

January 21, 2016

The Honorable Gina McCarthy  
Administrator, United States Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460  
Submitted via [a-and-r-Docket@epa.gov](mailto:a-and-r-Docket@epa.gov)  
Docket: EPA-HQ-OAR-2015-0199

**Comments on Docket EPA-HQ-OAR-2015-0199: EPA's Draft Federal Plan and Model Trading Rule under the Clean Power Plan**

Dear Administrator McCarthy,

The Heat is Power Association (HiP) appreciates the opportunity to comment on the proposed Clean Power Plan (CPP) Model Trading Rules and the proposed Federal Plan. HiP commends the U.S. Environmental Protection Agency (EPA) for including broad flexibility for compliance with the CPP and, in particular, the explicit recognition that waste heat to power (WHP) can be used in state plans to help states meet their CPP targets.

WHP generates electricity from industrial waste heat energy that would otherwise be vented to the atmosphere. It uses no additional fuel, involves no combustion, and produces no incremental emissions in the generation of power.<sup>1</sup> As such, WHP offers public policy benefits equal to or greater than other clean power sources, including renewable energy. WHP can serve as both distributed and base-load power generation, providing customers enhanced reliability and resiliency while improving industrial economics.

We appreciate the acknowledgement by EPA of WHP as a non-emitting resource in the final CPP rule and encourage EPA to incorporate WHP into the model trading rules and federal plan in ways that make it clear and straightforward for states to incorporate WHP in their own plans.

**Industry Overview**

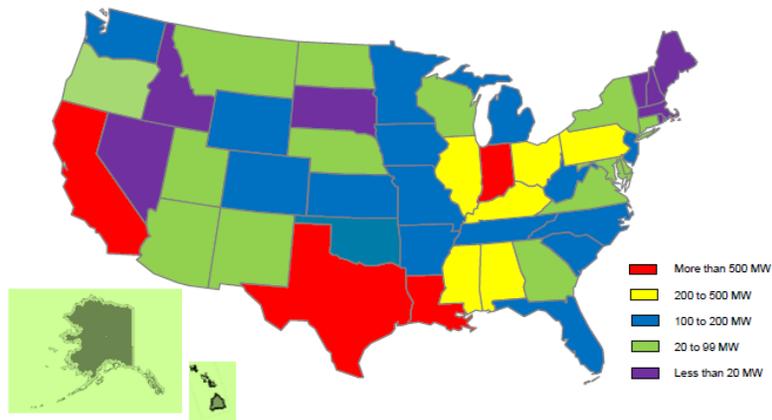
According to the U.S. Department of Energy (DOE), significant quantities of industrial waste heat from essential American industries like cement, iron and steel, aluminum, glass, chemical, petroleum refining, gas pipeline and paper are lost every day. In fact, 20 to 50 percent of the

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<sup>1</sup> Rarely do WHP systems use supplemental fossil fuel firing.

energy used in U.S. industry is lost as waste heat, equating to 5-13 quadrillion BTU/year.<sup>2</sup> In 2015, DOE released the Waste Heat to Power Market Assessment report which states that 15 GW of electricity could be generated by WHP applications in the U.S.<sup>3</sup> Figure 1 shows the technical potential for WHP by state.

Figure 1: WHP Technical Potential by State<sup>4</sup>



The resource is abundant, the power generated produces no emissions, and the technologies to convert waste heat to electricity are readily available and proven. WHP, however, continues to be overlooked and underdeveloped. Explicit mention of WHP as a source of non-emitting power generation that can provide emission reduction credits (ERCs) and tradable allowances in the CPP federal plan and model trading rule would provide states a clear option to use a waste resource produced on site at industrial operations in their state to generate clean energy with zero emissions.

### Public Policy Benefits

Thirty percent of all energy consumed in the U.S. is consumed by industry, and, as mentioned above, 20 to 50 percent of this energy is lost as waste heat. Industrials who typically purchase power from local utilities, with associated emissions and at significant expense, could instead install WHP technologies that would enable those same companies to generate their own power without emissions from a resource they already own, reducing their operating costs as well as their greenhouse gas (GHG) footprints, and contributing to the state's CPP emissions targets. As an alternative to using the power onsite, industrials could sell the power back to the grid and create a new stream of revenue while reducing the demand from more polluting power plants.

<sup>2</sup> Waste Heat Recovery: Technology and Opportunity in U.S. Industry, Report for US DOE, BCS, 2008

<sup>3</sup> Waste Heat to Power Market Assessment, ICF for ORNL, March 2015

<sup>4</sup> Ibid

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The final rule recognizes WHP for its environmental, economic, and reliability benefits and lists WHP as a technology that states can use to help meet their emissions targets. EPA should therefore include WHP in the federal plan and model trading rule to make it simple and straightforward for states to understand and incorporate WHP into their CPP compliance plans. By including WHP in the federal plan and model trading rule, EPA will signal to states that they should likewise encourage greater deployment of WHP technologies.

