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EPA Docket Center, U.S. EPA
Mail Code 2822T
1200 Pennsylvania Ave. NW.,
Washington, DC 20460
Attn: Docket ID No. EPA-HQ-OAR-2011-0660

Comments on Proposed Rule, Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units

Dear Administrator Jackson:

The U.S. Clean Heat & Power Association (USCHPA) is the voice of combined heat and power in the USA. The organization is a 501(c)(6) trade association whose membership includes manufacturers, suppliers, and developers of combined heat and power (CHP) systems. Currently supplying twelve percent (12%) of U.S. energy capacity, CHP systems can reach efficiencies above eighty percent (80%). There is approximately 82 GW of CHP installed in the U.S. and industry estimates indicate the technical potential for additional CHP at existing sites in the U.S. is approximately 130 GW, plus an additional 10 GW of waste heat recovery CHP.¹

USCHPA has a vested interest in addressing the CHP-specific questions posed by EPA in this docket.² We limit our responses to the following 1) supporting an exemption for CHP facilities; 2) encouraging 100 percent electric *and* 100 percent thermal credit where CHP is not exempt; 3) refining the definition of CHP; 4) supporting the use of net out-put based emissions standards; and 5) increasing the line loss credit for CHP.³ We appreciate the opportunity to comment on these issues.

EPA notes the impetus for the Standard is to mitigate the greenhouse gas (GHG) impacts of fossil fuel-fired power plants, which produce 40 percent of all U.S. anthropogenic CO₂ emissions, or 32 percent of all anthropogenic greenhouse gas (GHG) emissions.⁴ As such, EPA proposes limits on fossil fuel-fired electric utility generating units (EGUs)⁵ greater than 25MW to meet an output-based standard of 1000 pounds of CO₂ per mega-watt hour (lb CO₂/MWh) on

¹ For more information about CHP, see www.uschpa.org. Industry estimate from Bruce Hedman, "CHP: The State of the Market" presented at U.S. EPA Combined Heat and Power Partnership 2011 National Meeting October 5, 2011, Washington, DC.

² Proposed Rule, Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, 77 Fed. Reg. 22392, April 13, 2012.

³ If there is no explicit differentiation, "combined heat and power" and "CHP" should be understood to include waste heat recovery or "bottoming-cycle" CHP.

⁴ 77 Fed. Reg. at 22395, citing Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2009, U.S. Environmental Protection Agency, EPA-430-R-11-005, April 2011.

⁵ 77 Fed. Reg. at 22439. ("Electric utility generating unit or EGU means any steam electric generating unit or stationary combustion turbine that is constructed for the purpose of supplying more than 25MW net-electrical output to any utility power distribution system for sale. Also, any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is considered in determining the electrical energy output capacity of the affected EGU.")

a gross basis.⁶ We appreciate that in pursuit of the Standard, EPA recognizes the efficiency properties and emissions reduction capabilities of CHP. As currently deployed CHP decreases energy use by approximately 1.3 trillion BTUs/year and prevents release of over 35 million metric tons of carbon equivalent into the atmosphere.⁷ In consideration of CHP's potential contribution toward meeting the proposed Standard, EPA poses a number of questions that have direct regulatory impact on certain CHP projects that supply power to the grid.⁸

1. EPA Should Exempt CHP Facilities from the Standard

EPA is considering and requesting comment on whether "...exempting all CHP facilities where useful thermal output accounts for at least 20 percent of the total useful output from this proposed rule would recognize the environmental benefit of CHP and result in additional installations that would otherwise [not] occur." EPA further questions what the impact of doing so would be upon the composition of CHP units. However, EPA also questions whether exempting CHP from the Standard would have the effect of encouraging developers of coal-fired generation to invest in coal-fired CHP as a means of evading regulation under the standard.⁹

Exempting CHP from the Standard will recognize the environmental benefit of CHP and may result in additional installations that would otherwise not occur, particularly in the form of natural gas-fired CHP. As EPA notes, the availability of natural gas resources and stability of natural gas prices means that utilities are likely to rely heavily on natural gas to meet new demand for electricity generation.¹⁰ What is more, Renewable Portfolio Standards (RPS) increasingly are driving investment in natural gas and biomass-fired CHP as alternatives to coal-fired power generation.¹¹ The RPS mandates, coupled with an exemption from the Standard should serve to make CHP a much more attractive investment for owner/operators of new generation sources.

For those same reasons, it is unlikely that an exemption for CHP would drive investment in coal-fired CHP, but EPA is astute to note a potential loophole that could be exercised by developers of coal-fired generation. Nevertheless, EPA notes its own Integrated Planning Model (IPM) projects that for economic reasons natural gas-fired electrical generating units (EGU) will be the facilities of choice until at least 2020.¹² Furthermore, EPA also notes that very little coal-fired generation is planned for the rulemaking period covered citing the 2011 Annual Energy Outlook data that shows the majority of new generation capacity will be either "natural gas-fired or

⁶ 77 Fed. Reg. at 22392.

⁷ See www.uschpa.org.

⁸ Units that generate primarily onsite power are not considered EGUs and thus are not affected by this rule.

⁹ 77 Fed. Reg. at 2243. *Combined Heat and Power*.

¹⁰ 77 Fed. Reg. at 22413. *Levelized Cost of New Generation in the Annual Energy Outlook 2011*

http://205.254.135.24/oiaf/aeo/electricity_generation.html.

¹¹ See http://www.epa.gov/chp/state-policy/renewable_fs.html: Renewable Portfolio Standards Fact Sheet, Figure 3, and http://dsireusa.org/incentives/index.cfm?EE=1&RE=1&SPV=0&ST=0&technology=combined_heat_power&sh=1:

Incentives/Policies for Renewables & Efficiency.

