



The Alliance for Industrial Efficiency

Thank you for the opportunity to testify today on EPA's forthcoming carbon standards for existing power plants. I am speaking on behalf of the Alliance for Industrial Efficiency, a diverse coalition with representatives from the business, environmental, labor and contractor communities. We are committed to enhancing manufacturing competitiveness, reducing emissions, and creating jobs through the use of combined heat and power (CHP) and waste heat to power.

My remarks make four key points:

1. CHP and waste heat to power have substantial emissions and economic benefits and should be encouraged;
2. A system-wide approach to emissions reductions is appropriate;
3. EPA should clarify in its emission guidelines that policies that advance CHP would support an equivalency determination; and
4. States should take steps to encourage CHP and waste heat to power as part of their compliance plans.

As an initial matter, I want to thank EPA for its growing recognition of the role of energy efficiency in clean air compliance. Energy efficiency is the most cost-effective way to reduce emissions. A few years ago, EPA's sensitivity analysis for the Utility MATS rule demonstrated this – finding a modest set of energy-efficiency improvements could lower compliance costs for the rule by \$11 billion by 2020.¹ Yet, energy efficiency needn't be limited to light bulbs and insulation. By producing both heat and power from a single fuel source and capturing otherwise wasted heat to generate additional electricity, CHP and waste heat to power dramatically reduce the fuel needed to produce heat and electricity. And because these facilities combust less fuel, they produce fewer emissions. In fact, EPA estimates that CHP produces only one-half the emissions of the separate generation of heat and power. (see Figure 1) Department of Energy's Oak Ridge National Laboratory projects that full-scale deployment of CHP and waste heat to power would reduce carbon emissions by the equivalent of taking more than half of the current passenger vehicles in the US off the road.²

The Administration is well aware of these benefits. In fact, just last year, the White House announced its commitment to CHP by issuing an Executive Order with a goal of increasing CHP deployment by 40 gigawatts – or fifty percent from today's levels. The Administration explained that this goal would

¹ U.S. Environmental Protection Agency, 76 Fed. Reg. 24976, 25074 (Table 23), May 3, 2011, "National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units."

² Oak Ridge National Laboratory (ORNL), Dec. 1, 2008, *Combined Heat and Power: Effective Energy Solutions for a Sustainable Future*, at 3 (http://www1.eere.energy.gov/industry/distributedenergy/pdfs/chp_report_12-08.pdf).

support capital investments of \$40 to \$80 billion and lower energy use (and associated emissions) by one quad.

While the opportunity for CHP is vast (see Figure 2), many projects are deterred because of high up-front costs and regulatory hurdles. These hurdles won't be overcome by a rule that limits compliance to the four walls of a power plant. Indeed, while some large-scale CHP and waste heat to power projects will be directly covered by the Rule, the vast majority will not.³ Recognizing this, EPA should provide states flexibility to take credit for emission reductions from CHP and waste heat systems at our nation's hospitals, universities and industrial facilities. After all, even if they're not directly covered by the rule, they *are* still connected to central power plants. By slashing energy demand at a steel mill or paper mill, a CHP system reduces that facility's demand from a central power plant. In turn, that power plant can produce less electricity – and fewer emissions.

Such system-wide benefits will only be realized with a system-wide approach to emissions reduction. Opportunities to reduce carbon on site (for example, with carbon capture and storage) are limited and cost prohibitive. To significantly reduce emissions, one needs to look beyond the fence line. Under such a systems approach, utilities would be encouraged to count energy efficiency investments – like CHP – that reduce the demand for power generation.

This systems approach to 111(d) would both allow power plants to find the most cost-effective way to comply with the Clean Air Act and help fulfill the Administration's executive order. In developing its 111(d) rule, EPA should ensure that CHP and WHP are among the options states may consider in developing their state equivalency plans to comply with the rule. States, in turn, should adopt policies that provide credit for CHP and WHP deployment.

Thank you again for the opportunity to testify – and for the agency's ongoing commitment to energy efficiency.

