

The Heat is Power Association Annual Meeting 2014



John Prunkl, Chair

WELCOME



Overview

- Welcome
- Introductions
- The Heat is Power Association
- State of the Industry
- Policy & Advocacy
- Communications
- Financials
- Board Election
- Roundtable and Strategy Discussion



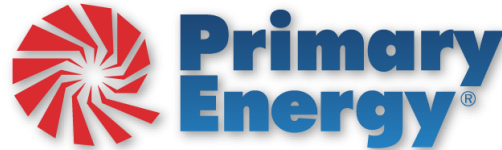
Who is Heat is Power



Heat is Power Members

represent a variety of WHP stakeholders

Project Developers



Technology Developers



Research Institutions



Component Manufacturers



Not-for-profit Partners



HiP Leadership

- John Prunkl, Chair and Treasurer
 - Primary Energy Recycling Corporation
- Ray Deyoe, Participant Member Representative to Board of Directors
 - Integral Power, LLC
- Susan Brodie, Executive Director
- Tobyn Anderson, Federal Government Relations Advisor



The Heat is Power Association

The only industry-led advocacy organization focused exclusively on advancing waste heat to power

Active with federal, state and regional stakeholders including

- Congress
- Federal agencies including U.S. EPA and U.S. DOE
- NARUC
- Regional industry and environmental organizations

Through education and advocacy we work to get WHP included as an emission-free, energy efficient power resource in legislation, regulations and programs.



HiP Focus 2014

- Advocacy
 - Work to get WHP included in federal legislation
 - Be responsive to DOE, EPA, and DOD requests
 - Track state support for WHP
 - Coordinate efforts with members through monthly Advocacy & Policy Committee calls and additional communications as needed
- Outreach & Education
 - Develop additional project profiles in various industries to educate about WHP
 - Evaluate ways to use the not-yet-released DOE waste heat resources study
 - Collaborate with others who focus on energy efficiency and CHP to incorporate our WHP message into their materials



HiP Focus 2014 cont'd

- Communications
 - Continue to refine messaging as needed
 - Keep stakeholders informed through website, newsletters, eblasts
 - Post HiP work products to website and social media
- Membership Recruiting / Finances
 - Actively recruit new members
 - Engage current members in recruiting efforts
 - Explore additional funding opportunities
- Administration
 - Maintain HiP books
 - Manage federal and DC reporting requirement



Major HiP Milestones

- Significant progress on multiple priority initiatives (detail in subsequent sections) including:
 - WHP written into three federal bills, tax extender amendments, Master Limited Partnership Parity Act
 - Multiple HiP member meetings with Members of Congress
 - Invited to review and comment on DOE's draft WHP market assessment report; awaiting publication end 2014
 - Invited to participate in Barriers to Industrial Energy Efficiency stakeholder process; provided feedback on process and treatment of WHP by DOE; awaiting publication end 2014
 - Released white paper cataloging WHP inclusion in 18 state RPS & EERS
 - Proposals to gain additional funding outstanding



State of the Industry



WHP Opportunity

Industry consumes
30%
of all US energy



20% to 30% of this energy is lost
as waste heat ~ 5-13 quadrillion BTU/yr
which translates to \$20B-\$60B/year

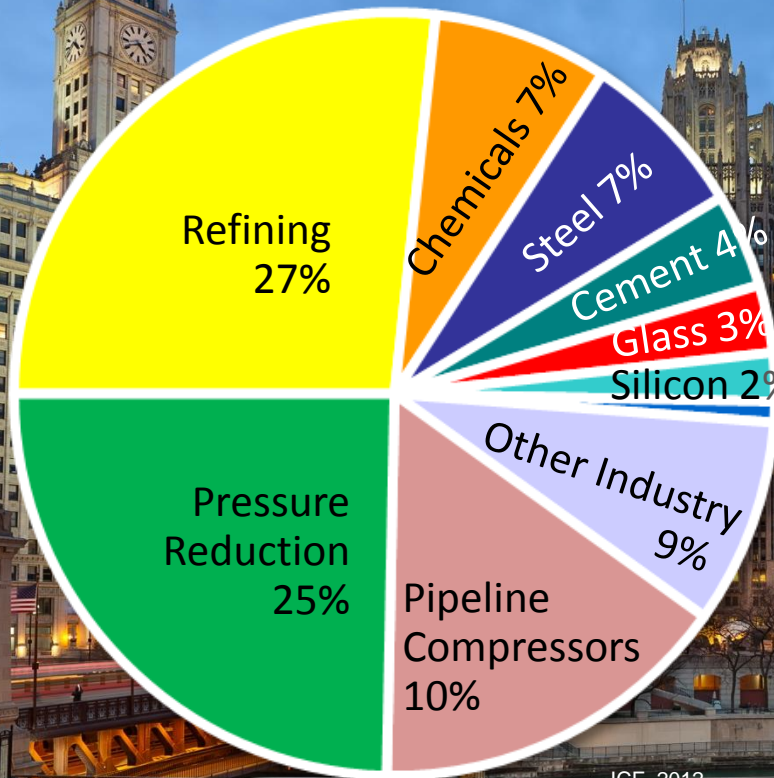
- **40%** is at higher temperatures (above 450°F) and can be converted to electricity using commercially available technologies for an estimated 7-10 GW
- **60%** is at lower temperatures and can be converted to electricity using some commercially available and numerous emerging technologies

source: Waste Heat Recovery: Technology and Opportunity
in US Industry, Report for US DOE, BCS, 2008



