

February 20, 2013

Rep. Henry Waxman
Co-Chair, Bicameral Task Force on Climate Change
2204 Rayburn House Office Building
Washington, DC 20515

Senator Sheldon Whitehouse
Co-Chair, Bicameral Task Force on Climate Change
Hart Senate Office Bldg. Room 717
Washington, DC, 20510
Bicameral Task Force on Climate Change

Re: Bicameral Task Force on Climate Change request for input regarding emissions reductions and climate change

Dear Representative Waxman and Senator Whitehouse,

The Heat is Power Association is pleased to respond to your letter of January 31, 2013 requesting ideas and actions the federal government can take to address climate change. The Heat is Power Association is the trade association for the Waste Heat to Power industry. Our members range in size from large manufacturers including GE and Pratt & Whitney Power Systems to smaller technology developers and manufacturers, project developers, component suppliers, and industrial end users throughout the United States.

Waste heat to power (WHP) installations capture the heat generated as a by-product from industrial processes and convert that heat into electricity through a process that does not involve burning any additional fuels or emitting any additional pollution or greenhouse gases. The process to convert industrial waste heat to power is identical to the process used to convert geothermal energy to electricity; both processes use the same technologies and produce the same emission-free electricity as other renewable resources from a heat source. Whereas geothermal resources occur naturally in the ground, waste heat from industries occurs at sites across the country and can provide base load emission-free power for use onsite to improve efficiency or be sold to the grid.

Waste heat to power encompasses a suite of technologies and applications that can improve industrial energy efficiency and reduce emissions of heat-trapping pollution anywhere heat is vented or wasted. Cement, oil and gas, paper and steel are good examples of energy intensive industries where waste heat to power applications have been successful. Although some waste heat recovery (WHR) applications are considered a type of CHP, many waste heat to power applications are not, as they do not involve the simultaneous generation of heat and electricity from a single fuel source, a distinction that is important because it precludes WHP from receiving the same tax treatment as CHP.

Regarding the questions you ask in your letter:

What Legislation would you recommend Congress enact to strengthen the ability of federal agencies to prevent and respond to the effect of climate change?

Provide the investment tax credit for WHP. Currently, WHP does not qualify for any production or investment tax credit (PTC/ITC) under sections 45 or 48 of the US Tax Code (whereas traditional CHP does). We believe a 30% ITC as is available to other emission-free renewable resources would encourage WHP installments and help move us toward our clean energy and industrial efficiency goals.

Make master limited partnerships (MLP) available to WHP. Currently, master limited partnerships do not include WHP. Proposed legislation would expand MLPs to include certain technologies in Sections 45 or 48 of the U.S. tax code; however, since WHP is not currently in section 45 or 48, it would not qualify under the proposed MLP legislation as written today. Allowing WHP and other distributed generation resources to take advantage of master limited partnership structures would enhance the attractiveness of WHP for investors and industrial waste heat producers. Qualifying WHP under the ITC or PTC could be another avenue to allow WHP to take advantage of MLP legislation under consideration.

Explicitly require or incent waste heat to power in federal legislation, including any federal Clean Energy Standard or Renewable Electricity Standard. A number of states provide special incentives for WHP in their Renewable Portfolio Standards (RPS) and Energy Efficiency Resource Standards (EERS), equating WHP to renewables given that the electricity WHP produces is emission-free¹. WHP could be included in federal portfolio standards, grants, energy loans, or other energy programs as well. Ohio SB 315 is a good model for writing WHP into renewable energy standards legislation.

What actions or policies could government agencies adopt, using existing authorities, to reduce emissions of heat-trapping pollution?

Recognize WHP's potential in industrial energy efficiency. The President's Executive Order Accelerating Investment in Industrial Energy Efficiency (August 30, 2012) calls for deploying 40 gigawatts of new, cost effective industrial combined heat and power (CHP) by 2020. A similar target for WHP would encourage additional industrial energy efficiency by a group of technologies that, although related to CHP, do not typically qualify as CHP in legislation and regulations. DOE and EPA should specifically emphasize WHP applications in their programs as well. Currently, the agencies call WHP a type of CHP, but as stated above, since WHP does not receive any of the regulatory incentives or benefits of CHP, it is not treated like CHP in the marketplace, and therefore its potential contribution to industrial energy efficiency often gets overlooked.

¹ A review of the 14 state programs that include waste heat in their RPS or EERS refer to it as waste heat recovery, waste energy recovery, recycled energy, industrial cogeneration, bottoming cycle CHP, a qualified energy recovery process, waste gas and waste heat capture, a resource that makes efficient use of waste heat, and industrial by-product technologies.

Fund the Waste Heat Registry. The Energy Independence and Security Act of 2007 (EISA) included a requirement for the United States Environmental Protection Agency to develop a Waste Heat Registry that would help industrials and technology providers identify opportunities for potential projects. This existing requirement never saw any funding and was abandoned by EPA, although it is still greatly needed to help develop the industry.

