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Washington, DC 20460

Via a-and-r-docket@epa.gov

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Comments on Proposed Rule, Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, April 13, 2012, 77 Fed. Reg. 22392.

The Alliance to Save Energy (the Alliance) is grateful for the opportunity to provide comments on the proposed Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units (NSPS) rule.

The Alliance is a nonprofit coalition of business, government, environmental and consumer leaders that supports energy efficiency as a cost-effective energy resource and advocates energy-efficiency policies that minimize costs to society and individual consumers, and that lessen negative environmental impacts. The Alliance has worked extensively with energy utilities, commercial and industrial firms, public agencies, consumer and environmental organizations, and others to promote energy efficiency as an approach to mitigate the environmental impacts of energy use as well as to achieve other benefits.

When air quality regulatory measures are contemplated, the Alliance favors approaches that recognize, credit and promote the role of energy efficiency—including end-use efficiency—in reducing pollution and negative environmental impacts. As the EPA has acknowledged at various times, more efficient use of energy reduces the amount of fuel required to provide energy services and, thus, the emissions and other negative environmental impacts associated with fuel use.¹

¹ Among various examples, prominence of energy efficiency in greenhouse gas Best Available Control Technology guidance (“PSD and Title V Permitting Guidance For Greenhouse Gases”); inclusion of integrated planning model (IPM) analyses of demand-side energy efficiency measures in the Notice of Proposed Rulemaking for the Mercury and Air Toxics Standard (National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units, 76 FR 24976); EPA recognition and support for energy efficiency NOx allowance set-asides under the NOx SIP Call and Clean Air Interstate Rule (US EPA, Office of Air and Radiation, “Fact Sheet: Energy Efficiency and Renewable Energy Set-Aside in the NOx Budget Trading Program”; US EPA, Office of Air and Radiation, Aug. 2004, “Guidance on State Implementation Plan (SIP) Credits for Emission Reductions from Electric-Sector Energy Efficiency and Renewable Energy Measures.”); inclusion of energy efficiency provisions in the recently issued area and major source “boiler MACTs”; and EPA support for Energy Star, the State Energy Efficiency Action Network (and its predecessor, National Action Plan for Energy Efficiency), and the Combined Heat and Power Partnership.

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The Alliance appreciates and encourages the EPA's attention to energy efficiency as an emission reduction and compliance approach and appreciates EPA's recognition of energy efficiency as a means to reduce compliance costs and support electric system reliability. Further, EPA's recognition of energy efficiency is consistent with national policy under the Pollution Prevention Act of 1990, that pollution should be prevented or reduced at the source whenever feasible.²

The Alliance wishes to comment on the following issues:

- Appreciation for EPA proposing an output-based standard.
- Appreciation for EPA proposing credit for useful thermal output from combined heat and power (CHP) electric generating units (EGUs) but with recommendations to:
 - Not limit the definition of CHP to “steam-generating” units,
 - Provide 100 percent rather than the proposed 75 percent thermal credit for useful thermal output,
 - Highlight availability of the thermal credit,
 - Provide guidelines on appropriate thermal applications and calculation of thermal credit,
- Encourage EPA to recognize and incentivize energy efficiency in a prospective existing source rule under Clean Air Act §111(d).

1. Appreciation for EPA proposing an output-based standard.

The Alliance appreciates EPA's recognition of the energy efficiency incentive benefits of output-based emissions limitations and its inclusion in this proposed NSPS.

2. Appreciation for EPA proposing credit for useful thermal output from combined heat and power (CHP) EGUs but with recommendations.

The Alliance also appreciates EPA allowing applicable EGUs to credit useful thermal output toward meeting the proposed emissions standard. However, the Alliance offers several recommendations to clarify and enhance provisions relating to CHP and to encourage regulated entities to use CHP where feasible.

a. Do not limit CHP to “steam-generating” units.

The rule as proposed defines CHP or cogeneration as “a steam-generating unit that simultaneously produces both electric (and mechanical) and useful thermal energy from the same primary energy source.”³

The Alliance is concerned that defining CHP as being steam-generating units is too narrow. In principle approaches other than boiling water to make steam, such as the organic Rankine cycle and high temperature fuel cells, can be used to generate power and serve thermal applications. While, admittedly, non-steam CHP systems are unlikely to fall under the proposed rule based on current economics and technology, the potential for innovative non-steam-generating technologies should not be constrained by a narrow definition in a rule.

We recommend removal of the term “steam-generating” from the definition. Removal of that term would allow the definition to include alternative approaches but does not weaken the definition so as to create loopholes in the rule.

b. Provide 100 percent rather than the proposed 75 percent thermal credit for useful thermal output.

² 42 U.S.C. § 13101 *et seq.*

³ 77 Fed. Reg. at 22439, in proposed § 60.5580

The rule as proposed defines gross output as “the gross electrical or mechanical output from the unit plus 75 percent of the useful thermal output...”⁴ The Alliance questions the rationale for a 75 percent credit and, instead, suggests that a full 100 percent credit be allowed for useful thermal output.

