sector to climate change. The public is also less familiar with the NODAs and their bases. Disclosure of the requested records will help the public to better understand the magnitude of existing oil and gas sector emissions, the options and costs of controlling those emissions, and the efficacy of significance of EPA's Oil and Natural Gas Sector; Emission Standards for New, Reconstructed, and Modified Sources. 81 Fed. Reg. 35,824 (June 3, 2016).

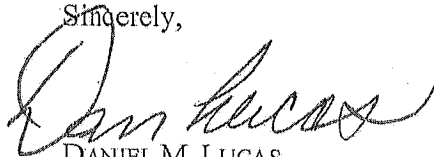
Please send a copy of the requested records to the attention of Daniel M. Lucas at the California Department of Justice, 300 S. Spring Street, Suite 1702, Los Angeles, California 90013. For ease of administration and to conserve resources, we will accept documents produced in a readily accessible electronic format. In the event that the State's request for a fee

November 21, 2017

Page 8

waiver is denied or if you have any questions about this request, please contact Daniel M. Lucas immediately by telephone at (213) 269-6345 or by email at Daniel.Lucas@doj.ca.gov. Thank you in advance for your attention to this matter.

Sincerely,



DANIEL M. LUCAS  
Deputy Attorney General

For XAVIER BECERRA  
Attorney General of the State of California

FOR THE STATE OF COLORADO

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November 21, 2017 .

Page 9

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## **ATTACHMENT 2**

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November 17, 2017

*Via Certified Mail, E-mail, and Regulations.gov*  
Assistant Administrator William Wehrum  
Office of Air and Radiation, Code 6101A  
Environmental Protection Agency  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

Attn: RIN 2060-AT59; RIN 2060-AT65

RE: **Request for Publication of 40 C.F.R. Part 60 Subpart OOOOa Annual Compliance Reports and for Extension of Comment Periods on EPA's Notices of Data Availability in Support of Proposed Rules "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements" and "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three Month Stay of Certain Requirements"**

Dear Assistant Administrator Wehrum:

The Attorneys General of California, Iowa, Maine, Maryland, the Commonwealth of Massachusetts, New Mexico, New York, Oregon, the Commonwealth of Pennsylvania, Rhode Island, Vermont, and the District of Columbia, the State of Colorado, and the Corporation Counsel of the City of Chicago ("States") respectfully request that the Environmental Protection Agency ("EPA") make public the data underlying EPA's recent notices of data availability in support of the proposed rules titled "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements" and "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three Month Stay of Certain Requirements" (collectively, the "NODAs").<sup>1</sup> Specifically, we request that EPA make public the annual reports submitted to EPA pursuant to 40 C.F.R. Part 60, Subpart OOOOa, and any related records that have been created by EPA. In addition, we request that EPA extend the comment deadline for the NODAs to ninety days after the reports are made available to allow adequate time for review and comment.

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<sup>1</sup> 82 Fed. Reg. 51,788 (Nov. 8, 2017); 82 Fed. Reg. 51,794 (Nov. 8, 2017).

On June 16, 2017, EPA proposed two rules that would collectively stay, for a period of two years and three months, the compliance requirements contained in the final rule titled "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources," published in the Federal Register on June 3, 2016 (the "2016 Rule").<sup>2</sup> Our States submitted a comment letter strongly opposing EPA's proposed rules. Last week, EPA issued the NODAs discussing "the technological, resource, and economic challenges with implementing" certain compliance requirements in the 2016 Rule.<sup>3</sup> The NODAs reference feedback from stakeholders contending that affected facilities are unable to implement certain requirements in the 2016 Rule and therefore a stay or "extended phase-in" of compliance requirements is necessary. However, EPA's NODAs, despite their name, are devoid of data, and instead merely cite a few unsubstantiated comment letters in support of the NODAs' bald assertion of implementation challenges. EPA's failure to make data available is glaring given that the 2016 Rule, which is in effect, required affected facilities to submit to EPA annual reports documenting compliance with its requirements by October 31, 2017. Thus, EPA should currently be in possession of information and data that is directly relevant to the NODAs and the proposed rules. The public must have access to that information in order to adequately evaluate and comment on the NODAs.

We therefore request that EPA make public the annual reports submitted to the agency pursuant to 40 C.F.R. Part 60, Subpart OOOOa, and extend the comment deadline for the NODAs to ninety days after the reports are made available. An extension of the comment period is warranted given EPA's failure to provide the underlying data for the NODAs, thereby depriving the public and our States of the ability to effectively comment. An extension of ninety days is further warranted given EPA's discussion of new legal theories and technical issues in the NODAs, including, but not limited to, an updated economic analysis that both newly incorporates forgone climate benefits<sup>4</sup> and applies EPA's new "interim" domestic social cost of methane.

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<sup>2</sup> *Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three Month Stay of Certain Requirements*, 82 Fed. Reg. 27,641 (June 16, 2017); *Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements*, 82 Fed. Reg. 27,645 (June 16, 2017).

<sup>3</sup> 82 Fed. Reg. 51,788 (Nov. 8, 2017).

<sup>4</sup> "Originally, EPA did not present estimates of the forgone climate benefits expected from the proposed two-year stay because quantitative estimates that were consistent with E.O. 13783 were not available at that time." Memorandum, "Estimated Cost Savings and Forgone Benefits Associated with the Proposed Rule, 'Oil and Natural Gas: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements'" (October 17, 2017), p. 7.

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BRIAN CALDWELL  
Assistant Attorney General  
Public Integrity Unit  
Office of the Attorney General  
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# Proposed Rules

Federal Register

Vol. 79, No. 44

Thursday, March 6, 2014

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Parts 60, 70, 71 and 98

[EPA-HQ-OAR-2013-0495; FRL-9907-42-OAR]

RIN 2060-AQ91

### Standards of Performance for Greenhouse Gas Emissions From New Stationary Sources: Electric Utility Generating Units

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice of extension of public comment period.

**SUMMARY:** The EPA is announcing that the period for providing public comments on the January 8, 2014, proposed "Standards of Performance for Greenhouse Gas Emissions From New Stationary Sources: Electric Utility Generating Units" and on the February 26, 2014, notice of data availability soliciting comment on the provisions in the Energy Policy Act of 2005, is being extended by 60 days.

**DATES:** *Comments.* The public comment period for the proposed rule published January 8, 2014 (79 FR 1352) and the notice of data availability published on February 26, 2014 (79 FR 10750), is being extended by 60 days to May 9, 2014, in order to provide the public additional time to submit comments and supporting information.

**ADDRESSES:** *Comments.* Written comments on the proposed rule may be submitted to the EPA electronically, by mail, by facsimile or through hand delivery/courier. Please refer to the proposal (79 FR 1352) for the addresses and detailed instructions.

*Docket.* Publicly available documents relevant to this action are available for public inspection either electronically at <http://www.regulations.gov> or in hard copy at the EPA Docket Center, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding

legal holidays. A reasonable fee may be charged for copying. The EPA has established the official public docket No. EPA-HQ-OAR-2013-0495.

*Worldwide Web.* The EPA Web site containing information for this rulemaking is: <http://www2.epa.gov/carbon-pollution-standards>.

**FOR FURTHER INFORMATION CONTACT:** Dr. Nick Hutson, Energy Strategies Group, Sector Policies and Programs Division (D243-01), U.S. EPA, Research Triangle Park, NC 27711; telephone number (919) 541-2968, facsimile number (919) 541-5450; email address: [hutson.nick@epa.gov](mailto:hutson.nick@epa.gov) or Mr. Christian Fellner, Energy Strategies Group, Sector Policies and Programs Division (D243-01), U.S. EPA, Research Triangle Park, NC 27711; telephone number (919) 541-4003, facsimile number (919) 541-5450; email address: [fellner.christian@epa.gov](mailto:fellner.christian@epa.gov).

### SUPPLEMENTARY INFORMATION:

#### Comment Period

The EPA is extending the public comment period for an additional 60 days. The public comment period will end on May 9, 2014, rather than March 10, 2014. This will ensure that the public has sufficient time to review and comment on all of the information available, including the proposed rule, the notice of data availability and other materials in the docket.

#### List of Subjects

##### 40 CFR Part 60

Environmental protection, Administrative practice and procedure, Air pollution control, Intergovernmental relations, Reporting and recordkeeping requirements.

##### 40 CFR Part 70

Environmental protection, Administrative practice and procedure, Air pollution control, Intergovernmental relations, Reporting and recordkeeping requirements.