WHP Opportunity

There are enough WHP opportunities to power Chicago



ICF, 2012



States with Greatest WHP Potential



- Industrial energy usage by state
- Top third of US industrial energy usage
 - Second third of US industrial energy usage

Based on industrial energy usage by state (EIA: Energy Consumption2012). Awaiting DOE estimate of WHP potential by state in their upcoming waste heat to power market assessment report.



WHP is a Named Energy Resource in 18 State RPSs & EERSs



WHP qualifies as renewable or efficiency in 18 states, either in the state's RPS, goal, pilot program; SGIP; or EERS

- Renewable Portfolio Standard (29 states + DC)
- Renewable Portfolio Goal, Voluntary Standard, or Pilot (10 states)
- WHP included in state's standard or goal



Tobyn Anderson, Federal Government Affairs Adviser

ADVOCACY COMMITTEE UPDATE



Policy Priorities

- Recognition of WHP as an emission-free resource/renewable equivalent in federal and state policies and programs
 - Within US Tax Code
 - In new federal and state legislation
 - In grant and loan programs
- Address barriers to the deployment of WHP technologies and projects
 - Promote role of WHP in various markets
 - Eliminate unfair and unwarranted costs and delays associated with interconnection, standby power and access to the grid
 - Educate policy makers and stakeholders about how WHP can address energy, environmental and economic goals while improving industrial competitiveness
- Address misunderstandings regarding WHP as a simple subset of CHP



Committee Objectives

- Educate policy makers, regulators, and energy and environmental stakeholders about the barriers to deployment of WHP technologies
- Reach out to Congress and other stakeholders to include WHP in federal tax, energy and environmental legislation
- Work with federal agencies including DOE, EPA, FERC, and USDA to promote WHP as a reliable, abundant and emission-free source of electricity
- Collaborate with others in the industrial energy efficiency space to educate about WHP, improve the profile for WHP, and develop opportunities for WHP in legislation
- Track WHP legislation and regulation in states



Barriers to Waste Heat to Power

- **Barrier:** Legislation and regulations that provide incentives for certain fuel-free, emission-free power generating sources (eg., geothermal, wind, solar) but not for others (eg., WHP)
 - **HiP's Approach:** Educate Congress re. emission-free WHP, assist in introducing pro-WHP legislation, help build support for proposed WHP legislation
- **Barrier:** Legislation worded such that it omits WHP from opportunities although some assume it's included under CHP (eg., ITC in §48 of the US tax code)
 - **HiP's Approach:** Educate Congress and agencies about the differences between CHP and WHP; provide wording to clarify distinctions where possible
- **Barrier:** Agencies that manage WHP under existing programs for fuel-fired efficiency resources, rather than fuel-free, emission-free power generation sources
 - **HiP's Approach:** Educate DOE and EPA about the differences between CHP and WHP in practice, states' views of WHP as renewable, opportunities for WHP to contribute to industrial energy efficiency and emissions reduction goals



Congressional Support for WHP

Our efforts have led to the inclusion of WHP in a number of pending bills

- Three bills would establish a 30% investment tax credit for WHP property
 - HR 4916 - the Power Efficiency and Resiliency “POWER” Act introduced June 19, 2014 (1 sponsor, 18 bipartisan co-sponsors)
 - S. 2189 - the Energy Efficiency Tax Incentives Act introduced April 1, 2014
 - HR 2972 - The Heat is Power Act introduced Aug. 1, 2013
 - In addition, Sen. Carper (D-DE) may offer amendment to Tax Extenders legislation providing a 30% ITC for WHP
- The Master Limited Partnership Parity Act would extend the publicly traded partnership ownership structure to energy power generation projects, transportation fuels, and related energy activities, including WHP
 - S. 795 - Introduced Apr. 24, 2013 (6 bipartisan sponsors)
 - HR 1696 - Introduced Apr. 24, 2013 (companion bill, 1 sponsor, 68 co-sponsors)
- LESRA would offer loan guarantees and technical assistance for energy projects including WHP
 - S. 1205 – Local Energy Supply and Resiliency Act (LESRA) introduced June 20, 2013



HiP Influence

- HiP members met with fourteen Congressional Offices in two days to discuss WHP in tax code, tax extenders, pending legislation (collaboration with Pew)
- HiP Board members met with DOE AMO staff to educate about WHP opportunities and barriers
- HiP Board members met with additional Congressional Offices to reinforce WHP message
- HiP Government Affairs Advisor meets regularly with offices to help craft WHP language and provide support for bills
- HiP Board, advocacy & policy committee, technical advisory committee, executive director, government affairs advisor, and technical & policy advisor all focus on improving the market for WHP and addressing market barriers



