

CHP Awards Announced

The projects below are selections for financial award. The final details and funding level of each project is subject to modification based on further negotiations between the selected entities and DOE.

Award Winners

Dresser, Inc., Dresser Waukesha – Ultra Clean 1.1 MW High Efficiency Natural Gas Engine Powered System. This CHP package will produce 1.1 MW of electricity, and up to 1.25 MW of hot water and/or steam to serve both commercial and industrial applications. This program will include a field test that will demonstrate the technical and commercial viability of the advanced engine-generator system. **DOE share of award: \$7,061,749**

CMCE, Inc. – CARB 2007-Compliant, Energy Efficient CHP Assembly for Industrial and Commercial Boilers. This project will integrate a simple-cycle (unrecuperated) 100 kWe microturbine with a new ultra-low NO_x < 9 ppm gas-fired burner. The package will be configured into a single compact assembly called the Boiler Burner Energy System Technology (BBEST) that could be used to readily replace conventional burners. The potential market for this clean and efficient distributed generation (DG) technology is on new boilers and over 130,000 packaged boilers currently operating in the U.S. **DOE share of award: \$1,731,772**

Cummins Power Generation – 330kWe CHP System with Reduced Emissions. Cummins Power Generation will develop a flexible, 330 kWe packaged CHP system that can be deployed to commercial and light industrial applications at a lower cost than current CHP solutions. The CHP system will provide the highest-efficiency and lowest-emissions internal combustion engine for a CHP system of this size. The engine will use a three way catalyst (TWC) to achieve the CARB Permitting Standard research goals for No_x, CO, and VOCs. **DOE share of award: \$4,480,416**

Gas Technology Institute – Flexible Combined Heat and Power (FlexCHP) System with Low NO_x, CO, and VOC Emissions. The objective of this project is to deploy Gas Technology Institute's (GTI's) Flexible Combined Heat and Power (FlexCHP) system to deliver power and steam while holding NO_x, CO, and VOC emissions below the 2007 Fossil Fuel Emissions Standard targets for microturbines. The system will combine a Capstone C65 microturbine, a GTI-developed supplemental Ultra-Low-NO_x (ULN) burner, and a 100 horsepower (HP) heat recovery boiler by Johnston Boiler Company. **DOE share of award: \$600,129**

FuelCell Energy, Inc. – Ultra Efficient CHP Using a High Temperature Fuel Cell to Provide On-Site Process Reducing Gas, Clean Power, and Heat. FuelCell Energy will work with ACuPowder (ACP) to use reducing gas produced from a high temperature fuel cell to directly replace hydrogen and nitrogen used in ACP's bright annealing process. Use of this gas will reduce the energy consumption by over 50% (including offsite energy) and reduce the total site utility costs by 25%, having a substantial impact on the unit economics. Because not all

the gas produced is needed by ACuPowder's process, it is also planned to route the excess gas to a low temperature bottoming cycle fuel cell to increase the efficiency. **DOE share of award: \$2,775,819**

Capstone Turbine Corporation – High Efficiency 370kW Microturbine with Integral Heat Recovery. The proposed development program seeks to substantially improve the operating efficiency of microturbine-based distributed generation, while at the same time meeting strict federal and state emissions requirements at an affordable price. Specifically, this project has the goals to develop a microturbine technology with 42% net electrical efficiency, increase net electrical output to 370kW, maximize usable exhaust energy to allow total CHP efficiencies of 85%, achieve ultra low exhaust emissions levels that meet CARB certification requirements, and provide a cost effective product concept able to be sold in the market for less than \$600/kW. **DOE share of award: \$5,000,000**