##### 40 CFR Part 71

Environmental Protection, Administrative practice and procedure, Air pollution control, Reporting and recordkeeping requirements.

##### 40 CFR Part 98

Environmental protection, Greenhouse gases and monitoring, Reporting and recordkeeping requirements.

Dated: February 25, 2014.

**Mary Henigin,**

*Acting Director, Office of Air Quality Planning and Standards.*

[FR Doc. 2014-04633 Filed 3-5-14; 8:45 am]

BILLING CODE 6560-50-P

## GENERAL SERVICES ADMINISTRATION

### 41 CFR Part 102-36

[FMR Case 2012-102-4; Docket No. 2012-0014; Sequence No. 1]

RIN 3090-AJ30

### Federal Management Regulation; Disposal and Reporting of Federal Electronic Assets (FEA)

**AGENCY:** Office of Government-wide Policy, General Services Administration (GSA).

**ACTION:** Proposed rule with request for comments.

**SUMMARY:** GSA is proposing to amend the Federal Management Regulation (FMR) by changing its personal property policy regarding the disposal and reporting of Federal Electronic Assets (FEA). The proposed changes are to provide policy for the safe handling and disposal of FEA, and make minor clarifying edits to existing policies.

**DATES:** Interested parties should submit comments in writing on or before May 5, 2014 to be considered in the formulation of a final rule.

**ADDRESSES:** Submit comments identified by FMR Case 2012-102-4 by any of the following methods:

- Regulations.gov: <http://www.regulations.gov>. Submit comments via the Federal eRulemaking portal by inputting "FMR Case 2012-102-4" under the heading "Enter Keyword or ID" and selecting "Search." Select the link "Submit a Comment" that corresponds with "FMR Case 2012-102-4." Follow the instructions provided at the "Submit a Comment" screen. Please include your name, company name (if any), and "FMR Case 2012-102-4" on your attached document.

- Fax: 202-501-4067
- Mail: General Services Administration, Regulatory Secretariat (MVCB), ATTN: Hada Flowers, 1800 F Street NW., Washington, DC 20405.



State of West Virginia  
Office of the Attorney General

Patrick Morrissey  
Attorney General

(304) 558-2021  
Fax (304) 558-0140

February 21, 2014

**Via Certified Mail, Email & Regulations.gov (EPA-HQ-2013-0495)**

The Honorable Gina McCarthy  
Administrator  
U.S. Environmental Protection Agency  
William Jefferson Clinton Building  
1200 Pennsylvania Ave., N.W.  
Washington, DC 20460  
McCarthy.Gina@EPA.gov

**Re: Request for withdrawal and re-proposal (EPA-HQ-2013-0495)**

Dear Administrator McCarthy:

This letter concerns the Environmental Protection Agency's ("EPA") failure to provide meaningful opportunity for public comment on additional documents only recently docketed to the proposed Standards of Performance for Greenhouse Gas Emissions From Stationary Sources: Electric Utility Generating Units ("NSPS"),<sup>1</sup> which was published in the *Federal Register* on January 8, 2014.<sup>2</sup> In particular, the Notice of Data Availability ("NODA") and accompanying Technical Support Document ("TSD") were only docketed on February 6, *and neither has yet been published in the Federal Register*.<sup>3</sup> Despite this late docketing, EPA has not extended the period for public comments on the underlying proposal, which remain due by March 10, 2014. The public has barely a month to review and comment on one of the most wide-ranging and unprecedented rules ever to have been issued by a federal agency.

Section 307(d) of the Clean Air Act ("CAA") requires that upon publication, a proposal like the NSPS include a "statement of basis and purpose . . . [which] shall include a summary . . . [of the] . . . factual data on which the proposed rule is based, . . . the methodology used in obtaining the data and in analyzing the data, . . . [and the] major legal interpretations and policy

<sup>1</sup> 79 Fed. Reg. 1430 (Jan. 8, 2014).

<sup>2</sup> The Commonwealth of Kentucky has also made the same request in a previous letter to EPA.

<sup>3</sup> "Technical Support Document: Effect of EPA Act 05 on BSER for New Fossil Fuel-fired Boilers and IGCCs, January 8, 2014", Docket No. EPA-HQ-2013-0495-1873, Feb. 6, 2014. The TSD is time-stamped January 8, 2014, but was not placed in the docket until February 6. Likewise, a pre-publication version of the NODA was not posted to the docket until February 6.

considerations underlying the proposed rule.” 42 U.S.C. 7607(d). Critically, section 307(d) also requires that “[a]ll data, information, and documents . . . on which the proposed rule relies shall be included in the docket on the date of publication of the proposed rule.” This was not done here.

Yet, EPA has only now released the NODA and TSD’s full legal justification for the proposed NSPS, *more than halfway through the proposal’s comment period ending on March 10, 2014*. These documents contain *new* technical information and legal interpretations addressing how EPA believes facilities can be considered under the proposed NSPS despite statutory prohibitions in the Energy Policy Act of 2005 to the contrary. The NODA and TSD make clear that the new information includes “major legal interpretations and policy considerations underlying the proposed rule” and addresses new “data, information and documents.” Deprived of these documents, the notice of proposed rulemaking published on January 8 “fail[ed] to provide an accurate picture of the reasoning that has led [EPA] to the proposed rule.” *Conn. Light & Power Co. v. Nuclear Regulatory Comm’n*, 673 F.2d 525, 530–31 (D.C. Cir. 1982). This is particularly true where, as here, the proposal overhauls the electric generating sector on an unprecedented scale. *See Maryland v. Env’tl. Prot. Agency*, 530 F.2d 213, 222 (4th Cir. 1975) (vacating rule due to EPA’s failure to comply with notice and comment requirements, emphasizing the “drastic impact” that compliance with rule would have), *vacated on other grounds*, 431 U.S. 99 (1977).

The simultaneous comment deadline for the NODA and TSD provides insufficient time for stakeholders to meaningfully analyze and formulate comments not only on the proposed NSPS, but now also the NODA and TSD individually and as they relate to the proposal. In short, EPA is leaving the public with *less than a month* to not only complete comments on the proposal, but also fully analyze and provide comments on the 27 additional issues raised by the TSD. Forcing States and stakeholders to draft comments on the proposed NSPS, as well as the NODA and TSD by March 10, 2014, is unreasonable and will burden states. *See Conn. Light & Power Co.*, 673 F.2d at 530–31 (“An agency commits serious procedural error when it fails to reveal portions of the technical basis for a proposed rule in time to allow for meaningful commentary.”).

Moreover, this failure to comply with section 307(d) places any final rule in serious legal jeopardy. *See Small Refiner Lead Phase-Down Task Force v. U.S.E.P.A.*, 705 F.2d 506, 540 (D.C. Cir. 1983) (“late docking [is] highly improper” and “prohibit[ed]. . . in no uncertain terms”); *Sierra Club v. Costle*, 657 F.2d 298, 396–400 (D.C. Cir. 1981) (“If . . . documents . . . upon which EPA intended to rely had been entered on the docket too late for any meaningful public comment . . . , then both the structure and spirit of section 307 would have been violated.”); *see also Conn. Light & Power*, 673 F.2d at 530–31 (“If the notice of proposed rule-making fails to provide an accurate picture of the reasoning that has led the agency to the proposed rule, interested parties will not be able to comment meaningfully upon the agency’s proposals.”); *Kennecott Corp. v. EPA*, 684 F.2d 1007, 1019 (D.C. Cir. 1982) (EPA improperly placed economic forecast data in the record only one week before issuing its final regulations); *Doe v. Rumsfeld*, 341 F. Supp. 2d 1 (D.D.C. 2004) (vacating rule because agency “deprived the

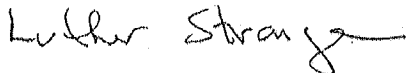
public of a meaningful opportunity to submit comments and participate in the administrative process mandated by law").

To comply with section 307(d), EPA must withdraw and re-propose the proposed NSPS so that major legal interpretations and policy considerations in the NODA and TSD are "included in the docket on the date of publication of the proposed rule." 42 U.S.C. § 7607(d). Therefore, the undersigned States request EPA withdraw and re-propose the NSPS to comply with applicable law, and provide interested parties 90 days to review and comment on the re-proposal. If EPA declines to do so, we request that the comment deadline for the proposed NSPS be extended to 90 days after publication of the NODA in the *Federal Register*, to allow for adequate review and comment on the proposed NSPS along with and in light of the new supporting data and major legal interpretations in the NODA and TSD.

