

Congress of the United States

House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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August 13, 2014

The Honorable Gina McCarthy
Administrator
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20004

Dear Administrator McCarthy,

For too long the Environmental Protection Agency (EPA) has hidden the truth from the American people. In order to regain public trust, the agency should rely on robust, objective, and well-grounded technical analysis of climate regulations. The EPA has performed limited analysis of its proposed Emissions Guidelines for Greenhouse Gas Emissions from Existing Stationary Sources: Electric Utility Generating Units. However, EPA's modeling suffers from a number of deficiencies that mask the rule's implications and limit its usefulness as a policy tool.

Setting aside key legal problems with EPA's novel approach to setting standards under section 111 of the Clean Air Act,¹ rigorous analysis through an open and transparent framework cannot be sacrificed in the name of expediency. Reassurances of "flexibility" are inadequate when considering regulations of this magnitude. Americans deserve an opportunity to see the facts.

Flaws in recent EPA analyses amplify concerns about the real impacts of these regulations. Last week the Government Accountability Office released a report highlighting a pattern of shoddy EPA analysis. It was revealed that EPA relied on decades old data and ignored important factors. The independent watchdog warned that "EPA cannot ensure that it's [analysis] provide the public with a clear understanding of its decision making."²

¹ This letter and the modeling discussed herein do not address underlying problems with the legality and troubling one-size-fits-all approach to standard setting espoused in EPA's carbon guidelines. This modeling request focuses on compliance impacts. Nonetheless, I directed my staff to meet with your staff and review EPA modeling in detail: both standard setting modeling and compliance modeling. While your staff has been responsive in many regards, it is my understanding that you continue to delay this request. I respectfully ask you make the relevant staff available to facilitate these related discussions immediately.

² GAO, *EPA Should Improve Adherence to Guidance for Selected Elements of Regulatory Impact Analysis*, at 32 July 2014. Available at <http://oversight.house.gov/wp-content/uploads/2014/08/GAOREport.pdf>.

For example, EPA claimed that the Mercury and Air Toxics Standards (MATS) would retire just 4.7 gigawatts of power. Yet, the Energy Information Administration (EIA) now projects that 54 gigawatts of generating capacity, ten times more than EPA's projections, will close by the MATS compliance deadline.³ EPA also said that MATS would increase electricity rates by just 1.3% to 6.3%. However, reports indicate that rate-payers are facing a 21% increase in rates this summer due to MATS power plant closures.⁴ Further, EPA assured Americans that MATS would not result in reliability concerns, but Midwest grid operators now warn of an impending electricity shortage.⁵

EPA's failure to adequately model MATS impacts is all the more troubling in light of the fact that EPA itself now models up to 49 gigawatts of plant closures due to the proposed section 111 regulations. If past performance is an indication, could this number double, triple, or worse? Without public access to all underlying assumptions, modeling mechanisms, and results, it is impossible to know whether the Agency has corrected the core deficiencies that resulted in the gross underestimation of impacts. Americans cannot afford to pay for EPA's mistakes.

The Agency should provide an analysis that takes real-world contingencies into account. Although Congress is currently acting on legislation that would prohibit EPA's use of non-transparent methodologies in the development of its rules,⁶ EPA continues to rely on models that are not publicly available.⁷ Consequently, we are simultaneously asking the EIA to independently model the same specifications. Tandem analysis by EPA and EIA will allow for a side-by-side comparison results and provide a more comprehensive accounting of the possible impacts of the agency's proposal.

EPA's incomplete modeling disregards a number of technical, regulatory, and economic realities.⁸ These omissions have the effect of downplaying the possible energy and economic impacts of this proposal while simultaneously ignoring the lack of climate benefits. The costs of any greenhouse gas policies are directly proportional to the price and availability of viable technologies. In the case of base load power, these options include carbon capture and storage (CCS), natural gas, nuclear, and hydro-electric in some locations. In its analysis, the EPA assumes that these technologies are available and relatively affordable throughout the lifetime of the policy and beyond. But the facts paint a different picture.

³ Energy Information Administration, *AEO2014 Projects More Coal-Fired Power Plan Retirements Than Have Been Scheduled*, Feb. 14, 2014.

⁴ Julie Wernau, *Higher Electric Bill to Jolt Chicago Area*, CHI. TRIB, May 8, 2014.

⁵ Midcontinent Independent Systems Operator, *OMS/MISO Resource Adequacy Survey Update 3*, Jan. 31, 2014.