Letters, Statements and Comments



- Provided comments in support of Senate Finance Committee's Energy Tax Reform draft
 - support simplification, technological neutrality and cost effectiveness
 - endorse Committee's proposal for more rational, targeted, and simple energy incentives to increase energy security and ensure a clean and healthful environment for future generations
- Wrote letters to Senate Finance Committee members urging them to include WHP in the §48 ITC
- Encouraged HiP members and other stakeholders to write their elected representatives letters of support for the POWER Act.
- Signed letter urging IN Gov. Mike Pence to veto S.B. 340 which would greatly diminish Indiana's energy efficiency efforts, increase energy costs, eliminate some energy efficiency related jobs, and reduce economic investment in the state



Promoting WHP with Federal Agencies

DOE

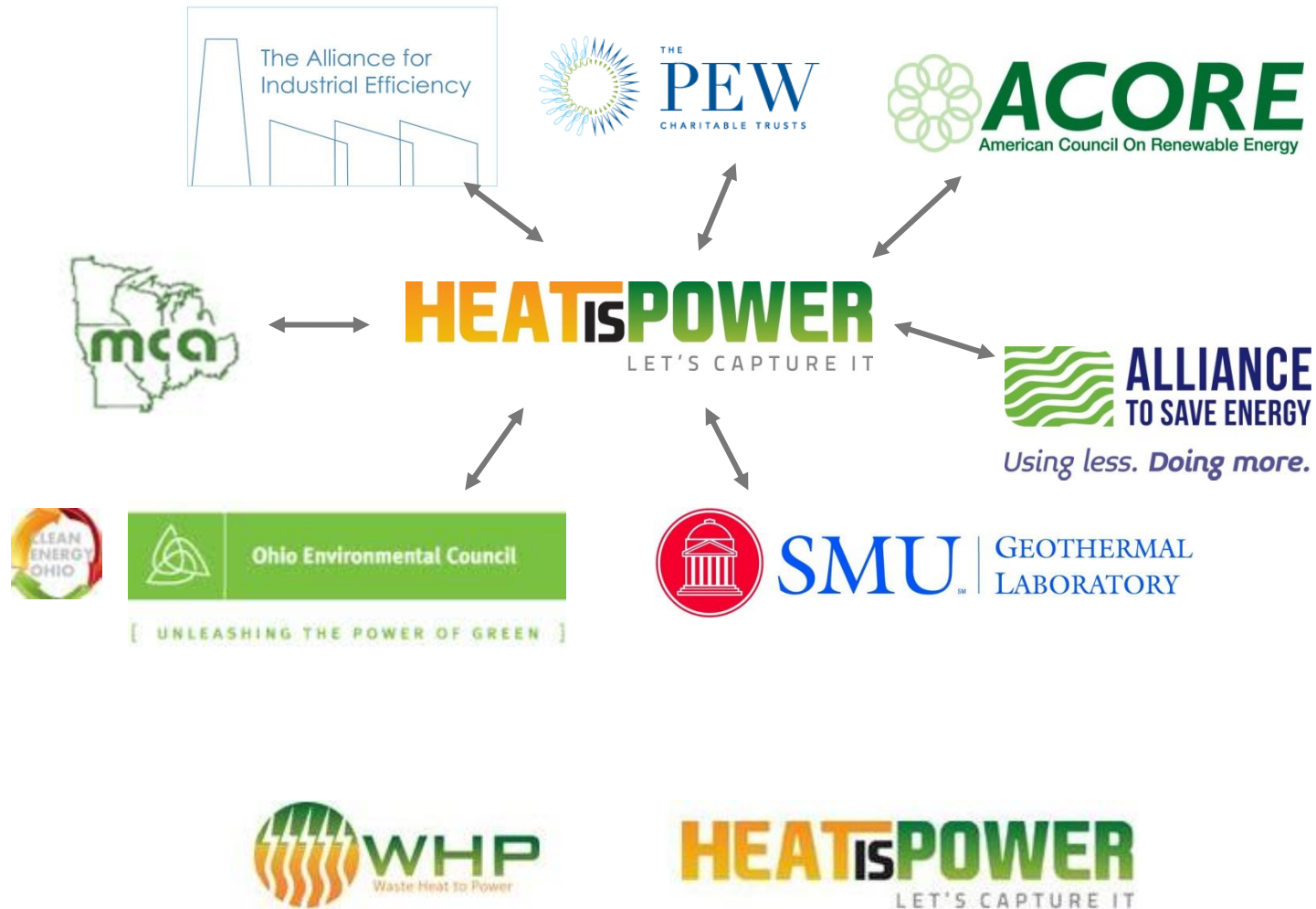
- Participated as a stakeholder in the Barriers to Industrial Energy Efficiency study and report; report expected end of 2014
 - Uncertain how or if our comments will be incorporated
- Reviewed ORNL/DOE Waste Heat to Power Market Assessment; originally due to be published year end 2013, now slated for year end 2014
 - Draft addressed waste heat sources over 500°F and greater than 100 kW; scope expanded after HiP review to include all temperatures of waste heat and sizes of projects
- Interviewed new CHP TAPs Directors regarding their WHP focus and efforts; coordinated with several on state efforts