Sincerely,



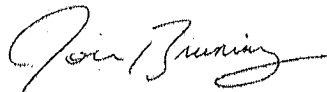
Patrick Morrisey  
West Virginia Attorney General



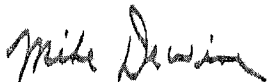
Luther Strange  
Alabama Attorney General



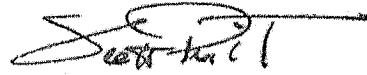
Derek Schmidt  
Kansas Attorney General



Jon Bruning  
Nebraska Attorney General



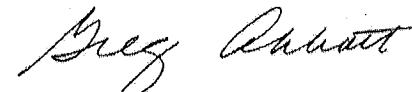
Mike DeWine  
Ohio Attorney General



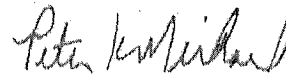
E. Scott Pruitt  
Oklahoma Attorney General



Alan Wilson  
South Carolina Attorney General



Greg Abbott  
Texas Attorney General



Peter Michael  
Wyoming Attorney General



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

SEP 26 2018

OFFICE OF  
ENFORCEMENT AND  
COMPLIANCE ASSURANCE

Daniel M. Lucas, Esq.  
Deputy Attorney General  
California Department of Justice, Office of the Attorney General  
300 South Spring Street, Suite 1702  
Los Angeles, California 90013

RE: Freedom of Information Act Request EPA-HQ-2018-001886, Final Response

Dear Mr. Lucas:

This letter concerns your above referenced Freedom of Information Act (FOIA) request, submitted to the Environmental Protection Agency (EPA or Agency) on November 21, 2017. The three-part request sought (1) reports submitted to EPA pursuant to 40 C.F.R. Part 60 Subpart OOOOa (OOOOa) reporting requirements, (2) copies of correspondence between EPA and external parties containing reference to OOOOa and a series of terms, and (3) copies of internal correspondence containing reference to OOOOa and a series of terms. On December 8, 2017, you agreed to limit the scope of parts 2 and 3 to correspondence to or from the Office of Enforcement and Compliance Assurance, the Office of the Administrator, or the Office of Air and Radiation, and you clarified the timeframe for the request as August 2, 2016 to November 21, 2017.

**Fees and Interim Productions**

On November 29, 2017, the EPA granted your request for a fee waiver. There are no fees associated with this request. The EPA uploaded interim productions of records into FOIAonline on December 21, 2017; March 5, 2018; March 9, 2018; March 15, 2018; April 10, 2018; May 4, 2018; June 26, 2018; and July 11, 2018. Today, EPA is making a final production of records and closing your request. As described below, some records are withheld in full or in part. Your request is therefore partially granted and partially denied.

**Today's Production**

Today's production includes records responsive to parts 2 and 3 of your request. There is a total of 27,024 pages. They are compiled in 5 PDFs titled "September Prod pt. [1-5]." You can access them at the link below:

- <https://foiaonline.gov/foiaonline/action/public/submissionDetails?trackingNumber=EPA-HQ-2018-001886&type=request>



### **FOIA Exemptions**

In response to part 1 of your request, EPA produced 5,747 pages and 32 excel spreadsheets with some redactions. EPA initially withheld approximately 164 records in full from the response to part 1 under Exemption 4 of the FOIA as the submitter of the records claimed the records as Proprietary Business Information (PBI). The Agency is undergoing a separate PBI determination in accordance with 40 C.F.R. § 2.204 and § 2.205 to assess whether the information claimed as PBI is properly withheld under Exemption 4. Once the assessment is completed the Office of General Counsel (OGC) will issue a final determination with respect to these records. The tracking number for the PBI case is EPA-2018-009101, and the point of contact for PBI issues is Joan Kaminer, Attorney-Adviser, OGC, who can be reached at 202-564-0334 or [kaminer.joan@epa.gov](mailto:kaminer.joan@epa.gov).

In the responses to parts 2 and 3 of your request, EPA produced 1,208 records with some redactions. EPA withheld 929 records in full from the responses to parts 2 and 3.

Where information was redacted, the basis for the withholding is printed above the withheld material. The attached index contains a description of the fully withheld records. Information was redacted and records were withheld in full pursuant to FOIA exemptions 4, 5, 6, and 9. Exemption 4 of the FOIA protects trade secrets and commercial or financial information obtained from a person that is privileged or confidential. 5 U.S.C. § 552(b)(4). Exemption 5 of the FOIA exempts from disclosure information that would not be available to another party in litigation. § 552(b)(5). This includes information subject to the deliberative process privilege (internal, pre-decisional, and deliberative information which would harm Agency decision making if released), attorney-client privilege (confidential communications between an attorney and client concerning legal advice), and attorney work product privilege (documents prepared by or at the direction of an attorney in anticipation of litigation). Exemption 6 of the FOIA protects personnel and medical files and similar files the disclosure of which would constitute a clearly unwarranted invasion of personal privacy. § 552(b)(6). Exemption 9 of the FOIA exempts from disclosure geological and geophysical information and data, including maps, concerning wells. § 552(b)(9).

### **Appeal Information**

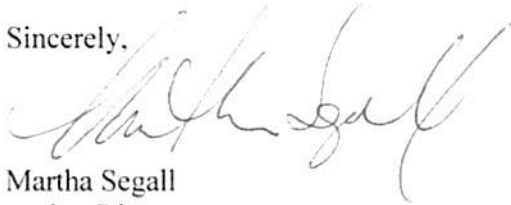
This letter concludes our response to your request. As noted above, OGC will review the information initially withheld under Exemption 4 and issue a final PBI determination. Therefore, you do not need to appeal the withholding of information under Exemption 4. Once OGC issues a final determination, EPA will notify you whether the information qualifies for confidential treatment or may be released.

To the extent you would like to appeal any other issue, including any non-Exemption 4 withholdings, you may appeal this response by email at [hq.foia@epa.gov](mailto:hq.foia@epa.gov), or by mail to the EPA's National FOIA Office, U.S. EPA, 1200 Pennsylvania Avenue, N.W. (2310A), Washington, DC 20460 or through FOIAonline if you are an account holder. If you are submitting your appeal by hand delivery, courier service, or overnight delivery, you must address your correspondence to 1200 Pennsylvania Avenue, N.W., Room 5315, Washington, DC 20460. Your appeal must be in writing, and it must be received no later than 90 calendar days from the date of this letter. The Agency will not consider appeals received after the 90-calendar-day limit. Appeals received after 5:00 p.m. EST will be considered received the next business day. The appeal letter should include the FOIA tracking number listed above. For quickest possible handling, the subject line of your email, the appeal letter, and its envelope, if applicable, should

be marked "Freedom of Information Act Appeal." Additionally, you may seek dispute resolution services from EPA's FOIA Public Liaison at [hq.foia@epa.gov](mailto:hq.foia@epa.gov) or (202) 566-1667, or from the Office of Government Information Services (OGIS). You may contact OGIS in any of the following ways: by mail, Office of Government Information Services, National Archives and Records Administration, Room 2510, 8610 Adelphi Road, College Park, MD 20740-6001; email, [ogis@nara.gov](mailto:ogis@nara.gov); telephone, (202) 741-5770 or (877) 684-6448; or fax, (202) 741-5769.

If you have any questions concerning this response, please contact Peter Bermes of the Office of General Counsel at (312) 886-6631 or [bermes.peter@epa.gov](mailto:bermes.peter@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Martha Segall", written in a cursive style.

Martha Segall  
Acting Director  
Monitoring, Assistance, and Media Programs Division  
Office of Compliance



***Expert Report***

The Use of the Social Cost of Carbon in the Federal Proposal “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks. [83 Fed. Reg. 42,986 (Aug. 24, 2018)]”

Author: Maximilian Auffhammer, George Pardee Jr. Family Professor in International Sustainable Development and Associate Dean of Social Sciences, University of California Berkeley

Date of Report: October 24, 2018

## **Maximilian Auffhammer – Biographical Statement**

I am the George Pardee Jr. Family Professor of International Sustainable Development at the University of California Berkeley, where I have been a professor in the Department of Agricultural & Resource Economics and the College of Letters and Sciences since 2003. I currently serve as the Associate Dean of Interdisciplinary Social Sciences in the College of Letters and Sciences, the Regional Associate Dean in Social Sciences, Arts and Humanities and the Undergraduate Division, as well as the Director of the Global Studies Graduate and Undergraduate Program. I am a research associate at the Energy Institute at Haas, a Fellow of the CESifo network and a research associate at the National Bureau of Economic Research as well as a Humboldt Fellow. I teach Ph.D. level econometrics, microeconomic theory to MBA students at the Haas School of Business and microeconomic theory, macroeconomic theory, economics of climate change and research methods to graduate and undergraduate students across the university.