Require the Federal Government to include waste heat to power in RFPs for alternative, clean or emission-free energy, particularly in DOD programs. In 2012, the U.S. Army, acting through its Engineering & Support Center in Huntsville, Alabama, issued a RFP for renewable energy vendor qualifications. This RFP solicited vendor qualifications for procurement of up to \$7 billion in renewable and alternative energy supplies under long-term power sale arrangements. The solicitation included alternative energy but waste heat to power did not qualify. While the federal government may not control many industrial facilities, it never the less does have some waste heat producing operations that could be used to generate emission-free electricity.

Address barriers to entry for WHP technologies and projects. FERC should promote markets for WHP by eliminating unfair and unwarranted costs and delays associated with interconnection, standby power and access to the grid.

A fact sheet about waste heat to power and The Heat is Power Association as well as a Resolution Supporting Waste Heat to Power passed by NARUC earlier this month are attached to this letter for your information.

We thank you again for the opportunity to provide input and stand ready to provide additional detail regarding any of these points if and when there are additional opportunities to do so.

Sincerely,



Kelsey Southerland
Executive Director
The Heat is Power Association
Kelsey@heatispower.org

The Heat is Power Association is the trade association of the Waste Heat to Power (WHP) industry. The not-for-profit organization is committed to educating decision makers and the public about the characteristics of waste heat to power as a source for emission-free electricity and an economic driver for global competitiveness. The Heat is Power Association promotes the efficient, industrial use of emission-free electricity generated through WHP processes.

To learn more, visit www.heatispower.org.

What is Waste Heat?

Anywhere there is an industrial process that involves transforming raw materials into useful products – steel mills, paper plants, refineries, chemical plants, oil and gas pipelines, and general manufacturing -- heat is generated as a byproduct. This byproduct or waste heat is often produced 24 hours a day, seven days a week, 365 days a year.

What is Waste Heat to Power?

Waste Heat to Power (WHP) is the process of using recovered waste heat to generate electricity using a variety of proven and readily available technologies. One recent analysis by the Environmental Protection Agency¹ estimates that the waste heat produced by American industry could generate 10 GW emission-free electricity annually, enough to power 10 million American homes, produce \$3 billion in savings for industry, and create 160,000 new American jobs.

Technologies that Transform Waste Heat to Power

Waste Heat to Power systems use the same technologies as geothermal and solar thermal energy systems to capture heat at the source and convert it into electricity. No combustion. No emissions.

Waste heat to power isn't new, yet it is often overlooked as an industrial energy option. Steam turbine technology has been used for WHP systems since the 1970's. More recently, technologies based on the Organic Rankine Cycle, Kalina Cycle, and the Sterling Engine, proven in the geothermal and solar thermal industries, are being used to capture waste heat at lower temperatures and at smaller scales than the more traditional steam cycles used in the power industry. Thermoelectrics, high pressure CO₂ working fluids and other new developments are creating additional opportunities for waste heat to be economically converted into useful power. Through the application of these technologies, industrial waste heat is no longer just a byproduct – it is source for emission-free electricity, just like traditional renewables.

Why Waste Heat to Power Development is Lagging Traditional Renewable Sources

Although the resource is abundant and the technology is readily available and proven, emission-free Waste Heat to Power continues to be overlooked and underdeveloped.

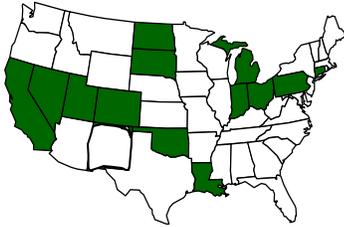
Government and regulatory support for other forms of emission-free electricity such as wind and solar has diverted investment away from WHP. Since the 2006 inclusion of an investment tax credit for solar power in the US tax code, annual solar installation has grow by over 1,600 percent, a compound annual growth rate of 76 percent². Given equal tax treatment, industrial waste heat could provide enough emission-free

“When you're talking about waste heat, every business, every industry, is generating some sort of energy byproduct, some sort of heat; it's going up in smoke stacks and nobody is using it. And the question is, can we capture that energy and use it in a smart way?”

--President Barack Obama

¹ EPA Waste Heat to Power Systems Paper: http://www.epa.gov/chp/documents/waste_heat_power.pdf

² Solar Energy Industries Association: <http://www.seia.org/policy/finance-tax/solar-investment-tax-credit>



States with policies favorable for WHP

electricity to power 10 million American homes, provide hundreds of thousands of new American jobs, and support critical US manufacturing industries. Fourteen states -- CA, CO, CT, IL, IN, LA, MI, NV, ND, OH, OK, SD, UT, and WV -- provide incentives to develop Waste Heat to Power resources, incentives WHP needs if it is to compete in the marketplace with traditional resources such as low priced coal and natural gas and subsidized renewables which, like Waste Heat to Power, generate emission-free electricity.