EPA

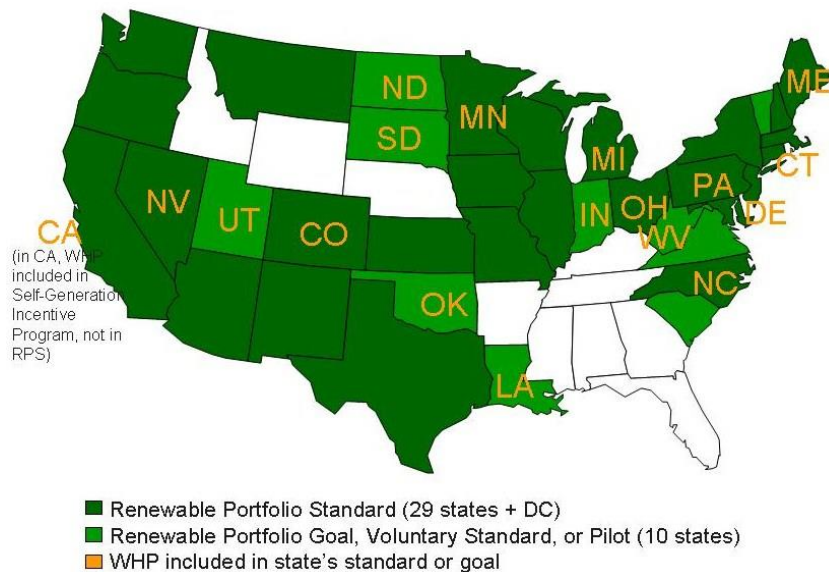
- Drafting comments addressing EPA's proposed GHG Standards for existing power plants (111(d)) and the role of WHP and states in meeting the requirements, with emphasis on states' support of WHP in existing RPSs and EERSs



Collaborators



WHP is a Named Energy Resource in 18 State RPSs & EERSs



WHP qualifies as renewable or efficiency in 18 states, either in the state's RPS, goal, pilot program; SGIP; or EERS



Catalogue of States in Which WHP is Provided Incentives as a Renewable or Energy Efficiency Technology



State Activities

- Developed Catalogue of States in which WHP is Provided Incentives as a Renewable or Energy Efficiency Resource
 - Resource for member companies to identify existing WHP incentives that could enhance project economics
 - White paper to support the existence and value of state recognition for WHP (to be used in 111(d) comments and elsewhere)
- Ohio - Track RPS and EERS legislative actions and support OH maintaining its program, held up as an example to other states
- Colorado - Formally intervened in a case before the PUC related to Public Service of Colorado's Renewable Energy Compliance Plan which included a proposed incentive payment for WHP projects. The ruling was favorable, taking nearly every suggestion made by HiP and SWEEP.
- Illinois - Advocate for and support state programs like Illinois' Public Sector CHP Pilot Program which encourage investment in conventional CHP as well as WHP systems in the public sector
- Track and support deployment of WHP in other states as opportunities arise



Looking Ahead to Fall and 2015

- November elections will influence agenda for lame duck and new Congress. Partisan divide unlikely to abate.
- Lame Duck focus: Extenders & Carper amendment; DOE Market Assessment
- New Congress: comprehensive tax reform?; engagement in support of Sen. and House ITC bills; MLPPA
- Administration: Continued engagement with DOE EERE-AMO, EPA, other agencies as appropriate



Susan Brodie, Executive Director

Outreach, Education, and Communications



Outreach, Education, Communications

- Goals and Objectives
 - Foster understanding about the benefits of and challenges to WHP amongst policy makers, federal agencies, and applicable industrial markets
 - Position waste heat to power as a means to address public policy goals of increased energy from emission-free resources, improved energy security, increased industrial competitiveness
 - Differentiate Waste Heat to Power (WHP) from Combined Heat and Power (CHP)
 - Provide consistent communication and industry information to stakeholders



WHP vs: CHP

- Responded to concerns from member companies about DOE and EPA mischaracterization of WHP as a simple subset of CHP.
- Developed detailed analysis of how WHP is differentiated from CHP in PURPA, EISA, tax code, other federal legislation and state legislation.
- Highlighted how WHP competes with other emission-free resources, and not fossil power generation options like traditional CHP. Similarly highlighted that without equal policy treatment, there is a distorted market for WHP and very few projects can occur.
- Developed catalogue of states in which WHP is provided incentives as a renewable or energy efficiency resource; includes state definitions of WHP and CHP – in only one state out of 18 does the same definition apply to WHP and CHP.



