

**Waste Heat to Power Business Leaders on
Why the market for WHP is currently limited and
How inclusion in the ITC can accelerate the deployment of WHP projects
Which 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**, headquartered in Reno, NV with WHP, geothermal, solar thermal and biogas projects in LA, MI, NV, SC and Europe

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 Brennan, CEO, Echogen Power Systems**, headquartered in Akron, OH with WHP projects on marine vessels

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. Including WHP in the ITC 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**, headquartered in Oak Brook, IL with WHP and CHP projects in IN

As a manufacturer of WHP solutions, we believe there is significant opportunity to create new jobs, generate more emission-free power, and expand U.S. exports around the world. However, the capital cost has prevented waste heat projects in the United States from competing successfully against forms of clean energy that qualify for the Section 48 Investment Tax Credit. Given the lack of economic incentive for potential customers, we have scaled back our efforts in the WHP industry and are focusing our business resources elsewhere. Recognizing and incentivizing WHP as an emission-free power resource along with traditional renewables will help level the field and allow for waste heat to power project development in the United States. **J.T. Grumski, President & CEO, TAS Energy Inc.**, headquartered in Houston, TX with geothermal projects in NV and OR

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. **Sean Casten, President and CEO, Recycled Energy Development**, headquartered in Westmont, IL with CHPs projects in NY, MA and CA

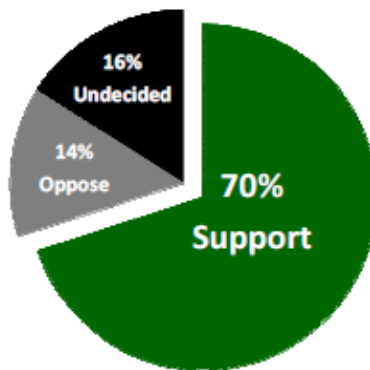
According to the DOE, waste heat is the largest opportunity for industrial energy efficiency in the United States, and is worth \$6B per year. Identifying WHP for the Investment Tax Credit will help U.S. industry increase efficiency, reduce emissions, and save money while at the same time increasing adoption rates of WHP technologies, creating more US manufacturing jobs. Waste heat is an important, fuel-free, emission-free, clean energy source that deserves the same incentives as renewable sources. **Michael F. Newell, CEO, Ener-G Rotors, Inc., headquartered in Rotterdam, NY**

Integral Power is on the front lines developing waste heat to power across a wide spectrum of industries including coke calcining, steel and cement manufacturing, and waste incineration. These project opportunities represent hundreds of megawatts of power generation while producing zero incremental emissions, adding new skilled jobs and making the host plants more competitive in their industries. The challenge that we face is that these projects are expensive to implement, with total installed costs typically in the range of \$2000-4000/KW. An Investment Tax Credit is imperative to help these projects achieve an acceptable rate of return which would allow many projects to move forward that are currently on the shelf, representing deployment of hundreds of millions in capital. **Ray Deyoe, Managing Director, Integral Power, LLC, headquartered in Houston, TX with a WHP project in TX**

The EPA estimates there is nearly ten gigawatts of waste heat to power capacity in the US. Given equal tax treatment to renewable energy sources, industrial waste heat could provide enough emission-free electricity to power approximately 10 million American homes, provide hundreds of thousands of new American jobs, and support critical US manufacturing industries. WHP is a non-polluting energy source that will add to our nation's energy security. However, because the technology is relatively new, it should be treated like other renewables when they were new to the market and receive the same incentives including ITC, PTC, and low interest loans. As demand for electricity continues to increase and our ability to meet that demand becomes more challenging, US legislators should support the deployment of emission-free waste heat to power. **Loy Sneary, President/CEO Gulf Coast Green Energy, headquartered in Bay City, TX with WHP projects in MS, TX and Cyprus**

70% of Americans favor tax credits for emission-free waste heat to power technology

(Based on a national telephone survey of over 1,000 Americans aged 18 and over by FD Consultants Dec. 2010)



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. 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 whenever 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.

Why aren't Waste Heat to Power Systems More Widespread in the US? Waste heat is similar to renewable resources like wind and solar in that the resource (waste heat) is free, can be used to produce electricity with no incremental emissions and no combustion, and is lost to the atmosphere if not captured to make power. Why don't more operations take advantage of this readily available, base load resource that is produced on site whenever the manufacturing operation is running, and use it to make emission-free combustion-free power, similar to the power made from renewable energy sources?

The Answer is Simple: Like renewable energy resources, the capital costs for waste heat to power projects are greater than for traditional fossil fuel based projects. But renewable energy resources and energy efficiency CHP receive incentives -- including ITC, PTC, low interest loans, and similar financial incentives -- in order to compete with traditional energy sources, while WHP projects do not receive any federal incentives. Since typical US industrial companies require a two to three year payback on the capital they invest in their operations, WHP cannot get its foot in the door, much less compete.

Is Waste Heat to Power Renewable? WHP is already considered renewable in many state Renewable Portfolio Standards (RPS) and other renewable policies (15 so far). Plus, the National Association of Regulatory Utility Commissioners (NARUC) voiced support for WHP in their 2013 "Resolution Supporting the Inclusion of Waste-Heat-to-Power Technologies in State and Federal Clean Energy Policies and Programs."