The origin of a 75 percent credit appears to be a 2005 EPA memorandum that determined “equivalent input-based CHP limits” by comparing CHP unit emissions of nitrogen oxides (NO_x), sulfur dioxide (SO₂) and particulate matter (PM) over a range of power-to-heat ratios with the then current utility and industrial boiler NSPSs for those pollutants.⁵ That memorandum determined that 75 percent was an appropriate thermal credit because it is the average of 80, 51 and 90 percent, which were found to be thermal credit rates that best fit the “equivalent input-based CHP limit” curves for NO_x, SO₂ and PM, respectively. While the rationale for applying this methodology to criteria pollutants, for which there can be concerns over impacts on National Ambient Air Quality Standard (NAAQS) compliance, is unclear, there is no basis for applying it to carbon dioxide (CO₂), for which there are no existing input-based limits on industrial and utility boilers and for which there are no NAAQS implications.

EPA previously allowed 100 percent thermal credit for CHP units in the 2006 NSPS for Stationary Combustion Turbines.⁶ Further, the aforementioned EPA memorandum notes that “giving between 75 to 100 percent thermal credit for thermal output from CHP units most accurately accounts for the environmental benefits of CHP” and that “one could also argue that 100 percent credit for thermal output is also appropriate.”⁷

While the differences between electrical and thermal output may justify differential treatment, the limited scope of CHP under this rule does not seem to warrant adding complications. Thus, without setting a precedent for other rulemakings, we recommend that EPA remove the 75 percent of thermal output limitation from the definition of gross output and allow CHP facilities to credit 100 percent of useful thermal output for this purpose.

We also note that, at least in principle, a coal-fired CHP EGU operating at high efficiency for both electric generation and useful thermal energy recovery may be able to meet the proposed 1000 lb. CO₂ per MWh standard without use of carbon capture and storage (CCS) technology.

c. Highlight availability of the thermal credit.

The availability of a thermal credit for CHP appears only implicitly in the rule in the definition of gross output. We recommend that EPA highlight the availability of a thermal credit in the preamble of the final rule and in any accompanying guidance.

d. Provide guidelines on appropriate thermal applications and calculation of thermal credit.

We recommend that EPA provide to permitting authorities and the regulated community guidelines on appropriate thermal applications and calculation of thermal credit. Guideline could assuage concerns of potential sham thermal applications (e.g., could an EGU operator claim thermal credit for releasing hot

⁴ 77 Fed. Reg. at 22439, in proposed § 60.5580

⁵ Memo from Christian Fellner to Utility, Industrial, and Commercial Boiler NSPS File, Feb. 2005, “Combined Heat and Power (CHP) Compliance.”

⁶ 71 Fed. Reg. 38482, 38505, July 6, 2006, “Final Rule: Standards of Performance for Stationary Combustion Turbines” (§ 60.4420 “What definitions apply to this subpart?” provides “*Useful thermal output* means the thermal energy made available for use in any industrial or commercial process, or used in any heating or cooling application, i.e., total thermal energy made available for processes and applications other than electrical or mechanical generation. Thermal output for this subpart means the energy in recovered thermal output measured against the energy in the thermal output at 15 degrees Celsius and 101.325 kilopascals of pressure.”) (emphasis added).

⁷ Ibid.

cooling water into a reservoir in winter on the basis of supposed recreational value?) while also helping outline *bona fide* thermal applications.

3. Encourage EPA to recognize and incentivize energy efficiency in a prospective existing source rule under Clean Air Act §111(d).

Although the proposed rule concerns standards for new fossil fuel EGUs, we recognize that the Clean Air Act includes a process to develop guidelines to states and tribes for applying emission standards to existing sources under §111(d). We urge EPA in any such future guidelines to consider the importance of both supply and demand-side energy efficiency and the effect of state energy efficiency policies and regional initiatives to reduce and avoid emissions. Energy efficiency resource standards, utility programs, building energy codes, state fiscal incentives, inclusion of energy efficiency and CHP in renewable electricity standards, and other policies have delivered emissions avoidance. As was noted by various participants during the “listening sessions” EPA conducted in advance of this proposed rule, states that have undertaken such policies effectively should have their efforts recognized and, if warranted, be able to show “equivalence” to prospective federal guidelines developed under §111(d).

Promoting end-use energy efficiency as a cost-effective method to reduce EGU emissions is not merely a good idea. Pollution prevention via energy efficiency is national policy under the Pollution Prevention Act of 1990: “The Congress hereby declares it to be the national policy of the United States that pollution should be prevented or reduced at the source whenever feasible.”⁸ EPA acknowledges the importance of pollution prevention in regulation development in its P2 (Pollution Prevention) Policy:

First, we must work within the law to design and implement our regulations to provide incentives for source reduction. That will mean better coordination of different regulations that affect the same industry to reduce transaction costs, minimize cross-media transfers of waste, and provide a clearer sense of our long-term goals for the regulated community. . . . Second, we must encourage pollution prevention as a means of compliance through our permitting, inspection, and enforcement programs . . .⁹

Promoting energy efficiency as a method of achieving EGU emissions reductions is also consistent with, if not required by, Executive Order 13563 “Improving Regulation and Regulatory Review.” Under that Order, the President declared that:

