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EPA Docket Center No. EPA-HQ-OAR-2002-0058
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Petition for Reconsideration: National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 76 Fed. Reg. 15608 (Mar. 21, 2011)

Dear Administrator Jackson:

We are members of the Alliance for Industrial Efficiency and the US Clean Heat and Power Association (USCHPA). The Alliance for Industrial Efficiency is a diverse coalition that includes representatives from the business, environmental, labor and contractor communities. The Alliance is committed to enhancing manufacturing competitiveness, reducing emissions, and creating jobs through industrial energy efficiency, especially the use of Waste Heat Recovery (WHR) and Combined Heat and Power (CHP). USCHPA is a non-profit trade association created to promote the growth of clean, efficient local energy generation. The Boiler MACT includes a number of key provisions that help advance these goals. Our comments both applaud these aspects of the final rule and identify several opportunities to achieve even greater emissions reductions from regulated entities.

The Alliance for Industrial Efficiency and US Clean Heat and Power Association recognize that EPA is initiating a reconsideration process with respect to certain aspects of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for New and Existing Sources for Major Source Industrial, Commercial, and Institutional Boilers and Process Heaters (hereinafter "Boiler MACT"). While we do not seek reconsideration of the aspects of the rule highlighted in the March 21 Reconsideration Notice, we file this Petition for Reconsideration to seek clarifying and strengthening changes to several provisions and to reaffirm our support for many aspects of the rule. Several of our recommendations relate to provisions that were not included in the proposed rule (i.e., the output-based standard, the February 2011 Regulatory Impact Analysis, and the Technical Assistance program that Gina McCarthy announced in a stakeholder briefing following the release of the final rule). As such, we were unable to comment on these issues during the

Notice of Proposed Rulemaking comment period, thus making Reconsideration appropriate under the Clean Air Act, Section 307(d)(7)(B).

As an initial matter, we commend EPA's recognition of the benefits of energy efficiency in the Boiler MACT. As EPA notes in the Response to Comments, "One of the opportunities for pollution prevention lies in simply using energy efficient technologies to minimize the generation of emissions."[1] Indeed, energy-efficient technologies can reduce fuel use and associated emissions not only of the hazardous air pollutants at the heart of the Boiler MACT, but of criteria pollutants and greenhouse gases as well. In this way, energy efficiency advances a multi-pollutant planning agenda, which the National Research Council has long been recognized as the preferable approach to clean air regulation.[2]

Notably, the Boiler MACT includes a number of provisions that enable regulated entities to cost-effectively reduce emissions through energy efficiency. These include work-practice standards, energy assessments, and the option of applying an output-based emissions standard. These provisions are mutually reinforcing. Indeed, as EPA acknowledges in the Response to Comments, "output-based standards would provide incentives for implementation of energy conservation measures identified in an energy assessment."[3] The seminal McKinsey report recognized the need for such a multi-faceted approach to realizing energy efficiency benefits, finding: "Energy efficiency offers a vast, low-cost energy resource for the U.S. economy – but only if the nation can craft a comprehensive and innovative approach to unlock it."[4] We believe the Boiler MACT is a key component of this "comprehensive and innovative approach" and emphatically support the suite of provisions that help regulated facilities identify and implement opportunities to improve energy efficiency. We urge EPA not to weaken these provisions of the rule during Reconsideration; however, we do note the following to modestly strengthen the rule and further advance industrial efficiency:

1. **EPA Should Clarify that Coal-Fired Facilities Seeking to Incorporate Clean and Efficient Combined Heat and Power or Waste Heat Recovery Are Eligible for a One-Year Compliance Extension.**

The two main compliance options for the owners of regulated coal-fired boilers are to install add-on pollution-control equipment or to switch to burning natural gas. Emission reductions would be even greater if facilities opted to install a natural gas-fired Combined Heat and Power (CHP) or Waste Heat Recovery (WHR) system. These energy efficiency improvements would meet the

[1] 76 Fed. Reg. 15608, 15630, Mar. 21, 2011, "Final Rule: National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters."
[2] *See* National Research Council, 2004, "Air Quality Management in the United States," at 6 (air quality management should "[s]trive to take an integrated multipollutant approach to controlling emissions of pollutants posing the most significant risks.") (http://www.nap.edu/openbook.php?record_id=10728&page=6).
[3] 76 Fed. Reg. at 15630.
[4] McKinsey & Company, July 2009, "Unlocking Energy Efficiency in the U.S. Economy," at xii (http://www.mckinsey.com/clientservice/electricpowernaturalgas/downloads/us_energy_efficiency_full_report.pdf).

facility's process needs while alleviating the regulated entity of the emissions limits of the Boiler MACT.

CHP developers and environmental engineering firms, however, worry that three years may not be sufficient time for boiler owners to design, permit and install a CHP system. EPA regulations clearly recognize the potential delays for boiler owners seeking to install add-on pollution controls, allowing those boiler owners to petition for a one-year extension if necessary for the installation of such controls.[5] We urge EPA to clarify that CHP and WHR can be deemed "controls" under the Act, thereby allowing the same one-year extension to apply to the installation of efficient CHP or clean WHR on a regulated boiler. Absent this clarification, facilities may be deterred from pursuing these technologies that ultimately lead to greater fuel savings and emission reductions.