My research areas include environmental and energy economics, climate economics, regulation, and forecasting. My geographic areas of expertise are the US with a focus on California, China, India and Europe. I have won many research awards, including grants from the National Science Foundation, the Environmental Protection Agency, and private foundations. I have conducted research on the economics of greenhouse gas (GHG) emissions, climate change impacts, energy consumption and production, and have analyzed the economic impacts of various regulatory programs carried out under the Clean Air Act.

I was appointed by the American Statistical Association to serve as a member of the Statistical Advisory Board to the Energy Information Administration in the Department of Energy. I chaired the advisory board for two years. I was also appointed to serve on a National Academies of Sciences Panel to assess the social cost of carbon (SCC). I served as a lead author on the fifth assessment report of the Intergovernmental Panel on Climate Change (IPCC). My research has won the Cozzarelli Prize for best paper in the prestigious Proceedings of the National Academies of Sciences. I have published extensively in the areas of environmental, energy and climate economics, and the economics of regulation. I advise governments on the design and evaluation of environmental and energy policies. For example, I advised the State of California in the renewal of its Carbon Market. I have advised the California Energy Commission, California Air Resources Board, US Environmental Protection Agency and the Central Intelligence Agency. I am a member of the American Economic Association and the Association of Environmental and Resource Economists. From September 2015 until August 2016 I served for the duration of the independent panel convened by the National Academies of Sciences titled “Assessing Approaches to Updating the Social Cost of Carbon”. The National Academies of Sciences provide nonpartisan, objective guidance for decision makers on pressing issues. They bring together experts from across disciplines to look at the evidence. The study committees “survey the landscape of relevant research, hold public meetings to gather information, and deliberate to reach consensus, which results in a shared understanding of what the evidence reveals and the best path forward”. The SCC panel issued an interim and final report recommending specific short term and long term updates to the Social Cost of Carbon (NAS, 2016).

The opinions and conclusions in this report are mine. I have attached a copy of my curriculum vitae as an appendix to this report.

## Executive Summary

In my comments below I identify seven issues with the Social Cost of Carbon (SCC) used in the proposed rule titled “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks. [83 Fed. Reg. 42,986 (Aug. 24, 2018)]”.

First, the proposed rule employs a domestic social cost of carbon when the economically correct number is global, since the emissions of greenhouse gases and consequential impacts on the US and its citizens do not stop at the US border.

Second, the analysis is inconsistent with Circular A-4, which asks that impacts beyond the US borders should be reported separately. EPA (2018) provided the necessary values of the global Social Cost of Carbon, which enabled NHTSA to report the full damages of carbon emissions, but NHTSA failed to use these in its analysis and did not consider the global social cost of carbon. .

Third, the simplistic way in which the domestic social cost of carbon was calculated is a crude approximation and leaves out important spillover effects on the United States via capital owned by US firms abroad, national security implications and important effects on trade flows and global commodity markets.

Fourth, by using a domestic SCC, the analysis places zero weight on the welfare of the men and women serving in the US armed forces abroad as well as US citizens living abroad.

Fifth, the analysis places an extremely low weight on the well-being of future generations by using discount rates of 3% and 7%, which is not consistent with best available science suggesting a rate close to 2%.

Sixth, NHTSA did not implement any of the updates suggested by the National Academies of Sciences, even though many of the suggestions have already been implemented in the peer reviewed literature and are hence readily available. The most glaring omission is the lack of updates to the antiquated damage functions, which are mathematical functions translating changes in climate into economic damages, in the Integrated Assessments used to calculate the SCC.

Finally, recent peer reviewed science published in a top journal suggests a domestic social cost of carbon of \$48, which is much higher than the \$1-7 used in the current analysis.

I hence conclude that the SCC

- a) does not represent best available science for multiple reasons
- b) was modeled in a way that intentionally pushed the number toward zero at the expense of scientific integrity
- c) is not consistent with circular A-4 by not evaluating the consequences of the proposed rule for US citizens living and serving abroad.

On August 24, 2018 the National Highway Safety Administration proposed a rule titled the “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks. [83 Fed. Reg. 42,986 (Aug. 24, 2018)]”. I have reviewed the proposed rule and the Preliminary Regulatory Impact Analysis (PRIA) as posted in the Federal Register. I have also reviewed the “12866 Review Materials for The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks NPRM; RIN 2060-AU09” as posted on regulations.gov. The proposed rule makes sweeping changes to the required fuel efficiency of the model years 2021-2026. The proposed rule is argued to result in fewer miles driven (as less efficient vehicles have a higher cost per mile), increases in the emissions of greenhouse gases and local pollutants and significantly lower fatalities. While I take issue with large portions of the assumptions underlying the analysis to evaluate the proposed rule as well as the analysis itself, I will focus my comments on the evaluation of the damages from the emissions of greenhouse gases. My comments below are my own.

### **The Social Cost of Carbon – Summary**

Carbon Dioxide is one long lived greenhouse gas emitted by natural and anthropogenic processes. Once emitted it affects the global climate over very long time periods (hundreds of years). The consequences of higher greenhouse gas emissions include changed temperature, precipitation and cloud patterns, sea level rise as well as the increased intensity and possibly frequency of extreme events. Further, higher greenhouse gas concentrations result in an increased probability of irreversible catastrophic events (IPCC, 2013). A changed climate affects both market and non-market sectors of the economy. On the market side it affects agricultural production (Schlenker and Roberts, 2009), energy demand (Auffhammer, Baylis and Hausman, 2017), productivity of labor (Graff-Zivin and Neidell, 2013), and the overall value of goods and services produced in economies across the world (Burke, Hsiang and Miguel, 2015) to name but a few. The National Climate Assessment provides a more comprehensive review of impacts for the United States (Melillo et al, 2014). On the non market side, a changed climate affects the distribution of species (Parmesan and Yohe, 2003), mortality (Deschenes and Greenstone, 2011), violent and non violent crime (Hsiang, Burke and Miguel, 2013), cognition (Graff-Zivin, Hsiang and Neidell, 2018), and the incidence and intensity of violent conflict worldwide (Hsiang, Burke and Miguel, 2013). There have been five large international efforts to synthesize the impacts globally (IPCC, 2015), as well as for the US (National Climate Assessment) and at the state level (California Climate Assessments).