WHP Resources

LETTERS, COMMENTS, STATEMENTS

Heat is Power Letter to House Ways and Means Tax Reform Working Group April 15, 2013

Heat is Power Statement to House Committee on Energy and Commerce, Subcommittee on Energy and Power February 26, 2013

Heat is Power Letter to Bicameral Task Force on Climate Change February 20, 2013

INDUSTRY REPORTS

EPA Portfolio Standards and Promotion of CHP (2013)

EPA Waste Heat to Power Systems Paper (2012)

Waste Heat to Power — Still Waiting for a Breakthrough (ID

Waste Heat Recovery Opportunities in Selected US Industri

Carbon-Reducing Technologies and U.S. Jobs: Recycling In 2009)

DOE Waste Heat Recovery: Technology and Opportunities i

MEMBERSHIP INFO / HOW TO JOIN HIP

WHP Manufacturers, Packagers, Developers

WHP Component Manufacturers - provide materials or eq
WHP business but do not directly supply WHP systems

WHP Industrials / End Users - control the sources of WH but are not independent WHP
project developers

WHP Stakeholders (includes engineering firms, NGO's, associations, research
institutions, universities, financial firms, consultants, and others who do not fall into one of
the other categories)

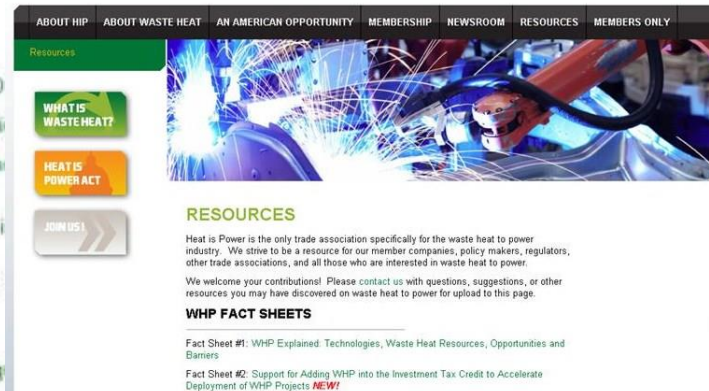
HiP Student Membership

113th Congress Committee Assignments

WHP PRESENTATIONS

WHP presentations from CHP2013 & WHP2013 Conference and HiP Annual Meeting:

- Congressman Paul Tonko's Welcome Address
- Federal Developments Supporting WHP – Tobyn Anderson, Edge Hill Group
- CHP and WHP Growth Trends and Opportunity Identification – Joel Bluestein, ICF International
- Industrial Waste Heat to Power Solutions - Dipti Dash, Kay Kwok & Fabio



Project Profiles



Project P Waste Heat to Power In Waste Water Treatment Albany County Sewer District - No

Industry: Municipal Waste Water Treatment

Project: North Plant Waste Heat to Power

Owner: Albany County Sewer District

Engineer: CDM Smith

Customer: Albany County Sewer District

Location: Menands, NY

Waste Heat Source: 1,000 to 1,250°F exhaust gas from sludge incinerators

Capacity: 925 kW

Average Capacity Factor: ~67%

Annual Energy Output: 3.3 million kWh's per year, enough to power 3,000 households

Use of Electrical Energy: Onsite consumption

Equipment: Turboden 10HR ORC unit

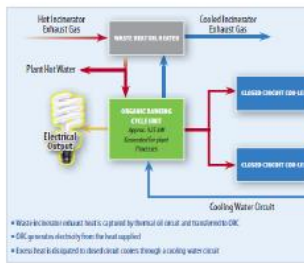
Commercial Operation: March 2012

Cost: Over 90% financed through NYSERDA and ARRA grants

Savings: est. \$480,000 per year

Payback: est. 12.6 years

Unique Aspects: First municipally owned ORC system in North America in the water/wastewater sector



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.heatpower.org



Project Profile Waste Heat to Power From Petroleum Coke Calcining Port Arthur Steam Energy

Industry: Petroleum Coke Calcining

Project: Port Arthur Steam Energy LP (PASE)

Developer and Manager: Integral Power, LLC

Heat Supplier: Oxbow Corporation

Customers: Oxbow Corporation & Valero Energy

Location: Port Arthur, Texas

Waste Heat Source: 1800-2000°F Kiln exhaust heat

Capacity: 5 megawatts (MW) + 450,000 pounds per hour (pph) process steam

Average Capacity Factor: ~92%

Annual Electric Output: 32,000 MWh per year

Annual Steam Output: 3,600,000 MMBTU per year

Use of Electrical Energy: On-site consumption, excess sold back to grid via Qualified Facility (QF) agreement

Major Equipment: Three Deltak waste heat recovery boilers rated at 210 kpph, 140 kpph, and 140 kpph, Multiclone Dust Collection System, GE 6.5 MW back-pressure steam turbine, 1000gpm water demineralization system, 2.5 mile steam pipeline

Commercial Operation: 2005

Savings: \$2.5 to \$5 million per year

Challenges: Re-development of an existing brownfield facility ruled out debt financing (funding procured through the private equity firm American Industrial Partners). Utility resistance and interconnect processes led PASE to ultimately file as a Qualified Facility under PURPA which required Entergy to purchase export power at avoided cost.