⁶ H.R. 4012, The Secret Science Reform Act of 2014, requires that the EPA base its regulations and assessments on science that is publicly available in a manner sufficient for independent analysis and scientific replication. Legislation and Status available at: <http://thomas.loc.gov/cgi-bin/bdquery/z?d113:h.r.04012>. Senator Barrasso introduced a Senate companion bill, S. 2613, on July 16, 2014.

⁷ EPA relies on a proprietary model, the Integrated Planning Model (IPM), whose results cannot be verified independently. The reliance on proprietary models by EPA potentially violates the Data Quality Act.

⁸ This proposal will have ripple effects throughout the wider economy as higher electricity and natural gas prices create drag on other sectors. No rule should proceed absent peer-reviewed economy-wide modeling. However, EPA has not attempted to model these impacts but is establishing a "Science Advisory Board panel on economy-wide modeling to consider the technical merits and challenges of using this analytical tool to evaluate costs, benefits, and economic impacts in regulatory development." RIA at 5-2.

For example, notwithstanding the Administration's claim that CCS is "adequately demonstrated," serious questions remain about its technological and economic viability beyond unique applications. At the same time, the EPA is poised to choke off the only economically viable CCS option, enhanced oil recovery, by putting in place regulations that would preclude its use as a carbon abatement option.⁹ Furthermore, EPA has refused to recognize the use of other carbon utilization technologies for compliance purposes.¹⁰ There is no evidence that EPA's modeling has taken these considerations into account.

In addition to issues related to the use of coal, concern about climate change has reinforced opposition in some quarters against other types of energy production. In the case of natural gas, continued access at today's historically low prices is questionable in the face of special-interest opposition to drilling and the specter of additional federal regulations. Further, EPA's sweeping assumption that natural gas plants can increase annual utilization to 70% across the entire fleet, presents huge technological challenges both at the plants and within the supply chain. EPA's proposal admits that 70% utilization rates have been exceptionally rare;¹¹ consequently, assertions of technical feasibility require detailed modeling, contingency planning, and real-world testing. There is no evidence that EPA's modeling has taken many of these and other confounding factors into account.

Over the past decade, there has been a renewed interest in nuclear power as an alternative to fossil fuels. Yet despite greater acceptance of this emissions-free energy resource, nuclear power faces a host of obstacles and uncertainties that could not only inhibit its expansion, but will accelerate retirements from the existing fleet. EPA's modeling fails to adequately consider the challenges facing our existing nuclear fleet.

The Agency also fails to model the significant uncertainty presented by challenges to the rule. For example, a recent Supreme Court decision underscored the possibility of successful legal challenges, particularly with respect to EPA's "beyond the fence" analysis.¹² EPA claims the various "building blocks" that form the basis of its proposal are severable – meaning the rule could stand, but one or more of the various emissions reductions strategies upon which it is based could be eliminated. There is also considerable uncertainty as to whether states will embrace EPA's proposal and implement it through a State Implementation Plan (SIP) like process. Consequently, if the Agency forcibly imposes a federal implementation plan on states, EPA's options may be limited to regulating the power plants themselves. Accordingly, an alternative policy analysis should assess the impact of the guidelines under a scenario limited to heat rate improvements and dispatch changes among affected power plants.

⁹ See generally Letter from U.S. House of Representatives Committee on Science, Space, and Technology to EPA Administrator Gina McCarthy, Dec. 19, 2013. Available at http://science.house.gov/sites/republicans.science.house.gov/files/documents/Letters/121913_mccarthy.pdf.

¹⁰ Amanda Peterka, *Algae Companies Ask EPA to be able to Cash in on Power Plant Emissions*, GREENWIRE. Aug. 6, 2014.

¹¹ "The corresponding percentages of NGCC units that in 2012 operated at annual utilization rates of at least 65 percent and at least 75 percent were 16 percent and 6 percent, respectively." U.S. EPA, *Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, June 2, 2014, at Fn 127.

¹² *Utility Air Regulatory Group v. Environmental Protection Agency*, 573 U.S. ____ (2014).

These fundamental technical constraints raise serious questions as to how this country could meet growing electricity demand affordably and reliably while complying with EPA's proposed carbon regulations. As such, we are requesting that your Agency analyze the proposed guidelines taking these realities into account. Local, state, and regional level impacts must also be carefully considered. The effects of EPA's policies will vary dramatically and hinge on a wide variety of issues including everything from existing power resources and access to low cost alternatives to infrastructure constraints and energy demands. Americans deserve the bottom line: what does it cost and what will we get for the money?