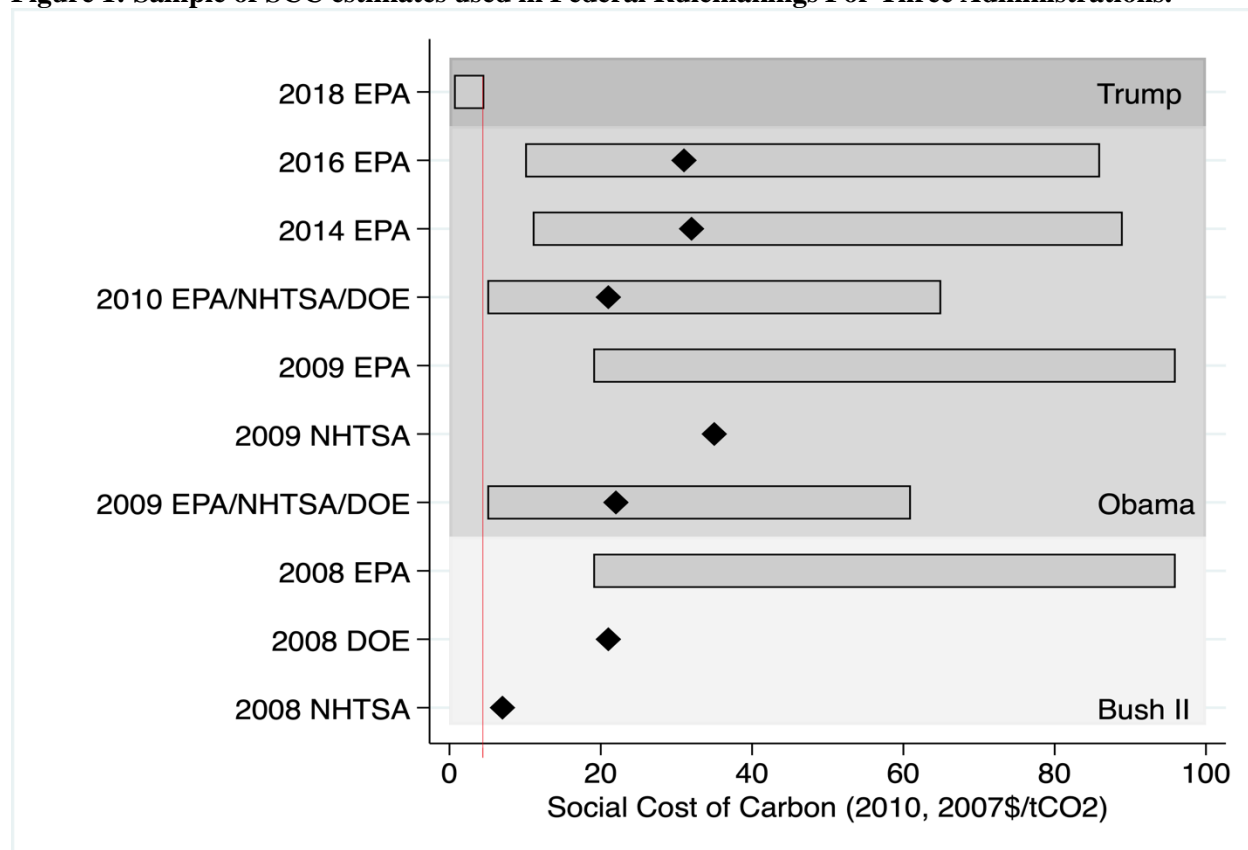
The Social Cost of Carbon is an estimate of the present value of the stream of global damages from one additional ton of CO<sub>2</sub> emitted at a point in time. In order to calculate this number the literature has employed so called Integrated Assessment Models (Greenstone et al. , 2013), which integrate simple models of the economic and climate system. These models start with assumptions about the evolution of global, and in some cases regional, income and population over the next 300 years. These are sometimes referred to as socioeconomic scenarios. The models then translate economic activity into emissions of greenhouse gases, most notably CO<sub>2</sub>, but in some cases other GHG such as methane. These 300 year time paths of emissions are then fed into a model of the global climate system, which translates emissions into surface temperature, precipitation and sea level rise. These outputs are then fed to a set of so called damage functions, which map the emissions path into economic damages. For example, a hotter state of Georgia will likely use more electricity to cool the indoor environment due to climate change. This is considered an economic damage. In order to calculate the effect higher emissions have on outcomes of interest across many sectors of the economy, the Integrated Assessment Model is run with and without one additional ton of CO<sub>2</sub>. The time path of the difference in damages relative to the baseline represents the damages from that one ton for each year over the next 300 years. The stream of damages is then discounted into a present value. This dollar amount is called the Social Cost of Carbon and is measured in US\$.

Some Integrated Assessment Models have no spatial resolution and are global (e.g. DICE by 2018 Nobel Laureate William Nordhaus) and others break out the world into regions (e.g. PAGE by Chris Hope;

FUND by David Anthoff and Richard Tol). In the case of models with regional resolution, damages are aggregated across regions to calculate the *global* Social Cost of Carbon. This number represents the damages caused globally over time by one additional ton of CO<sub>2</sub> emissions. As US EPA (2016) shows, this cost is rising over time, as emissions later in time are generally understood to be more damaging due to the elevated stock of greenhouse gases in the atmosphere, and because GDP grows over time and some damage categories are modeled as proportional to GDP (US EPA, 2016).

The Federal Government has employed the Social Cost of Carbon in rulemakings since 2008. Figure 1 below, which is forthcoming in Auffhammer (2018), shows a set of values used by the three last administrations in federal rulemaking. For comparability, the graphic shows values for one ton of CO<sub>2</sub> emitted in the year 2010 valued in 2007 US\$.

**Figure 1: Sample of SCC estimates used in Federal Rulemakings For Three Administrations.**



*Note: Estimates for the SCC are for emissions of a ton of CO<sub>2</sub> in 2010 in 2007 dollars. NHTSA—National Highway and Traffic Safety Administration; IWG—Interagency Working Group; EPA—Environmental Protection Agency; DOE—Department of Energy. The black diamond indicates the “central estimate”, if one was identified. The grey bars indicate selected upper and lower bounds used in regulatory analyses. The red line indicates the high scenario for the NHTSA SCC, which is lower than any of the other numbers used for central cases. Sources: Rose (2012); Rose et al. (2014); US EPA (2016); US EPA (2018).*

In the early years of the Obama Administration, the Interagency working group comprised of members from the Council of Economic Advisers, Council on Environmental Quality, Department of Agriculture, Department of Commerce, Department of Energy, Department of the Interior, Department of Transportation, Department of the Treasury, Environmental Protection Agency, National Economic Council, Office of Management and Budget, and the Office of Science and Technology Policy embarked on an effort to calculate an official Social Cost of Carbon. The approach adopted, which is described in

detail in Greenstone, Kopits and Wolverton (2013), was to feed three integrated assessment models with a set of harmonized assumptions regarding the evolution of the economy and population, account for parametric and scenario uncertainty and provide a distribution of the Social Cost of Carbon across models. The adopted discount rates were 2.5, 3 and 5%. The number, which has since been employed in the majority of economic studies on the external costs of climate change was \$42 per ton emitted in 2020 as measured in 2007 dollars (note that the graph above shows the values for 2010 emissions – not 2020). This is the global number using a 3% discount rate. The officially published figures did not provide a domestic number. There were several updates to the social cost of carbon and the final available estimates prior to the National Academies of Sciences Report are given in the table below.

**Table 1: Social Cost of Carbon Estimates by Interagency Working Group (US EPA, 2016).**

	<b>Discount Rate and Statistic</b>			
<b>Year</b>	<b>5% Average</b>	<b>3% Average</b>	<b>2.5% Average</b>	<b>High Impact (95th pct at 3%)</b>
<b>2015</b>	\$11	<b>\$36</b>	\$56	\$105
<b>2020</b>	\$12	<b>\$42</b>	\$62	\$123
<b>2025</b>	\$14	<b>\$46</b>	\$68	\$138
<b>2030</b>	\$16	<b>\$50</b>	\$73	\$152
<b>2035</b>	\$18	<b>\$55</b>	\$78	\$168
<b>2040</b>	\$21	<b>\$60</b>	\$84	\$183
<b>2045</b>	\$23	<b>\$64</b>	\$89	\$197
<b>2050</b>	\$26	<b>\$69</b>	\$95	\$212

*Source: US EPA (2016)*

Table 1 displays the global SCC estimates using three different discount rates for emissions between 2015 out until the year 2050. Two things stand out from this table First, columns 2-4 display the average SCC across simulations using three different discount rates. A higher discount rate (5%) puts a lower value on future damages and hence results in a lower SCC. A lower discount rate places a relatively higher value on future damages and hence results in a higher SCC. For a ton emitted in 2050, the difference in the SCC

using the 5% discount rate is less than one third of the value if one used the 3% discount rate. I discuss this further below.

Second, one notices that for any chosen discount rate, the SCC is higher the later emissions are made. For example, one ton of CO<sub>2</sub> emitted in 2020 using the 3% discount rate results in a \$42 per ton SCC. A ton emitted in 2050, using the same discount rate, has an SCC of \$69. This increase is due to two reasons. First, as time goes on the stock of CO<sub>2</sub> in the atmosphere is higher, as CO<sub>2</sub> accumulates over time. Hence, each additional ton emitted at a later point in time arrives in an atmosphere with a higher stock of CO<sub>2</sub> in it adding additional forcing into a “more stressed” system leading to higher damages. Second, for some of the IAMs used, damages are a function of income (e.g. GDP). As the world grows richer over time, later emissions arrive in a wealthier world resulting in higher damages. An easy way to think about this is, for example, higher incomes result in more valuable infrastructure, which may be negatively affected by changes in climate.

While the Interagency Working Group effort represented the first harmonized multi-model effort, the Obama White House asked the National Academies of Sciences to convene a panel of experts to evaluate the approach taken by the IWG and the panel issued a number of recommendations for short and long term improvements to the modelling. The NAS (2017) document states:

“[...] the committee recommends near-term changes given the current state of the science. The recommended changes would be feasible to implement in the next 2-3 years and would improve the performance of each part of the analysis with respect to the primary criteria.