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Project Profile Waste Heat to Electricity In Fertilizer Manufacturing J.R. Simplot

Industry: Fertilizer Manufacturing

Owner: The J.R. Simplot Company

Location: Pocatello, Idaho

Capacity: 15.9 MW

Average Capacity Factor: ~52%

Annual Energy Output: 72,000 MWh per year

Use of Electrical Energy: Sold back to utility

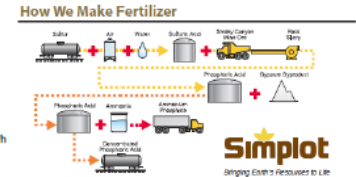
Equipment: Heat recovery boiler, Westinghouse 15.9 MW Steam turbine

Commercial Operation: 1987

Project Description

Simplot's sulfuric acid and phosphoric acid manufacturing are collocated in their Pocatello, ID manufacturing facility. The excess heat produced in the exothermic sulfuric acid process is piped to a phosphoric acid plant, where it is used in the production of dry and liquid phosphate and nitrogen fertilizers, feed phosphates, and purified phosphoric acid. Excess heat from the sulfuric acid plant is diverted to steam in a waste heat boiler. Most of the steam is then used in the phosphoric plant to produce phosphate products. The excess steam is utilized to drive steam turbine connected to a generator.

Simplot installed the waste heat to power system as a cost saving measure in 1987. Rather than venting the excess heat from the manufacturing process to the atmosphere, the plant utilizes the



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Fact Sheets



Waste Heat to Power Emission-Free Power Generation

Why is Waste Heat to Power Development 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 for WHP as an emission-free resource, often under \$0.05/kWhr, with renewable without access to long term power purchase.

Since the 2006 inclusion of a federal investment tax credit, given equal tax treatment electricity to power approximately 10 million American jobs, and support critical US manufacturing in MN, NV, ND, OH, OK, SD, UT, and WV – traditional renewable resource. These are traditional resources such as low priced to power, generate emission-free electricity.

What is The Heat is Power Association's Emission-Free Resource?

The Heat is Power Association advocates emission-free source of electricity. Our environmental stakeholders about the benefits of equivalent treatment of WHP. Our intent is to promote emission-free resource in state and federal efficiency standards, obtaining equivalent sources of emission-free electricity, and deployment. As an example, the Association's bicameral Master Limited Partnership Program.

Who is The Heat is Power Association?

The Heat is Power Association (HIP) is the profit organization, HIP is committed to waste heat to power as a source of electricity. Power Association promotes the efficient heat to power processes. Our members industrial end users, component manufacturers.

¹ Solar Energy Industries Association: <http://seia.org>



Waste Heat to Power Emission-Free Power Generation

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 waste heat is produced wherever the operation is running, often 24 hours a day, seven days a week, 365 days a year. If not recovered for reuse as lower temperature process heat or to produce emission-free power, the heat will dissipate into the atmosphere, a wasted opportunity.

What is Waste Heat to Power?

Waste heat to power (WHP) is the process of using recovered waste heat to generate electricity with no combustion and no emissions.

Technologies that Transform Waste Heat to Power

Waste heat to power systems use the same technologies as geothermal and solar thermal 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 and is underdeveloped. 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 converted into useful power. Through the application of these technologies, industrial waste heat is no longer just a byproduct – it is a resource for emission-free electricity, just like traditional renewables.

Is Waste Heat Considered a Renewable Resource?

Heat that is no longer needed in an industrial process is often vented through stacks, released into the air, or, if it contains hazardous gases, burned in a flare. Before it is vented, released or flared, the waste heat is an industrial byproduct and if captured, can be used to generate electricity.

The waste heat requires no other fuel and no combustion to generate power and releases no emissions, just as geothermal and solar thermal heat are used to generate power without combustion and without emissions. The energy source for this power is waste heat, not natural gas or any other fossil fuel that may have been used in the industrial process. Because it is an emission-free, combustion-free resource that is generated around the clock at industrial operations, the Heat is Power Association advocates waste heat be treated as a renewable equivalent resource.

Continued on other side



June 2013



Waste Heat to Power Emission-Free Power Generation

Leading Waste Heat to Power projects weigh in on why the more that can be done to accelerate the deployment of WHP projects to deliver important environmental and economic benefits.



Waste Heat to Power Emission-Free Power Generation

What can be done to accelerate the deployment of Waste Heat to Power (WHP) projects to deliver important environmental and economic benefits?

For the US to take advantage of this enormous resource to increase fuel-free emission-free power, WHP needs to be treated equal to the other renewable technologies. This will increase adoption rates, accelerate projects, and create US manufacturing jobs for projects here and for exports across the globe. John Fox CEO, ElectraTherm

Federal agencies claim WHP falls under the umbrella of CHP, yet WHP does not qualify under the 10% investment tax credit (ITC) that CHP receives. WHP needs to be clearly qualified in ITC language in order to give this energy source equal footing with CHP solutions, or, better yet, WHP needs to be qualified as a renewable resource to receive the 30% ITC that renewables receive. This change will go far to support the growth of this largely untapped and highly economical solution. Phil Bresman, CEO, Echogen Power Systems