Sincerely,

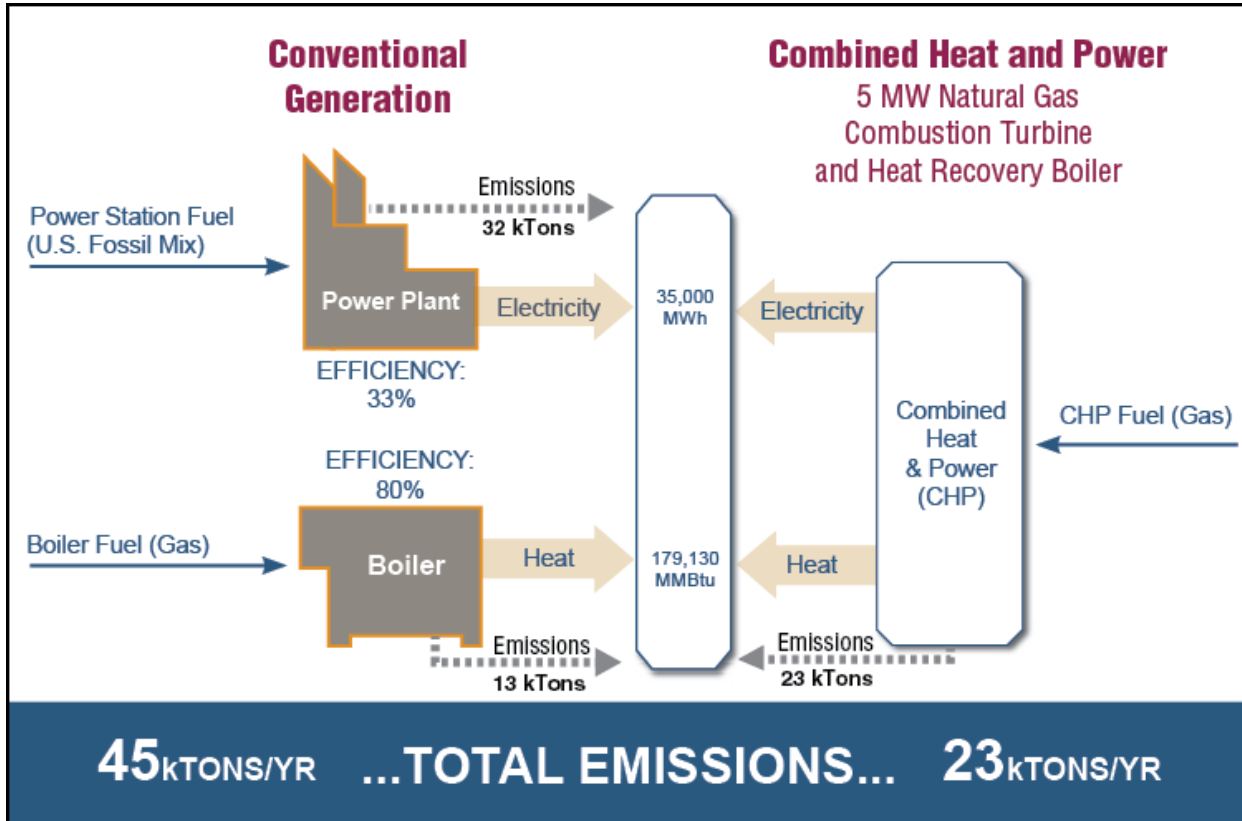


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³ Note that rule is limited to electric generating units that are larger than 25 MW and export more than one-third of their electric output to a power distribution system for sale. see 40 CFR §60.4Da(e)(1) & (2) and Definitions (“*Electric utility combined cycle gas turbine* to include any combined cycle gas turbine used for electric generation that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW net-electrical output to any utility power distribution system for sale. Any steam distribution system that is constructed for the purpose of providing steam to a steam electric generator that would produce electrical power for sale is also considered in determining the electrical energy output capacity of the affected facility.”)