- The socioeconomic module should use statistical methods and expert judgment for projecting distributions of economic activity, population growth, and emissions into the future.

- The climate module should use a simple Earth system model that satisfies well-defined diagnostic tests to confirm that it properly captures the relationships between CO<sub>2</sub> emissions, atmospheric CO<sub>2</sub> concentrations, and global mean surface temperature change and sea level rise.

- The damages module should improve and update existing formulations of climate change damages, make calibrations transparent, present disaggregated results, and address correlation between different formulations. This update should draw on recent scientific literature relating to both empirical estimation and process based modeling of damages.

- The discounting module should incorporate the relationship between economic growth and discounting. The committee also recommends that the IWG provide guidance on how the SC-CO<sub>2</sub> estimates should be combined in regulatory impact analyses with other calculations.

In addition, the committee details longer-term research that could improve each module and incorporate interactions within and feedbacks across modules. These advances will require significant investments in both economic and climate modeling research, particularly research related to the assessment of climate damages and to socioeconomic and emission projections.”

Almost two years have passed since the issuing of these recommendations. During these two years the IWG has been disbanded by the Trump administration and no effort has been made by the federal government to address the recommendations. The capacity to incorporate the recommendation does still exist at the EPA and there is no good scientific reason not to proceed with updating the out of date science underlying current SCC estimates. In what follows, I provide a list of specific critiques of the modelling of the social cost of carbon as part of this proposed rule, which I conclude makes the analysis seriously flawed,

biased and inconsistent with best available science. It further fails to place equal value on US citizens, which is inconsistent with Circular A-4 as I explain below.

**Critique 1: The economically correct social cost of carbon is the global number, not a domestic number.**

Going back to Harry Sidgwick (1838-1900) and Arthur Pigou (1877-1959), the concept of external costs has been central to the economic theory of the environment and was central to work underlying this year's Nobel Prize in Economic Sciences to Bill Nordhaus – the architect of the most influential Integrated Assessment Model, which was one of the three IAMs used by the Interagency Working Group to calculate the social cost of carbon.

If private agents (consumers, firms) do not pay for the full opportunity cost of their actions they will, when there are negative externalities, produce an inefficiently large amount of the externality (e.g. GHGs). This means that there is a difference between the cost of the activity to the agent (e.g. firm) and the whole of society due to the agent's activity.

If, as in the case of greenhouse gases, the costs to society are higher than those to the agent, the government needs to step in to fix the market failure and move society to the socially efficient output level. This is taught in all economics 101 classrooms across the globe. This does not mean that all emissions should be abated, but certainly some. Pigou, in one of the most important papers in all of economics, pointed out that one way to correct the inefficiency from the externality market failure is to charge consumers the marginal external cost of their activity in the form of a tax. This is the underlying motivation for a carbon tax.

If the regulator is more broadly engaged in the design of rules and regulations and comparing the benefits and costs of said regulation, (s)he needs to incorporate the external costs in the evaluation of policies. The Social Cost of Carbon is such an estimate. In the case of greenhouse gases, damages of a ton of CO<sub>2</sub> emitted in the United States occur domestically *and* abroad. Damages from emissions in India cause damages in the United States, China, the US and elsewhere. Greenhouse gases are a global pollutant and in order to obtain the economically efficient outcome globally, each country – including the United States – needs to use the global social cost of carbon in estimating the benefits and costs of regulation. If each country used its domestic Social Cost of Carbon in order to evaluate the optimal amount of abatement, the world would fall drastically short of the efficient level of abatement required to move global society to the optimal level of greenhouse gas emissions. This would be inefficient for the United States as other countries would produce inefficiently high emissions [Tease out that NHTSA would be first domino].

Further, the proposed rule *incorrectly* refers to an “international” cost of carbon. But global and international are two different things. International refers to a collection of at least two countries. Global refers to all countries. The “international” cost of carbon is not a recognized concept and I have never seen it mentioned in my 20+ years of working on climate change and the economics of climate change.

The issue as to whether the global or domestic SCC captures the correct damages was pointed out by EPA in previous rulemakings. One of the earliest technical policy documents on the subject acknowledges that writing US regulation based on a domestic social cost of carbon results in an inefficient outcome, resulting in inefficiently large damages imposed on all countries – including the United States. For example, the technical support document underlying the 2008 “Regulating Greenhouse gas emissions under the Clean Air Act” document, which was written during the Bush administration states that

“because GHGs are a global pollutant, economists point out that, to achieve an efficient economic outcome (i.e., maximize global net benefits), countries would need to mitigate up to the point where their domestic marginal cost equals the global marginal benefit (Nordhaus, 2006). Net present value estimates of global marginal benefits internalize the global and intergenerational externalities of reducing a unit of emissions and can therefore help guide policies towards an efficient level of provision of the public good.”



It goes on to say that

“Individual countries may only consider the domestic marginal benefit of emissions reductions when making policy decisions. In this case, a country would aim to reduce its domestic GHG emissions up to the point where its domestic social benefit for the next increment of emissions reduction was equal to its domestic cost of that reduction. The mitigation undertaken would generate both domestic benefits and positive externalities for other countries. Thus, the emissions reductions associated with this domestic policy would be lower than if all the international externalities had been internalized. This means there would continue to be a (global) market failure because the remaining domestic emissions are produced without accounting for their full cost to society, i.e., the international (inter-temporal) externalities.”

Hence which SCC a country uses has implications for which value other countries will use. This point is made in Kotchen (2016), who points out that “[...] all countries have a strategic SCC greater than their domestic SCC” suggesting that the relevant value of the SCC is higher than the domestic number.

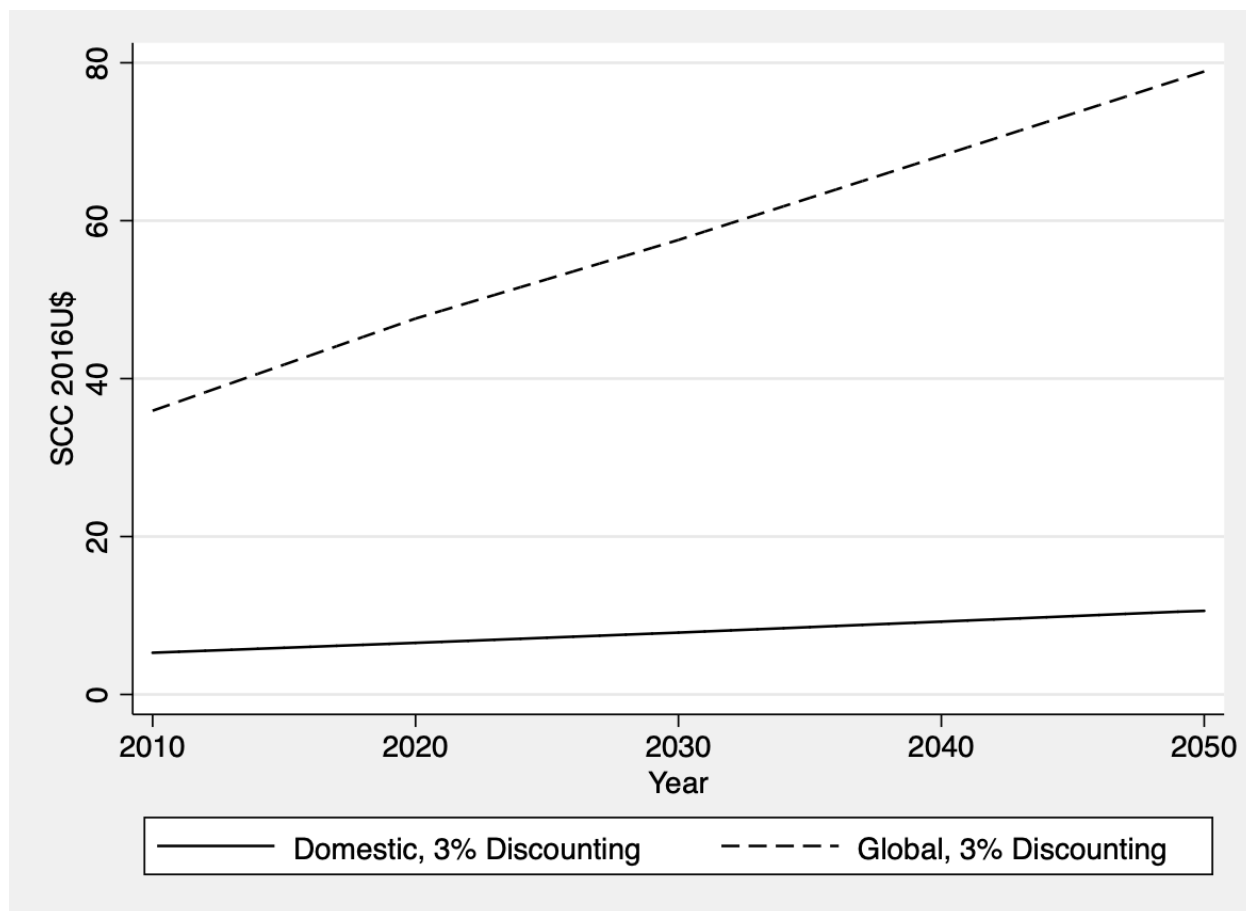
Using the domestic number is simply wrong from an economic perspective and does not represent best available science. In addition to the fact that this is not good economics, I argue below that one cannot credibly calculate this number with the current models.