As a manufacturer of WHP technology, we know there is an incredible opportunity for creating new jobs, generating more emission-free power, and expanding U.S. exports around the world. It is an economic form of clean energy. We look forward to seeing it recognized as an emission-free power resource along with traditional renewables. J.T. Grunski, President & CEO, TAS Energy

We own and operate one of the largest waste heat to power projects in the U.S. for the benefit of a large steel producer in the Midwest. The economic and environmental benefits of this project are undeniable and have helped position our customer as a low cost producer of steel in the region while helping them produce their product with a smaller environmental impact. The MLP Parity Act would lower the cost of capital so many more companies could benefit from waste heat to power projects at their plant sites which would in turn support jobs and the local economy. John Prunkl, President and CEO, Primary Energy Recycling Corporation

The ability of waste heat to power projects to qualify for MLPs will make those projects easier to finance, will be attractive to a broader range of energy investors, and will produce emission-free power from an otherwise wasted resource. We applaud your [sponsors of the MLP Parity Act] efforts to level the playing field for energy generation resources like ours that improve the competitiveness of our nation's industrial sector and generate power with no combustion and no emissions. Tony Straquadine, Chairman, The Heat is Power Association; Manager of Government Affairs, Alliance Pipeline

Turning waste heat to power would cut pollution and make industry more competitive, yet it is the only clean energy technology that the government does not encourage through tax incentives, putting it at a disadvantage in the marketplace. It's about time recycled energy was given a fair chance to compete. Dick Munson Senior Vice President, Recycled Energy Development

The Heat is Power Association •

The Heat is Power Association • 2215 South York Road, Suite 202 • Oak Brook, IL 60523
www.heatpower.org



E-Communications



LI

Federal Loan Guarantees for Renewable
Project
Solicitation Number

For Immediate Release
June 23, 2014



Contact: Susan Brodie
susan@heatispower.org
630.292.1304

In April, we told you about a draft DOE solicitation for Renewable Energy Projects and Efficient Energy Projects published July 3. Portions of the final solicitation below. Additional information can be found at <http://energy.gov/lpo/downloads/renewable-energy-projects-solicitation-final>.

The solicitation lists types of projects that are eligible and encourages applicants to submit additional project information. An eligible project must: (1) avoid, reduce, or eliminate greenhouse gases; and (2) employ New or Significant Commercial Technology in service in the United States. Projects must have "a catalytic effect on the development of Renewable Energy Projects and/or Efficient Energy Projects." Projects must have "an innovative feature of the Eligible Project."

A WHP project that meets these requirements is in the Energy Efficiency Improvements category which includes projects that use waste heat to generate power. Waste heat is energy from thermal, mechanical, electrical, chemical or hydro-processes.

Waste Heat to Power Included in Bipartisan Power Efficiency and Resiliency (POWER) Act

Oak Brook, IL – June 23, 2014 - The Heat is Power Association is pleased to offer its support for the Power Efficiency and Resiliency (POWER) Act, introduced in the House June 19. Among the important provisions is the addition of waste heat to power (WHP) as a newly eligible, qualifying energy resource to the investment tax credit (ITC) in Section 48 of the US Tax Code. The bipartisan bill is designed to significantly increase the amount of waste heat to power (WHP) used in the United States by adding WHP to the list of qualifying technologies, and by improving the existing ITC for combined heat and power (CHP). The POWER Act will make it possible for more businesses and communities across America to reduce energy consumption, save money, create jobs, and protect against blackouts.

Each year, U.S. utilities and factories send enough energy in the form of heat up their chimneys to power all of Japan. The heat released from industrial operations alone could be used to generate 10 GW of electricity, the amount needed to power 10 million American homes.

Proposed Federal Legislation Supporting Waste Heat to Power

Although Congress has been slow to take up new legislation, there are three pieces of legislation pending in Congress that would provide a 30% ITC for WHP, a bill that would qualify WHP for Master Limited Partnerships, and additional support for adding WHP into the current ITC if a tax extenders package is taken up in the lame duck session. The bills are detailed below.



H.R. 4916 - POWER Act - [bill text](#)

- Introduced 06/19/2014. Co-sponsors include Representatives Schwartz (D-PA), Gibson (R-NY), Crowley (D-NY), King (R-NY), Neal (D-MA), Heck (R-NV), Amodei (R-NV), Welch (D-VT), Tonko (D-NY), Collins (R-NY), Jon Runyan (R-NJ), Tim Ryan (D-OH), Gary Peters (D-MI), Tom Rooney (R-FL), Dina Titus (D-NV).
- Summary: Power Efficiency and Resiliency Act or the POWER Act - Amends the Internal Revenue Code to: (1) allow a 30% energy tax credit for combined heat and power system property and increase the capacity limitations for such property; (2) extend until December 31, 2018, the capex-in-service deadline for such property; and (3) allow a 30% energy tax credit for waste heat to power property (property comprising a system generating electricity through the recovery of a qualified waste heat resource) placed in service before January 1, 2019.