2. EPA Should Modify the Output-Based Alternative Compliance Mechanism To Allow More Facilities To Benefit.

As EPA recognizes, boiler emission regulations traditionally discriminate against energy efficiency by allowing units with low operating efficiency to emit more of each pollutant per output (steam or electricity) produced than more efficient units. This approach fails to credit the dual (thermal and electric) outputs of CHP and WHR systems. Output-based emission standards, in contrast, "provide a regulatory incentive to enhance unit operating efficiency and reduce emissions."[6] We commend EPA for including an output-based standard in the rule. While we appreciate the challenge of obtaining sufficient and reliable data associated with boiler efficiencies, however, we are concerned EPA's calculations often result in efficiencies above 100 percent, which is a physical impossibility. To avoid this problem, we suggest that EPA instead assume industry averages where source-specific data is not available. We also recommend that EPA eliminate outlying or obviously inaccurate data.

Alliance member, Recycled Energy Development (RED) examined the data underlying EPA's estimate of the average efficiency of solid fuel boilers.[7] They found that EPA unrealistically assumes average efficiency of 97.4 percent. This can be attributed to two flaws in EPA's analysis. First, EPA appears to have disregarded feedwater temperature data for the boilers when this data was not provided. Instead, RED engineers factored in the industry average for feedwater temperature (280 degrees F), which caused the average efficiency calculation to drop to a more realistic 82.6 percent. Second, it appears that some facilities reported flawed data to EPA, yielding unreasonably high or low efficiencies. To address this, RED engineers eliminated the non-sensical data (i.e., boilers reporting efficiencies above 90 percent or below 50 percent). This resulted in a more realistic estimate of boiler efficiency (77 percent).

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[5] *See* 40 CFR 63.6 (Authorizing the Administrator or delegated state authority to "grant an extension allowing the source up to 1 additional year to comply with the standard, if such additional period is necessary for the installation of controls").

[6] 76 Fed. Reg. at 15630-31.

[7] Memorandum from Jim Eddinger, US EPA, Jan. 3, 2011, "Development of Alternative Equivalent Output-Based Emission Limits for Boilers and Process Heaters located at Major Source Facilities" (Appendix A).

Our suggestion, therefore, is for EPA to redo its average boiler efficiency factors. First, EPA should assume industry averages where feedwater temperatures are unavailable. Second, we recommend that EPA eliminate outlying and unrealistic data. As noted above, these changes will result in a more realistic efficiency factor, which, in turn will allow boiler owners to better understand the options associated with using output-based standards. These changes will not alter the pollution limits associated with input factors. Yet the output numbers in Tables 1 and 2 will change because of the new conversion factors.

3. EPA Should Clarify that Facilities May Simultaneously Adopt the Alternative Output-Based Compliance Standard and Average Emissions.

As elaborated above, the Alliance for Industrial Efficiency appreciates that the rule includes an output-based limitation option, which provides incentives for undertaking energy efficiency measures, including combined heat and power and waste heat recovery, and that energy efficiency measures undertaken by the regulated entity can be credited toward compliance with the rule.[8] We also note the availability of emissions averaging within the rule.[9]

While we believe both of these provisions are important, they appear to be mutually exclusive. In other words, as written, regulated entities cannot simultaneously opt for output-based limitations and emissions averaging. Section 63.7522 instructs regulated entities that opt for emissions averaging to use formulae for establishing initial compliance (in 63.7522(e)(1) and (2)) and for demonstrating monthly compliance (in 63.7522(f)(1) and (2)) that provide only heat-input-based emissions rates. There are no instructions or alternative formulae in 63.7522 for showing initial and monthly compliance using an output basis. Nor are there any directions in the energy efficiency/conservation crediting section (63.7533) on how to simultaneously opt for output-based emissions limitations and emissions averaging.

We urge EPA to amend the emissions-averaging section (63.7522) and provide other language, as necessary, to allow and give clear direction on how to opt simultaneously for output-based emissions limitations and emissions averaging. Both the emissions-averaging provision and the output-based standard can encourage regulated entities to make substantial energy-efficiency improvements to a number of their boilers. The proposed modification would further incentivize such changes.

4. EPA Should Preserve the Energy Assessment Requirement, but Make this Requirement More Robust By Expanding the Definition of Cost-Effective Energy Efficiency Improvements.

The Alliance is very supportive of the Energy Assessment requirement in the rule. Such a requirement will enable regulated entities to lower compliance costs while reducing emissions of

[8] *See* 76 Fed. Reg. at 15675 (63.7533 Can I use emission credits earned from implementation of energy conservation measures to comply with this subpart?).
[9] 76 Fed Reg. at 15669 (63.7522 Can I use emissions averaging to comply with this subpart?).

hazardous pollutants along with criteria pollutants and greenhouse gases. We are gratified by the broad scope of the Energy Assessment requirement and concur with EPA's finding that its inclusion of all major energy-consuming systems (and not merely the regulated boilers) will have substantial benefits.[10] We do, however, ask EPA to reconsider the definition of "cost effective" in the rule in order to encourage regulated entities to identify more energy-saving opportunities.