**Critique 2: The agencies did not conduct best available science by failing to provide a scenario using the global SCC, even though the necessary numbers were provided to them by EPA.**

Analyses conducted under previous administrations, as indicated in figure 1, have used the global number for the SCC and in some cases provided estimates for a domestic SCC and calculated scenarios which included runs with a domestic SCC estimate. The current modelling abandoned the global cost of carbon in favor of a domestic social cost of carbon and failed to even conduct a sensitivity test or scenario, which includes the global number. This was not done because the information was not available to NHTSA. The docket of documents posted on regulations.gov includes an email between OMB and EPA relating to the inclusion of other greenhouse gases in the analysis (Social cost of carbon email exchange between EPA and OMB, July 16, 2018; Social cost of carbon spreadsheet provided by EPA to OMB, July, 16, 2018).

In that email EPA provided modelers with the Global and Domestic numbers, as indicated by documents and spreadsheets published on the dockets. There is hence no reason why this could not have been included as a scenario in the analysis. This is equivalent to adding one line of code to a computer program. Not including the global estimates as the central case, or even a robustness case is a violation of what is considered “best available science” and inconsistent with circular A-4, which states that “Your analysis should focus on benefits and costs that accrue to citizens and residents of the United States. Where you choose to evaluate a regulation that is likely to have effects beyond the borders of the United States, these effects should be reported separately.” NHTSA failed to do this. Figure 2 below indicates the implications of this choice using the 3% discount rate and the actual data sent by EPA to OMB.

**Figure 2: Domestic versus Global SCC (Email from EPA to OMB)**



Source: US EPA (2018)

The graphic shows clearly that for any given year the global number is significantly larger than the domestic one – a roughly seven-fold difference. The domestic SCC for 2050 is \$10.6, while for the global SCC using the same 3% discount rate is \$78.90 in 2016 US\$. This is likely to have major ramifications for the benefit cost analysis. NHTSA simply ignored the information it had and hence draws conclusions based on misleading and scientifically not defensible modelling choices. The cost of adding this analysis is essentially zero, since one literally has to change a small set of numbers in computer code they had to produce anyway, so there is really no reason why such analysis was not included.

**Critique 3: The approach adopted to calculate a national number is at best an approximation and ignores important spillover effects.**

As the National Academies of Sciences final report (NAS, 2016) indicates, the calculation of a domestic (or national) social cost of carbon cannot be done credibly with the current models, as they ignore important spillover effects. While two of the models used in the analysis can produce estimates of local damages by simply spitting out numbers for the US region, this approach ignores a number of important spillover effects.

The first set of spillover effects stems from the fact that US companies own facilities all over the world. Negative impacts from climate change affecting production (e.g. conflict, productivity shocks, extreme events) will negatively affect US producer profits by affecting US production assets abroad. This could happen through assets directly owned by US corporations or assets owned by non-US entities that are

critical to the supply chain of US owned corporations. By simply “chopping up” the map, these spillover effects are ignored.

Second, climate change will affect the global pattern of production and trade (Costinot, Donaldson and Smith, 2016). The domestic estimates of the Social Cost of Carbon ignore this restructuring of production and the US role in global economic activity. The effects of climate change on trade can be large. Again, “chopping up the map” assumes away the all important web holding the global economy together for the past and presumably next century and beyond.

The National Academies of Sciences report (2016) states that “There is an emerging literature that also incorporates interactions among regions and impacts [...]. For example, given global markets, migration, and other factors, effects of a crop failure in India will also have impacts in other countries, and reductions in water availability in one region will have impacts across many regions and sectors. One set of interactions occurs through market mechanisms, such as trade. For example, the economic impacts of climate change on crop yield in one region will depend in part on the changes in crop yields in other regions. These interactions can be captured by multisectoral, multiregional economic computable general equilibrium (CGE) models. Models of global agriculture and forestry impacts have been developed over more than two decades [...]. Impacts can also interact with each other, and with mitigation policy, through their effects on competition for resources, such as water and land.” The current models do not capture any of these interactions in meaningful ways. To stress the point of how ad hoc the regional modeling was done, one need not look any further than how a domestic number was used for DICE. The agencies used the share of regional damages from another model by Bill Nordhaus (RICE) to estimate what share of damages are for the US region in *that other model* and using the percentage amount to “guesstimate” US damages in DICE. This is truly ad hoc and does not come close to representing best available science. In fact it is not even OK science. The simplistic and crude way the domestic SCC is calculated is at best an approximation not fit for rulemaking.

#### **Critique 4: The domestic social cost of carbon places zero value on the welfare of our men and women in the armed forces serving abroad, now or in the future.**

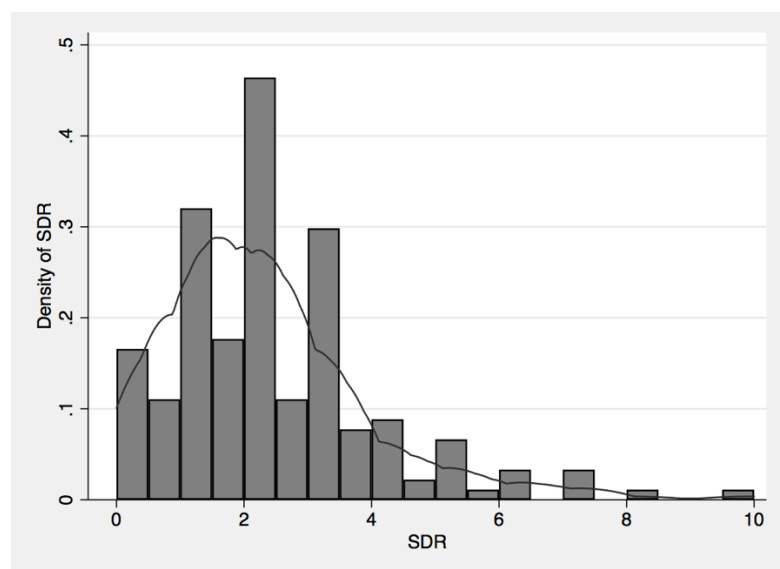
The US military has roughly 450,000 men and women stationed abroad (Brown and Gould, 2017). By their physical presence in other countries, they are exposed to changes in the environment directly. If climate change affects the environment where they are stationed, they will experience this changed climate first hand. If, as is the case, US emissions will cause this climate change abroad, there is a direct causal link between US emissions and the well being of US citizens abroad. Of course, this does not only hold for our men and women in uniform, but for any American citizen living or working abroad. The US department of state estimates that there are roughly 9 million US citizens living abroad. By using a domestic social cost of carbon in the way that the current rulemaking calculates it, the agencies are placing a value of \$0 on the well being of men and women in uniform serving abroad and US citizens living abroad. This hence does not treat every US citizen equally, but puts a lower (zero) weight on anyone living abroad.

Further, climate change is projected to lead to an increase in the frequency of conflict domestically and globally, which will possibly result in the deployment of American Troops. This would have consequences in several dimensions. It would lead to more soldiers being deployed, whose welfare again according to the modeling is valued at zero. It would also lead to possible spillover effects from conflict, which are not captured in the current models. If increased conflict in a region disrupts supply chains by disruption of access to key resources like rare earths and scarce metals, climate change would cause damage abroad, which would translate into direct damages to stakeholders (e.g. corporations) in the United States, which is not captured in the current models.