What The Heat is Power Association is Doing to Gain Recognition for Waste Heat as a Clean, Emission-Free Resource

The Heat is Power Association advocates for federal, state and local recognition of Waste Heat to Power as a reliable, abundant and emission-free source of electricity. Our efforts include educating policy makers, regulators, and energy and environmental stakeholders about the barriers to deployment of WHP technologies and advocating for fair and equivalent treatment of WHP. Our interests in policy development include eliminating barriers such as interconnection challenges to WHP deployment, gaining inclusion of WHP as an emission-free resource in state and federal clean energy programs such as renewable portfolio and energy efficiency standards, and obtaining equivalent tax treatment for WHP on the state and federal levels with other sources of emission-free electricity.

America's Responsible Energy Future

Waste Heat to Power could provide the energy equivalent of over 60,000,000 barrels of oil annually. We cannot continue to ignore this ready, proven resource that supports American jobs, key industries, and the environment. As Congress and state legislatures debate our energy future, Waste Heat to Power as an emission-free and energy efficiency resource must be part of the picture.

Who is The Heat is Power Association?

The Heat is Power Association is the trade association of the waste heat to power industry. A not-for-profit organization, Heat is Power is committed to educating decisions makers and the public about the characteristics of waste heat to power as a source for electricity and an economic driver for global competitiveness. The Heat is Power Association promotes the efficient, industrial use of emission-free electricity generated through waste heat to power processes. Our members include WHP technology manufacturers, packagers, project developers, industrial end users, component manufacturers, research institutions, and other industry associations and WHP stakeholders.

To learn more about Waste Heat to Power and The Heat is Power Association visit heatispower.org or email susan@heatispower.org.

ERE-1 Resolution Supporting the Inclusion of Waste-Heat-to-Power Technologies in State and Federal Clean Energy Policies and Programs

**Sponsored by the Committee on Energy Resources & the Environment
Adopted by the NARUC Board of Directors February 6, 2013**

WHEREAS, Waste-Heat-to-Power is the process of capturing heat discarded by an existing energy conversion process and using that heat to generate power; and

WHEREAS, Waste-Heat-to-Power generates power with no new fuel and without combustion or related emissions; and

WHEREAS, Energy-intensive industrial processes – such as those occurring at refineries, steel mills, glass furnaces, pipeline pump and compressor stations, and cement kilns – all release hot exhaust gases and waste streams that can be harnessed with well-established technologies to generate electricity; and

WHEREAS, Opportunities exist for cost-effective applications of Waste-Heat-to-Power technologies in commercial and institutional energy systems; and

WHEREAS, The recovery of industrial waste heat for power is a largely untapped type of Combined Heat and Power (CHP), which is the use of a single fuel source to generate both thermal energy (heating or cooling) and electricity; and

WHEREAS, Waste-Heat-to-Power is a form of distributed generation that provides environmental and economic benefits; and

WHEREAS, Waste-Heat-to-Power is similar to CHP in that it can help industrial energy consumers to use most efficiently fuels consumed onsite to deliver energy; and

WHEREAS, On August 30, 2012, President Obama signed an Executive Order to accelerate investments in industrial energy efficiency, calling for 40 GW of new Energy Efficiency and CHP by 2020, including Waste Heat to Power; and

WHEREAS, In support of the Executive Order, the Department of Energy (DOE) and Environmental Protection Agency (EPA) released a new report: Combined-Heat-and-Power: a Clean Energy Solution that provides a foundation for national discussions on effective ways to achieve 40 GW of new, cost-effective CHP, including Waste-Heat-to-Power, by 2020; and

WHEREAS, Accelerating investment in industrial energy efficiency in an efficient and cost-effective manner benefits manufacturers, utilities, and consumers and can improve American manufacturing competitiveness and create jobs while improving the nation's energy system and reducing harmful emissions; and

WHEREAS, Waste-Heat-to-Power has been omitted from some clean energy policies, including the federal investment tax credit, many State renewable and clean energy portfolio standards, energy efficiency resource standards, and various utility rebate programs and investments; and

WHEREAS, Fourteen States have recognized Waste-Heat-to-Power technology for inclusion in their State renewable and clean energy portfolio standards and/or energy efficiency resource standards; now, therefore be it

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners convened at its 2013 Winter Committee Meetings in Washington, D.C., is committed to working with the Waste-Heat-to-Power, Combined-Heat-and-Power, utilities and the broader energy efficiency community to help ensure that Waste-Heat-to-Power technologies are included in discussions on energy efficiency, distributed generation and clean energy technologies and are considered in the development of policies to allow for the more rapid adoption of waste heat-to-energy technologies, including explicit eligibility of Waste-Heat-To-Power in State energy efficiency resource standards and for consideration in State renewable and clean energy portfolio standards.

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