¹² 77 Fed. Reg. at 22394 and 22413. *Few New Coal-fired Plants*. The analysis period for this rulemaking is through 2020.

renewable, with some lesser amounts of nuclear power”.¹³ It is unlikely developers of projects already planned would switch to coal for the purpose of evading the regulation. It should also be noted that coal-fired CHP units would not be exempt from regulation *per se* as other Clean Air Act standards such as the Mercury Air Toxic Standard, where applicable, would limit other GHG emissions as appropriate.

Currently coal-fired CHP makes up less than one percent (1%) of total CHP in the U.S. today. Fully 66 percent of units currently online utilize natural gas as a primary fuel source.¹⁴ Though we recognize this is an average across all types and sizes of CHP, an exemption for CHP is unlikely significantly to alter that ratio.

2. If Not Exempted EPA Should Ensure Full Electric *and* Thermal Credit for CHP Facilities

Nevertheless, if EPA chooses *not* to exempt CHP from the Standard, the agency must ensure 100 percent credit is available for both the electric *and* thermal generation from CHP. As written, the proposed Rule provides credit for only 75 percent of an EGU’s thermal output.¹⁵ Output-based standards benefit CHP because they credit *both* the electric and thermal energy produced by CHP systems. Not recognizing the full value of the thermal energy undermines and distorts the true efficiency profile of a CHP system and as a result weakens the value of output-based standards. Full – 100 percent - thermal credit is crucial to ensuring CHP systems, if not exempt from the Standard, can meet its requirements. In that instance, we also encourage EPA to make the availability of the thermal credit more explicit in the final Rule and provide detailed guidance on the method by which the thermal credit will be calculated.¹⁶

3. EPA Should Refine the Definition of CHP to Include an Efficiency Threshold and to Ensure All Types Are Covered

Whether or not EPA exempts CHP from the Standard, the Agency should refine the definition of CHP to ensure all CHP systems that produce electric and thermal energy (not just “steam”) are covered, and further ensure that waste heat recovery CHP, or bottoming-cycle CHP, is covered under the definition. We encourage EPA to eliminate the word “steam” from the definition in favor of a broader “thermal” definition and include the definition of bottoming-cycle unit as adopted in the Cross-State Air Pollution Rule.¹⁷

¹³77 Fed. Reg at 22413. Levelized Cost of New Generation in the Annual Energy Outlook 2011
http://205.254.135.24/oiaf/aeo/electricity_generation.html.

¹⁴ Bruce Hedman, “CHP: The State of the Market” presented at U.S. EPA Combined Heat and Power Partnership 2011 National Meeting October 5, 2011, Washington, DC.

¹⁵ 77 Fed. Reg. at 22439. *Gross output* means the gross electrical or mechanical output from the unit plus 75 percent of the useful thermal output measured relative to ISO conditions that is not used to generate additional electrical or mechanical output or to enhance the performance of the unit (i.e., steam delivered to an industrial process).

¹⁶ 77 Fed. Reg. at 22440 Current guidance is limited to the vague definition of “Useful thermal output”: “*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 generation or to enhance the performance of the stationary combustion turbine. Thermal output for this subpart means the energy in recovered thermal output measured against the energy in the thermal output at ISO conditions.”).

¹⁷ See 76 Fed. Reg. 48208, at 48433, Aug. 8, 2011, “Final Rule: Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals” (“*Bottoming-cycle unit* means a unit in which the energy input

In addition, USCHPA supports the inclusion of an efficiency threshold for covered CHP systems in keeping with that established in the Internal Revenue Code for the CHP investment tax credit. That standard sets a 20 percent useful thermal output requirement and overall system efficiency minimum of 60 percent.¹⁸

4. EPA Should Utilize Net Output-Based Standards

EPA questions whether the Standard should utilize net or gross output-based emissions standards. USCHPA supports the use of net generation measurements to ensure EGUs implement measures to ensure efficient generation *and* usage of power at new facilities. EPA notes the multiple benefits associated with the utilization of net measurement, including recognizing EGUs for implementing efficient designs and control equipment that require less power, selecting more efficient, less polluting fuels, and installing more efficient process and ancillary equipment.¹⁹ Implementing net output-based standards will encourage owner/operators of new installations to design their facilities with an eye toward maximum efficiency at all levels.

5. EPA Should Increase the Line Loss Credit for CHP

EPA proposes a 5 percent credit for line loss.²⁰ USCHPA is pleased the EPA has recognized the need to credit CHP facilities for line loss; however the proposed amount is insufficient to account for true transmission impacts. USCHPA encourages EPA to expand the line loss credit for affected CHP units at least to meet the national average line loss of 7 percent.²¹

We appreciate the opportunity to comment in this docket and welcome any questions you may have.

Sincerely,



Jessica H. Bridges
Executive Director

to the unit is first used to produce useful thermal energy, where at least some of the reject heat from the useful thermal energy application or process is then used for electricity production").

¹⁸ Internal Revenue Code (IRC) Section 48(c)(3)(A) .

¹⁹ 77 Fed. Reg. at 22431. *Format of the Proposed Standards*.

²⁰ 77 Fed. Reg. at 22420. EPA proposes a 5 percent credit for line loss for facilities where the useful thermal output is at least 20 percent of the total output.

²¹ Annual Energy Outlook 2010, p. 10. <http://www.eia.gov/oiaf/aeo/pdf/0383%282010%29.pdf>. EIA cites average line loss at 6.9 percent.