**Critique 5: The discount rates of 3% and 7% are not consistent with expert assessment of the discount rate.**

The interagency work group used three discount rates: 2.5%, 3% and 5% and explicitly showed results for all three scenarios. The choice of discount rate is made by the modeler and there is a significant literature in environmental economics discussing approaches to discounting and the rate to be used. In order to arrive at what experts think the appropriate discount rate is, one conducts an expert elicitation. The most recent and comprehensive of these is forthcoming in a top economics journal (Drupp et al, forthcoming). In the paper they solicit expert responses as to what the discount rate should be and the results are not consistent with what has been done in the analysis underlying this rulemaking, which uses a 3% and 7% discount rate. The Drupp paper shows that the median discount rate is 2% and the mean discount rate is 2.27%. I have downloaded the data and confirmed these numbers. Figure 3 displays the distribution of the discount rate (referred to as the social discount rate) in this paper.

**Figure 3: Social Discount Rates – Expert Elicitation (Drupp et al., forthcoming)**



Source: Author Visualization of Drupp et al. (forthcoming)

An analysis of the data shows that less than 3% of the experts think that the preferred SDR is 7% or higher. Further 67% of experts stated that the number is lower than 3%. 62% of experts stated that the SDR is lower than 2.5%, which is *the lowest number considered by the sensitivity analysis in the current report*. What this means is that two third of experts in the field state that the discount rate applied in this proposed rulemaking is above what they believe to be scientifically preferred number.

The consequences of this choice are stark. If we compare the global SCC for 2020 in 2016 US\$ discounted at 7% the number is \$5.13. When discounted at the arguably still too high discount rate of 3%, the number becomes \$47.60. At a 2.5% discount rate the global number is \$71.22 (all estimates are taken from the posted spreadsheet by EPA (2018)). Hence, going from 7% to 2.5% represents a 13.9 fold increase in the SCC. And as argued above most experts in the most recent peer reviewed study believe that the 2.5% number is too high, which would make the social cost of carbon even higher. The same argument carries over to the domestic number. The domestic SCC for 2020 in 2016 US\$ discounted at 7% the number is \$0.98. When discounted at the arguably still too high discount rate of 3%, the number becomes \$6.54. At a

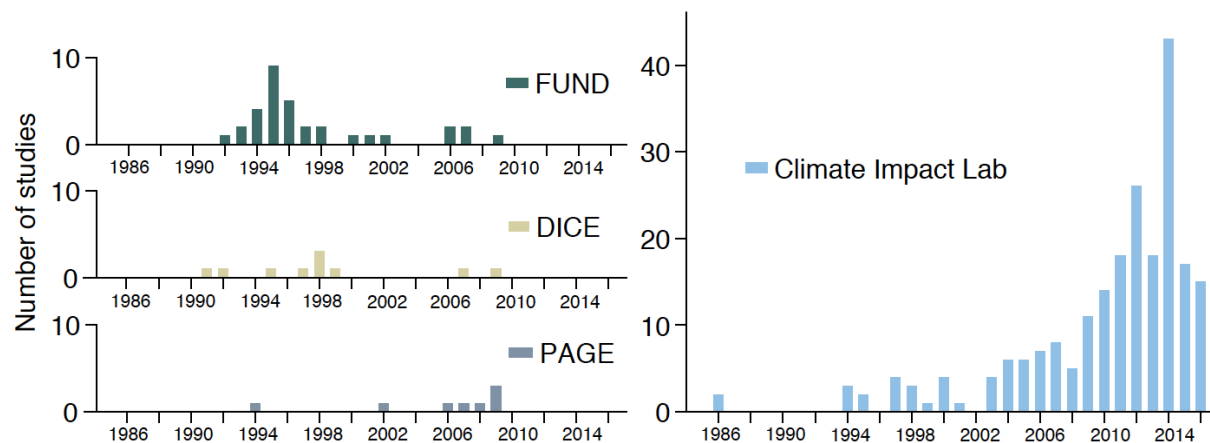
2.5% discount rate the domestic number is \$9.47 (all estimates are taken from the posted spreadsheet by EPA).

**Critique 6: The agencies did not use best available science by employing models relying on outdated representations of damage functions.**

As the National Academies of Sciences Report (2016) points out, the current IAMs rely on severely outdated damage functions. In a presentation to the National Academies of Sciences, Professor Michael Greenstone (2016) of the University of Chicago showed a distribution of the publication dates of the studies underlying the damage components of the IAMs used in the calculation of the SCC used by the IWG and in this rulemaking. Not a single study published after 2010 is included. This means that the damage functions are almost a decade out of date. If one looks at the full distribution of the vintage of the included science, one can see that the majority of studies the SCC estimate for FUND is based on were published in the mid 1990s, which is 20 years ago. The distribution is similar for DICE and a bit more recent for PAGE.

The two questions one would want to answer then are, whether there is more recent science and whether this science has changed the damage functions. To answer the first question, one need only look at figure 4 below, where in the right panel it displays a review of the University of Chicago/Berkeley/Rutgers/Rhodium Climate Impact Lab, which shows an explosion of the literature since 2010. None of these papers are incorporated in the current SCC estimates. Hence, the SCC estimates do not reflect best available science by a decade.

**Figure 4: Vintage of the literature used for the IWG IAMs (Greenstone, 2016)**



Source: Greenstone (2016)

To answer the second question, one must recognize that the FUND model, for example, assumes that increases in temperature result in global increases in agricultural production. This damage function ignores a finding made in 2009 and which has been reconfirmed across crops and locations that extreme heat days are extremely damaging to crop yields. Scientific consensus at this point concludes that globally projected climate change will have negative impacts on yields (Chalinor et al, 2014). There are a number of sectors with similar findings, which have not been incorporated into the models.

The fact that *none* of these papers were incorporated in the modelling underlying this current rule is unacceptable and represents outdated and a state “far from best available science”. The EPA has the skill and resources to do so, but was never instructed to update the science.

While I acknowledge that updating damage functions in IAMs is not a straightforward undertaking, several readily available projects were simply ignored. A recent paper by Moore, Hertel, Baldos and Diaz (2017) provide a readily available improved damage function for the agricultural sector for FUND for example. De Cian et al. (in press) provide estimates one could use for a damage function for the energy sector, which is the biggest source of damages in FUND. The Climate Impact Lab at the University of Chicago and Berkeley as well as Resources for the Future have made great progress in implementing the changes recommended by the National Academies of Sciences without readily a priori available modelling resources. The fact that none of the changes suggested by the independent National Academies of Sciences Panel were implemented by the agencies represents an intentional disregard for what is best available science. Failing to incorporate these recent scientific findings, is a disregard for science. And the consequences are grave. As Moore, Hertel, Baldos and Diaz (2017) conclude, “These new damage functions reveal far more adverse agricultural impacts than currently represented in IAMs. Impacts in the agriculture increase from net benefits of \$2.7/ton CO<sub>2</sub> to net costs of \$8.5/ton, leading the total SCC to more than double.” To put this in plain language. Simply updating the damage function for one sector using peer reviewed damage functions from the IPCC, leads to triple the size of effects – in the opposite direction and a doubling of the SCC.

### **Critique 7: Current peer reviewed science in a top journal suggests a domestic SCC of \$48/ton of CO<sub>2</sub> for the US**

A new paper by Ricke, Drouet, Caldeira and Tavoni (2018) released in the most recent issue of the top journal *Nature Climate Change* uses a more recent approach to quantify the market damages of climate change at the country level using the model by Burke, Hsiang and Miguel (2015) in the journal *Nature*. They use a statistical relationship to estimate the relationship between growth rates in per capita GDP across countries and temperature to calculate the impacts of climate change on GDP at the country level. This paper relies on the most extensive dataset of the measured value of goods and services and temperature at the country level over the recent historical record. It employs cutting edge statistical methods to quantify the impact of temperature shocks on economic output at the country level. It combines these statistical estimates with cutting edge climate science to estimate the SCC at the country level. Its shortcoming is that it ignores non-market impacts and spillover effects, which means a significant number of impact categories are left out of the analysis, which would push the SCC even higher.

This most recent modelling effort arrives at a US domestic SCC of \$48 per ton, which is of course much larger than the \$1-\$7 range NHTSA used. While this paper was not released at the time of the proposed rulemaking, it is now and the analysis should be redone using this most recent, actually peer reviewed, estimate of the domestic social cost carbon, if agencies incorrectly insist on using the domestic instead of the global number. Not doing so would again ignore the most recent peer reviewed record on the subject, as the analysis underlying this rule has consistently done.

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