Supporting Graphics

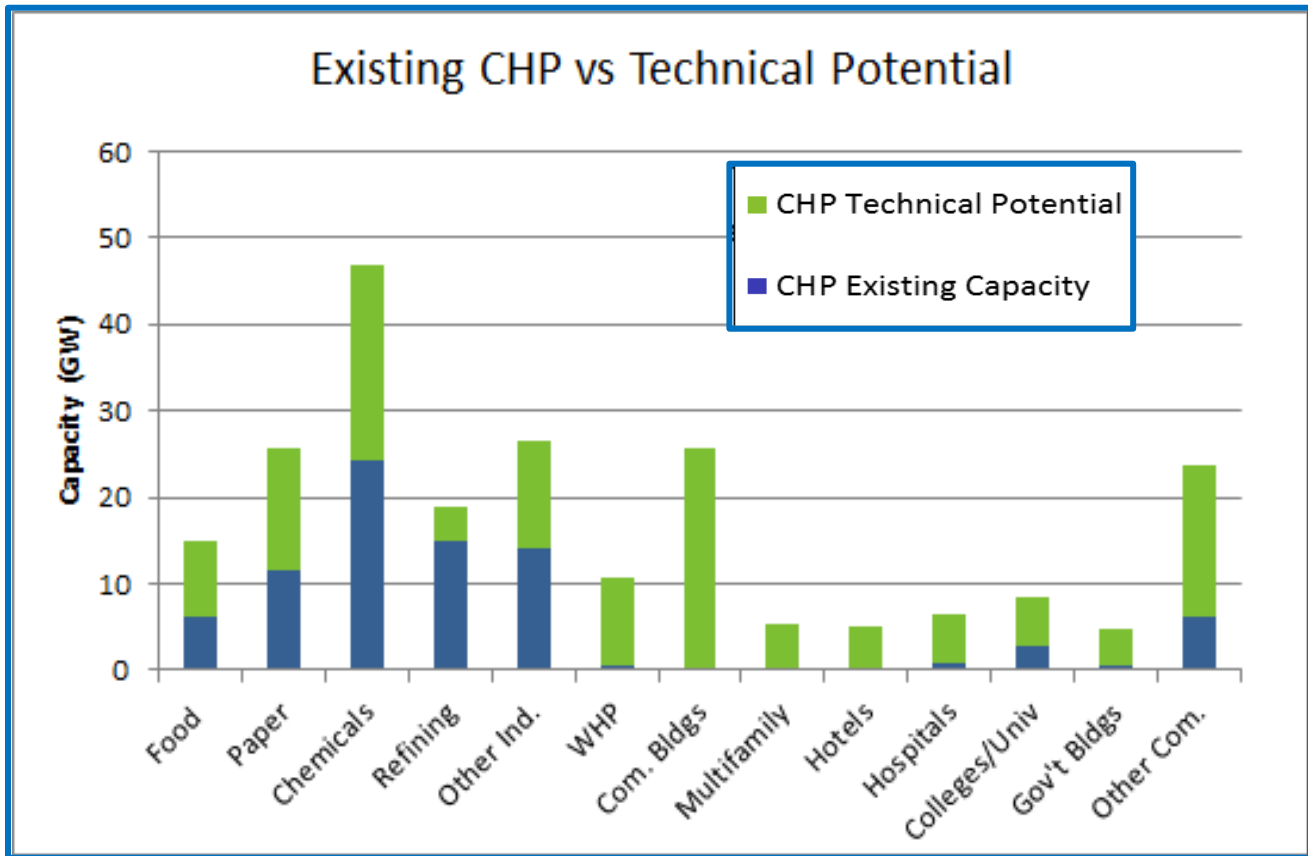
FIGURE 1: CHP PROVIDES SIGNIFICANT EMISSIONS BENEFITS⁴



This diagram illustrates the CO2 emissions output from power and thermal energy generation for two systems: (1) a separate heat and power system with a fossil fuel-fired power plant (emissions based on the US fossil mix) and a natural gas-fired boiler; and (2) a 5 megawatt combustion-turbine CHP system powered by natural gas. The separate heat and power system emits a total of 45,000 tons of CO2 per year (13 kilotons from the boiler and 32 kilotons from the power plant), while the CHP system, with its higher efficiency, emits 23,000 kilotons of CO2 per year.

⁴ EPA, Combined Heat and Power Partnership, Environmental Benefits (visited Oct. 15, 2013) <http://www.epa.gov/chp/basic/environmental.html>

FIGURE 2: REMAINING CHP POTENTIAL IS LARGE⁵



⁵ DOE-EPA, Aug. 2012, , "CHP: A Clean Energy Solution," at 13
http://www1.eere.energy.gov/manufacturing/distributedenergy/pdfs/chp_clean_energy_solution.pdf.