WHP systems can be engineered for a variety of sizes and can use a wide spectrum of waste heat streams and temperatures, many generated in American industry 24 hours a day, seven days a week, all year long. Because WHP systems produce electricity at the point of use, the losses associated with transmission and distribution (T&D) can be eliminated. This reduces energy use and defers or eliminates the need for costly new T&D investment. As EPA recognizes in the preamble to the final rule, “[t]he opportunity for improvement is large because, on average, line losses account for approximately seven percent of all electricity generation.”<sup>5</sup> Moreover, WHP systems that can operate independent of the grid can continue to provide electricity during extreme weather events which may compromise the grid. They can also be sited to relieve grid congestion, further enhancing reliability.

Sixteen states have legislative and regulatory policies that treat waste heat as a renewable resource or WHP as a renewable power generating technology. It should be made clear by EPA that these states should be able to use WHP projects to meet their CPP goals. And because the EPA defines WHP as non-emitting in the rule, other states should be permitted and encouraged to use WHP to meet their goals as well. Permitting states to generate ERCs for WHP systems in a rate-based plan or grant allowances for WHP systems in a mass-based plan is an effective way to meet state targets while improving industrial efficiency.

### **WHP in the Proposed Rate-Based Federal Plan and Model Trading Rule**

Because WHP systems generate electricity without producing incremental emissions, HiP supports EPA’s proposal that WHP units be eligible to generate ERCs in the rate-based model trading rule.<sup>6</sup> In addition, HiP strongly supports incorporating non-affected WHP units into the rate-based federal plan that EPA will administer for states without plans and that states will use to guide the development of their own plans. The proposed rule states that “the incremental electric generation output from the WHP units could be considered non-emitting, for the purposes of meeting the EGs, and the MWh of electrical output could be used to adjust the CO<sub>2</sub> emission rate of an affected EGU.”<sup>7</sup> Please note: WHP units rarely use supplemental firing by fossil fuel; however, in cases where they do, we agree the ERCs should be prorated.

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<sup>5</sup> 80 Fed. Reg. 64662, at 64757

<sup>6</sup> 80 Fed. Reg. 64966, at 64996

<sup>7</sup> 80 Fed. Reg. 64966, at 64997

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## **WHP in the Proposed Mass-Based Federal Plan and Model Trading Rule**

Under a mass-based approach, WHP projects implemented independently of state and utility programs could receive no credit toward state targets. Therefore, such projects should be encouraged through an allowance distribution approach. EPA has requested comment on whether allowances should be granted to non-renewable projects.<sup>8</sup> HiP strongly supports EPA's inclusion of a direct allocation mechanism in the federal plan and model trading rule that allocates allowances to new WHP projects or a separate set-aside of allowances for WHP projects.

Similar to use of WHP in the rate-based model trading rule and federal plan, WHP units will contribute valuable electricity without associated emissions in the mass-based model trading rule and federal plan. WHP systems should be specifically included in the mass-based federal plan and model trading rule as non-emitting electric power generation units that should be provided allowance set-asides.

## **WHP in the Clean Energy Incentive Program**

We support EPA's development of the Clean Energy Incentive Program (CEIP) as an approach to encourage early action to reduce greenhouse gas emissions. WHP systems, as alternatives to power resources that have emissions, provide substantial environmental and health benefits that would be particularly meaningful in low-income communities. In addition, utilizing WHP systems in manufacturing facilities could create and preserve jobs in low-income communities while reducing greenhouse gas emissions. We recommend that EPA expressly state that WHP projects in low-income communities are eligible for participation in the CEIP. Greater deployment of WHP will help low-income communities realize environmental, health and economic benefits.

## **Summary**

In summary, we commend EPA for recognizing the benefits of non-emitting WHP and for including provisions to permit and encourage WHP as a compliance option in the CPP. Specifically, we request that EPA make it clear in the federal plan and model trading rule that:

- WHP is not only an acceptable but also a recommended option in both mass-based and rate-based plans.
- WHP is a source of non-emitting power generation that can provide ERCs and be granted tradable allowances.
- WHP projects can provide ERCs in the rate-based federal plan and model trading rule.
- Allocation of allowances to new WHP projects or a separate set-aside of allowances for WHP projects should be made available in the mass-based federal plan and model trading rule.

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<sup>8</sup> 80 Fed. Reg. 64966, at 65022

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- WHP projects in low-income communities are eligible for participation in the CEIP. Greater deployment of WHP will help low-income communities realize environmental, health and economic benefits.

### **The Heat is Power Association**

The Heat is Power Association (HiP) is an industry-led advocacy organization focused exclusively on advancing WHP ([www.heatispower.org](http://www.heatispower.org)). Established in 2011, members include WHP technology manufacturers, project developers, packagers, industrial end users, component manufacturers, research institutions, and other industry associations and stakeholders.

HiP is active with federal, state, and regional policymakers and stakeholders. Through education and advocacy, the association seeks inclusion of WHP in federal and state legislation, regulations, and programs designed to promote clean, efficient power resources.

Sincerely,



Susan Brodie  
Executive Director