



Midwest CHP Application Center

Background

A Combined Heat and Power (CHP) system is a form of distributed generation (DG) and is defined as an integrated system that generates at least a portion of the electricity requirements of a building, facility, and/or campus, and recycles the thermal energy exhausted from the electric generation equipment to provide: Cooling, Heating, Dehumidification, Process Heating and/or Refrigeration.

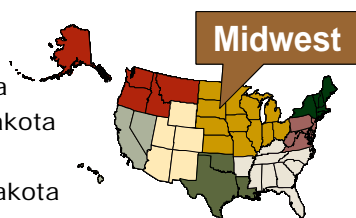
These systems utilize commercially available state of the art technologies, and if properly sized and installed can provide:

- Reduced Energy Costs
- Improved Power Reliability
- Improved Power Quality
- Increased Energy Efficiency
- Improved Environmental Quality

Center Mission

In 2001, the U.S. Department of Energy established the first of its kind CHP Application Center at the University of Illinois at Chicago, Energy Resources Center. The mission of the Midwest CHP Application Center is to develop technology application knowledge and the educational infrastructure necessary to foster CHP as a viable energy option in the Midwest and reduce any perceived risks associated with its implementation. The twelve state Midwest Region includes:

- Illinois
- Indiana
- Iowa
- Kansas
- Michigan
- Minnesota
- Missouri
- Nebraska
- North Dakota
- Ohio
- South Dakota
- Wisconsin



U.S. DOE CHP Challenge

The U.S. Department of Energy established a national challenge to double the installed capacity of CHP in the U.S. by the year 2010. The base year established by DOE for the challenge was 1998 with a starting CHP installation capacity of 46 GW. The challenge is to reach 92 GW of installed CHP capacity by the year 2010.

National Installed CHP Statistics (Fall 2007):

- Over 85.2 GW of installed CHP capacity
- Over 3,300 sites
- Represents 8% of U.S. generating capacity
- Represents 12% of U.S. annual power generation
- Saves U.S. over 3 Quads of fuel annually
- Eliminates over 400 million tons of CO₂ emissions annually
- Industrial applications represent about 88% of the existing CHP capacity
- Over 50% of the CHP installations are in the Commercial & Institutional market sectors

One of the specific goals of the Midwest CHP Application Center when it was established in March, 2001 was to support the US DOE CHP Challenge in the Midwest. To accomplish this goal, the Center fosters project identification and implementation in the twelve state Midwest Region through:

- Targeted Education
- Unbiased Information
- Technical Assistance

As of the fall of 2008, the Midwest Region is approaching its targeted contribution to the National CHP Challenge goals:

| Midwest CHP Challenge Status | |
|-------------------------------|------------------------------|
| | Estimated Installed Capacity |
| 1998 (Base Year) | 6 GW |
| 2008 (Most Current Status) | 10.6 GW |
| 2010 (Challenge Goal Midwest) | 12 GW |



Center Partnerships

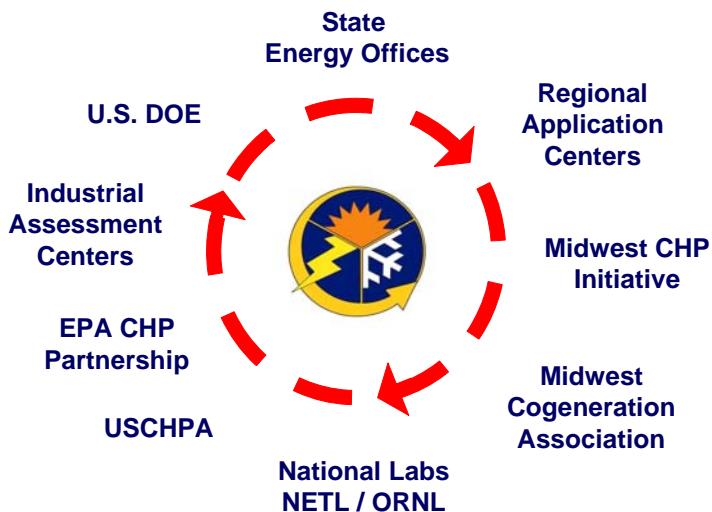
The Midwest CHP Application Center functions as a partnership seeking input and guidance from the CHP stakeholders in the Midwest. The focal point for this valuable input to the Center comes from the individual State Energy Offices and their respective constituents. To organize this activity, the Center was one of the original founders of the Midwest CHP Initiative.

The Initiative is a voluntary organization made up of representatives of the State Energy Offices, the State Utility Commissions, some utilities, equipment manufacturers, and engineering firms.

The Initiative serves three major purposes:

- Provides input and guidance to the Center activities
- Provides the mechanism to deploy the results of the Center's efforts back into the CHP industry
- Coordinates state advocacy efforts

A similar relationship exists between the Center and the Midwest Cogeneration Association (MCA). The MCA is the trade association for engineering & equipment companies servicing the Midwest Cogeneration / CHP markets.



Available Services

Website with Extensive, Easily Accessed CHP Information (www.chpcentermw.org)

Full Gamut of Targeted Market Workshops, Webinars & Courses:

- Architects & Engineer
- Hospitals & Healthcare
- Schools & Universities
- State Regulators
- Industrial Firms
- Livestock Manure to Energy
- Wastewater Treatment
- Food Processing
- Landfill Gas to Energy
- Ethanol Facilities
- Data Centers
- Professional Development Courses
- University Accredited CHP Course

CHP Site Project Profiles

- Two Page Case Studies
- Over 50 completed and available on website

Technical Assistance

- Site Analysis
- Application Studies
- Financial Analysis
- Site Instrumentation

Specialty Reports – available on website

For Further Information

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➤ Visit the MAC website at: www.chpcentermw.org