Our regulatory system must protect public health, welfare, safety, and our environment while promoting economic growth, innovation, competitiveness, and job creation. [The regulatory system] must identify and use the best, most innovative, and least burdensome tools for achieving regulatory ends.¹⁰

Finally, energy efficiency can also deliver emissions reductions (and energy “generation”) in more targeted ways than large abatement devices or fuel switching at EGU, allowing for greater flexibility. Several studies by McKinsey & Company confirm that energy efficiency is perhaps the cheapest and quickest method to reduce GHG emissions. The compelling “McKinsey Curve” below depicts that, of the array of all GHG emission reduction techniques, various end-use energy efficiency measures (such as building insulation in both new construction and retrofit, lighting and cooling) are among the few that can reduce GHG emissions

⁸ 42 U.S.C. § 13101(b).

⁹ “P2 Policy Statement: New Directions for Environmental Protection,” June 15, 1993. Available at <http://www.epa.gov/p2/pubs/p2policy/policy.htm>.

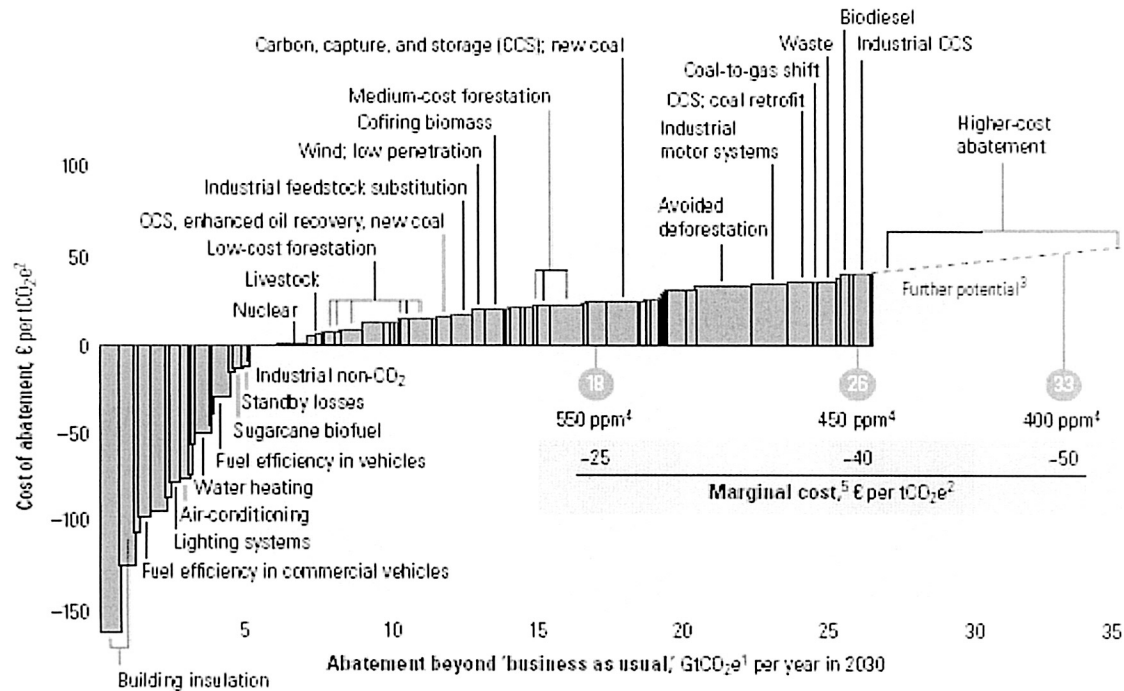
¹⁰ Executive Order 13563 “Improving Regulation and Regulatory Review.” January 18, 2011. Available at <http://www.whitehouse.gov/the-press-office/2011/01/18/improving-regulation-and-regulatory-review-executive-order>.

at “negative cost,” i.e., energy efficiency simultaneously reduces GHG emissions, saves energy and saves money.¹¹

What might it cost?

Global cost curve for greenhouse-gas abatement measures beyond ‘business as usual’; greenhouse gases measured in GtCO₂e¹

● Approximate abatement required beyond ‘business as usual,’ 2030



¹ GtCO₂e = gigaton of carbon dioxide equivalent; “business as usual” based on emissions growth driven mainly by increasing demand for energy and transport around the world and by tropical deforestation.

² tCO₂e = ton of carbon dioxide equivalent.

³ Measures costing more than €40 a ton were not the focus of this study.

⁴ Atmospheric concentration of all greenhouse gases recalculated into CO₂ equivalents; ppm = parts per million.

⁵ Marginal cost of avoiding emissions of 1 ton of CO₂ equivalents in each abatement demand scenario.

Source: McKinsey & Company

Again, the Alliance thanks the EPA for recognition and encouragement of energy efficiency as means for reducing emissions and achieving compliance. We thank you for the opportunity to comment on this important rule and hope that these comments are useful.

Sincerely,

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¹¹ “A cost curve for greenhouse gas reduction,” *The McKinsey Quarterly* (2007) available at http://www.mckinseyquarterly.com/A_cost_curve_for_greenhouse_gas_reduction_1911