



Restore DOE's FY09 DG/CHP Budget to Historic Funding Levels

USCHPA urges Congress during consideration of the Department of Energy's FY09 Budget, to restore the historic \$60 million level of funding for the DOE's Industrial Distributed Energy efforts within the Office of Energy Efficiency and Renewable Energy's (EERE) Industrial Technologies Program.

Benefits of Distributed Energy (DG & CHP)

Clean Distributed Energy (DE) includes Distributed Generation (DG) and Combined Heat and Power (CHP) technologies and integrated systems that, near or at the point of use, efficiently recycle wasted energy, and/or produce electricity & thermal energy from one fuel. DE also includes technologies that store energy.

- DE supplements the existing electrical generation, transmission, and distribution infrastructure and provides critical consumer and societal benefits.
- Efficiency can be as high as 85% in CHP applications as compared with central station power generation efficiencies of 30-55%.
- Fuel flexibility and high efficiencies significantly contribute to reducing greenhouse gas emissions and other pollutants while providing for both energy security and reliability of the electric power grid.
- CHP and DE allow for customer control, self-sufficiency, and independence while still contributing to a smart and agile grid

Benefits of DOE's Industrial Distributed Energy Program

DOE's EERE and OE activities in DG & CHP have been critical in bringing industrial scale DE technologies through the initial stages of component development and system integration. However, much remains to be done in smaller sizes that serve the need of consumers such as multi-family residential and light commercial applications. The integration of packaged systems with heat recovery remains fertile ground for additional and significant efficiency improvements and emissions reductions.

Full Funding (\$60 M) Will Ensure Continued Success and Ensure Further Growth for DOE's DG/CHP Programs

Critical elements of DOE's DE program include:

- Technology Development – Continued work on prime movers (engines, industrial gas turbines, and micro turbines), components, and system integration to maximize fuel flexibility, including the use of bio-derived fuels, fuel efficiency, efficiently and optimally capture and utilize waste energy streams while setting ambitious goals of meeting / exceeding stringent environmental performance requirements demanded of DE integrated systems.
- Technology Validation – Field test, evaluation, and commercial demonstration of DE technologies and systems to verify goals such as the scalability, transferability and replicability of these systems and to reduce the real and perceived economic and technical risks in the marketplace.
- Market Transformation/Commercialization – DOE's efforts to support commercial deployment of DE systems must be expanded to include a comprehensive public-private partnership lead by the ITP Office to implement the goals of the DE program.
- Clean Energy Centers - Continued Support of the Clean Energy Centers / Regional Application Centers is critical to reform policies, reduce regulatory barriers, and address consumer issues that today impede the deployment of DOE invested clean DE technologies.

Background

The DE/CHP Program, which had been \$60 M, was transferred in FY 2006 to the Office of Electricity Delivery and Energy Reliability. In FY 2007 the program was transformed into the Distributed Systems Integration (DSI) Program focusing on electric utility distribution security, and funding was reduced to \$24 Million. The DSI program did not support consumer based energy efficiency and its resultant benefits. This reverses the direction of Congress to the DOE in the Energy Policy Act of 2005.

In FY 2008, the program was eliminated completely in the President's Budget request while the large scale "utility side of the meter" technologies struggle to become commercially viable. Fortunately, Congress provided \$15 million in FY 2008 to restart the program back in EERE where the benefits of DE support DOE's objectives of promoting energy efficiency and reducing greenhouse gas emissions.

Unfortunately, the President's Budget request for FY 2009 (a mere \$1.5 million) again failed sufficiently to support DOE's DG/CHP programs. We applaud Congress' leadership in providing additional support for DG/CHP in 2008 and urge you to take steps to fully fund the program in 2009.

Action

USCHPA urges Congress to ensure that the DG/CHP program is funded at \$60 Million for FY 2009 and that this funding apply to all customer side of the meter DG/CHP including industrial, commercial and residential sizes.

Fiscal Year 2009 Budget Needs
Distributed Generation/Combined Heat and Power
EERE's Industrial Technologies Program

In FY 2008, Congress re-established a distributed generation activity within ITP, including CHP. The industry applauds this decision and recommends further growth in the program, restoring the FY2009 budget to the historic \$60 million per year levels. The industry supports an aggressive Industrial Distributed Energy effort within the Office of Energy Efficiency and Renewable Energy's (EERE) Industrial Technologies Program that would include:

- Advanced reciprocating engine system research for clean, efficient and fuel-flexible DG/CHP systems for non-traditional CHP applications, such as untapped markets in the industrial sector, including food processing plants and the growing data center sector.

Efforts include increased efficiency (> 50% net electric) and reduced emissions for large gas-fired recip engines (>500 kW) and development of fuel flexible capability to utilize biogas, biofuels and waste fuels without degrading energy or emissions performance - \$10.0 million

Efforts include improvements to the efficiency and emissions of small reciprocating engines (<100 kW) to support advanced packaged systems targeted at new light industrial and commercial applications for CHP/DG - \$2.5 million

ITP would also pursue the growth opportunity in traditional industry CHP applications below 20 MW, including medium-sized plants that require both power and process heat. Specific activities would include:

- The development of alternative/dual fuel capability for turbines that meet the most stringent NO_x and CO regulations (e.g., those in southern California) - \$5.0 million
- Development of thermally activated technologies such as absorption cooling/refrigeration and desiccant dehumidification to address food processing and data center industry cooling needs, and other industrial and commercial applications that need both heating and cooling - \$10.0 million
- Innovative systems integration to optimize overall CHP system efficiency and reduce capital and O&M costs by 20-30%.

Efforts include development of small engine driven systems (<100 kWe) incorporating both heating and cooling and targeted at light industrial and commercial applications - \$10.0 million

Efforts include advanced systems integration of emerging technologies such as microturbines and fuel cells in low cost, high efficiency CHP/DG systems for a variety of industrial and larger commercial applications - \$7.5 million

Market transformation activities to support market deployment and reducing regulatory and institutional barriers to CHP and DG acceptance, accomplished through a comprehensive public-private strategic partnership for CHP led by ITP, including:

- Expansion of the DOE CHP Regional Application Centers - \$10.0 million
- More aggressive use of existing partnerships and development of new state and local partnerships) to address market, regulatory, and policy barriers - \$5.0 million

These activities are estimated to contribute as much as 300 trillion Btus of displaced energy and 9 MMTCE in annual carbon savings in 2020.