S. 2189 - Energy Efficiency Tax Incentives Act - [bill text](#)

- Introduced 04/01/2014 by Senators Feinstein (D-CA), Cardin (D-MD) and Schatz (D-HI).
- Summary: Energy Efficiency Tax Incentives Act - Amends the Internal Revenue Code to: (1) extend through 2016, and increase the maximum rate of, the tax deduction for energy-efficient commercial building expenditures; (2) allow a new tax deduction for the cost of retrofitting existing commercial and multifamily buildings; (3) allow a new tax credit, through 2016, for home energy efficiency improvements that increase energy efficiency by at least 20%; (4) extend through 2018 the tax credit for combined heat and power system property expenditures and increase the capacity limitations and credit percentages for systems with a higher efficiency rating; (5) allow an energy tax credit for investment in biomass heating property and for waste heat to power property (i.e., a system which generates electricity through the recovery of a qualified waste heat resource and is placed in service before January 1, 2019); (6) allow a



Online Resources



@HeatIsPower



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LEARN MORE ABOUT THE TRADE ASSOCIATION
COMMITTED TO **AMERICAN INDUSTRY**
AND A **CLEAN ENERGY FUTURE.**

[1](#) [2](#) [3](#) [4](#)

WHAT IS WASTE HEAT?

Learn about how we can capture heat and convert it into zero-emission electricity.

HEAT IS POWER ACT

The Heat is Power Act (H.R. 2812) will help stimulate growth in the waste heat to power market and create new jobs.

JOIN US!

Learn how to join the Heat is Power Association.

LATEST NEWS

Aug 12, 2014
2014 Waste Heat to Power Mid-year Report

The Heat is Power Association continues to raise the profile of WHP in Congress, within the Agencies and in the states. This newsletter provides an update on WHP in proposed federal legislation, state actions, DOE reports, and an EPA rulemaking. You'll also find information on our newest members and links to WHP resources. Read on for details! Proposed Federal Legislation Supporting [...]

Aug 6, 2014
Tell Your Representative To Co-Sponsor The POWER Act

The Power Efficiency and Resiliency "POWER" Act – H.R. 4916 would: Make waste heat to power (WHP) eligible for the 30% investment tax credit, Increase the current ITC for CHP from 10 percent to 30 percent, Apply the credit towards a project's first 25 megawatts, rather than the first 15 megawatts, and remove the cap limiting the credit [...]

Jun 23, 2014
Waste Heat to Power Included in Bipartisan Power Efficiency and Resiliency (POWER) Act

Oak Brook, IL – June 23, 2014 – The Heat is Power Association is pleased to offer its full support for the Power Efficiency and Resiliency (POWER) Act, introduced in the House June 19. Among the important provisions is the addition of waste heat to power (WHP) as a newly eligible, qualifying energy resource to [...]

REPORTS

EPA Waste Heat to Power Systems Paper (2012)

DOE Waste Heat Recovery: Technology and Opportunities in U.S. Industry (BCS, 2008)

Carbon-Reducing Technologies and U.S. Jobs: Recycling Industrial Waste Energy (Duke, 2009)

Waste Heat Recovery Opportunities in Selected US Industries (Frost and Sullivan, 2010)

CASE STUDIES

View all case studies

QUICK LINKS

Waste Heat to Power: How it Works

Economic Benefits

[heatpower.org](#) [heatpower.org](#)
[heatpower.org](#)

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Exhibits and Speaking Engagements



*Echogen
Technology
Day
Sept. 2014*



Photos courtesy of Dresser-Rand



Media



Waste heat keeps industry powered up.

Industrial processes such as the production of steel, chemicals, paper, oil, and gas use a lot of energy, resulting in significant amounts of wasted heat. With the help of proven waste heat to power, or WHP, technologies, companies can capture that heat and turn it into electricity, producing the same amount that 10 million homes would use in a year.¹ Generating energy using WHP could create more than 100,000 American jobs.²

Tell the Senate to vote "YES" for the amendment to the EXPIRE Act, that would add WHP as a qualifying technology for the Investment Tax Credit.

Some of the many companies using WHP³

Albany County Sewer District (NY)	Highline Electric Association Trailblazer Pipeline (CO)	Northern Border Pipeline Co. (MN, MT, ND, SD)
ArcelorMittal (IN)	IMC Phosphates (LA)	Rain CII (LA)
Covanta (MI, NY)	J.R. Simplot Co. (ID)	Sadriest Coke (TX)
GE (AL)	Kennecott Utah Copper (UT)	SunCoke Energy (OH)
Graymont (PA)	Mosaic Co. (FL)	Valero Energy & (TX)
Haverhill Coke (OH)		

¹Environmental Protection Agency, "Waste Heat to Power Systems," 2012.
²Heat is Power Association.
³Department of Energy, Combined Heat and Power Installation Database.

Harness the heat
 to save energy, cut costs, and keep the power on.
 Learn more about industrial energy efficiency at pewtrusts.org/industrialefficiency.




HEAT IS POWER
 LET'S CAPTURE IT

Building Opportunities for WHP

For more information about HiP's efforts
and membership, contact:

John Prunkl, Chair
jprunkl@primaryenergy.com
630.230.1312

Susan Brodie, Executive Director
susan@heatispower.org
630.292.1304