The rule presently limits cost-effectiveness to measures that have "a payback (return of investment) period of 2 years or less."[11] This narrow standard excludes some highly cost-effective measures that could generate substantial emissions reductions. As Environmental Defense Fund elaborated in its comments on the proposed rule,[12] the Department of Energy has repeatedly deemed projects with significantly longer payback periods (four to fifteen years) to be economically justified. Notably, EPA has long recognized the environmental and economic benefits of combined heat and power,[13] which often has a payback of five years. Indeed, long-term economic benefits are substantial. Take, for instance, the ArcelorMittal steel facility in East Chicago, Indiana, which reports savings of $100-million annually on its electric bills.[14] The Energy Assessment should also account for complementary legislative policies like tax credits or grants, which could be used to help finance investments, thereby shortening the potential payback period. Unfortunately, these potential benefits would not be identified under the narrow cost-effectiveness standard in the rule.

5. EPA Should Refine Its Engineering Cost Analysis to Account for Savings Identified in the Energy Assessment.

While the rule does not mandate implementation of cost-effective measures identified in the energy assessments, EPA properly notes that facilities are likely to implement many of the identified improvements. EPA acknowledges this likelihood, noting "while we do not know the precise reductions that will occur at individual sources, the record indicates that energy assessments reduce fuel consumption and that parties will implement recommendations from an auditor that they believe are prudent."[15] Despite this recognition, the Engineering Cost Analysis simply accounts for the cost of performing energy audits, without accounting for the potential savings.[16] The Engineering Cost Analysis should be modified to reflect conservative assumptions about potential fuel savings (and associated emissions reductions) that would result from implementing the results of the energy assessment.

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[10] *See*. 76 Fed. Reg. at 15632 ("Including all of the energy using systems in the energy assessment can result in decreased fuel use that results in emission reductions, the result articulated in 112(d)(2).")
[11] 76 Fed. Reg. at 15683 (§ 63.7575 What definitions apply to this subpart?).
[12] Comments of Environmental Defense Fund, Aug. 23, 2010, at 9-11 (http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2002-0058-2869.1).
[13] *See, e.g.*, EPA Combined Heat and Power Partnership website (*http://www.epa.gov/chp/*).
[14] Chris Steiner, "Gray is the New Green," *Forbes*, Sept. 15, 2008 (http://www.forbes.com/forbes/2008/0915/054_2.html).
[15] 76 Fed. Reg. at 15568.
[16] US Environmental Protection Agency, OAQPS, Feb. 2011, "Regulatory Impact Analysis: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters," at 3-3 (Table 3-1) (http://www.epa.gov/ttn/ecas/regdata/RIAs/boilersriafinal110221_psg.pdf).

6. **The Alliance for Industrial Efficiency Supports the DOE-USDA Technical Assistance Program.**

We are extremely gratified to hear of EPA's forthcoming collaboration with the Departments of Energy and Agriculture to help facilities "develop compliance strategies, such as combined heat and power that are cleaner, more energy efficient, and that can have a positive economic return for the plant over time."[17] This kind of technical support is critical to help regulated entities understand and comply with the regulatory process. Moreover, because industrial facilities only replace their boilers every 15 to 20 years, the rule creates a narrow window of opportunity to make substantial improvements to these systems. The Technical Assistance program leverages the rule by enabling facilities to take advantage of this investment point. Our organizations and businesses are eager to lend support to EPA during this process. While we recognize that the Technical Assistance program is not part of the rule, we believe it is a key complementary program. We would be happy to work with the Administration to lend support to this initiative and to alert our networks of the opportunity. We look forward to collaborating with you as this effort moves forward.

Thank you for the opportunity to comment on this important rulemaking. We appreciate EPA's recognition of the economic and environmental benefits of energy efficiency. We believe that combined heat and power and waste heat recovery can play a key role in enhancing manufacturing competitiveness while reducing emissions. The Industrial Boiler MACT includes several provisions that can encourage investments in these clean energy sources. We urge EPA to reconsider the rule, however, to strengthen these provisions and create even greater opportunities for combined heat and power and waste heat recovery.

Sincerely,

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Jessica Bridges
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On behalf of
Avalon Consulting
Cummins Power Generation
DCO Energy
Enercon Engineering
Energenic
Mechanical Contractors Association of America (MCAA)

[17] US EPA, Fact Sheet: "EPA Boiler Standards: Department of Energy and Department of Agriculture Technical Assistance for Boiler Operators and Owners (http://www.epa.gov/airquality/combustion/docs/20110221doefs.pdf).

National Electrical Contractors Association (NECA)
Ohio Business Council for a Clean Economy
Recycled Energy Development (RED)
Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)
Texas CHP Initiative
The Association of Union Constructors (TAUC)
Veolia Energy North America

cc:// Gina McCarthy
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