Finally, EPA's failure to model impacts between 2030 and 2040 is a serious analytical shortcoming. The Administration has committed to reduce emissions by 83% by 2050. As a result, reductions beyond 2030 must be analyzed to understand the implications of this approach. Given the White House's promises in this regard, the target reduction for the power sector for 2040 should be modeled on a trajectory consistent with the implied 2050 target.

An expedited process would be greatly appreciated. Credible analysis is critical to a well-informed debate concerning climate change and energy policy choices now before American people. Please provide this analysis as specified below by September 15, 2014.

My staff is available to work with you to clarify any issues. Thank you for your prompt attention to this critical matter.

Sincerely,



Lamar Smith
Chairman
Committee on Science, Space, and
Technology

cc: The Honorable Adam Sieminski, Administrator, Energy Information Administration,
Department of Energy
John Podesta, Counsel to the President, Executive Office of the President
The Honorable John Holdren, Director, Office of Science and Technology Policy, Executive
Office of the President
Rep. Eddie Bernice Johnson, Ranking Member, Committee on Science, Space, and
Technology

Specifications for Analysis

Baseline Case:

The analysis should be based on EIA's Annual Energy Outlook 2014 (AEO2014) through 2040; baseline case "No GHG Concerns."

Policy Case:

Target reductions: 26% by 2020; 30% by 2030; 45% by 2040.

Alternative Policy Case:

Target reductions: 26% by 2020; 30% by 2030; 45% by 2040. Emissions reduction strategies limited to EPA "Building Blocks" 1 and 2 (heat rate improvement; dispatch changes among affected EGUs).

Sensitivity Analyses:

Run on both the Policy Case and Alternative Policy Case described above.

1. Accelerated nuclear retirement pursuant to the AEO 2014 side case;
2. Low natural gas supply pursuant to AEO 2014;
3. High LNG exports: 10 bcf/d by 2020, 15 bcf/d by 2025, and 20 bcf/d by 2030 from Gulf Coast and Atlantic Coast LNG terminals;
4. No market for EGU generated CO₂; and
5. Aggregate of S1+S2+S3+S4.

Model Output and Analysis (state, regional, and national annual data):

All price point information should be reported in both real and nominal dollars.

1. Disposable income.
2. Jobs impact.
3. Greenhouse gas emissions - CO₂ from electric generation, accounting for power plant fuel supply methane leakage.
4. National, regional electric markets, aggregation in NERC regions in 2005 base, 2012, 2015-2040.
5. Coal plants retired: 2005 base, 2012, 2015-2040.
6. Reserve margins in NERC regions.

7. Natural gas supply, accounting for LNG exports.
8. Natural gas prices: domestic, LNG in Europe, LNG in Asia-Pacific.
9. Incremental infrastructure costs: electric transmission, natural gas infrastructure, CO2 infrastructure.
10. Costs: electricity, natural gas to non-electric users.
11. Stranded capital costs by year, aggregate.
12. Cost of power in baseline case and cost of power in Alternative Policy Cases from new plants.
13. Renewables: capacity, % in each NERC region, capacity factors, supplemental backup (spinning reserve), regional loss of load probability (LOLP) analysis.
14. NEMS natural gas information, including:
 - a. Supply curve in AEO 2014, data used to validate new module, results of model validation;
 - b. Retrospective analysis (projections vs. actual) for wellhead prices, production, and net imports: specifically, AEO2008, AEO 2010, AEO 2012; and
 - c. Results of Stanford Energy Modeling Forum critiques/evaluation.
15. MAGICC analysis of sea level rise and global temperature for assume climate sensitivities of 3.0, 1.5, 1.0 for:
 - a. Baseline case using U.S. CO2 emissions through 2040 and Rest of World (ROW) emissions from IEO 2013; and
 - b. Policy Case of 30% power plant emission reductions through 2030 and 45% in 2040.
16. Social Cost of Carbon analysis through 2040 using the U.S. emissions through 2040, ROW emissions from IEO2013:
 - a. FUND and DICE models results using Climate sensitivities 3.0, 1.5, 1.0;
 - b. Provide results based on the use of a domestic-only social cost of carbon for 3% and 7% discount factors; and
 - c. Provide the predicted sea level rise and temperature for each year.
17. Non-climate benefits: only include non-CO2 emissions reductions in non-attainment areas that help achieve NAAQS targets.