



# EPA's Combined Heat and Power Partnership

*Combined heat and power (CHP), or cogeneration, is an efficient and clean approach to generating power and useful thermal energy from a single fuel source. CHP is used to replace or supplement conventional separate heat and power (SHP) (i.e., central station electricity available via the grid and an onsite boiler or heater). Every CHP application involves the recovery of otherwise wasted thermal energy to produce additional power or useful thermal energy; as such, CHP provides greater energy efficiency and environmental benefits than SHP.*

*The U.S. Environmental Protection Agency (EPA) established the EPA CHP Partnership as a voluntary program that promotes high-efficiency CHP technologies across the United States. The Partnership works closely with energy users, the CHP industry, state and local governments, and other clean energy stakeholders to facilitate the development of new projects and to promote their environmental and economic benefits.*

## Benefits of CHP

CHP systems achieve fuel use efficiencies of 60 to 80 percent, compared to average fossil-fueled power plant efficiencies of 33 percent in the United States. This improvement in efficiency translates to:

- Reduced total fossil fuel use
- Lower operating costs
- Reduced emissions of regulated air pollutants
- Reduced emissions of greenhouse gases
- Increased reliability and power quality
- Reduced grid congestion and avoided distribution losses

For these reasons, businesses and others have installed more than 80,000 megawatts (MW) of CHP capacity in the United States, making CHP a proven pollution reduction technology option.

## Benefits of Joining the EPA CHP Partnership

The Partnership offers a variety of tools and services designed to facilitate and promote Partners' development of CHP projects. In addition to the offerings listed, check out the complete list of tools, services, and benefits on our website: [www.epa.gov/chp](http://www.epa.gov/chp).

## Education & Outreach

- Information for regulators, policymakers, and utilities to encourage energy efficiency and CHP.
- Peer-to-peer marketing and networking at workshops and conferences.
- Examples of model state policies for promoting CHP, such as output-based emissions regulations, CHP-friendly utility rates, and renewable portfolio standards that include CHP.
- The CHP Partnership newsletter, which provides information about Partner activities and accomplishments, funding opportunities, and upcoming events.
- The biannual Partnership Update, which showcases the efforts and accomplishments of our Partners and highlights opportunities for increased use of CHP.

## Public Recognition

- ENERGY STAR® CHP Awards and publicity.
- A profile on the Partnership website with information about each Partner.

## What You Can Do to Encourage CHP

**Energy Users.** Evaluate your needs for clean, reliable power, as well as heating and/or cooling, and consider CHP. Potential CHP users include industrial plants, data centers, universities, commercial or institutional buildings, district energy systems, hotels/casinos, ethanol production facilities, wastewater treatment facilities, and light industrial power parks. Energy users can achieve emissions reductions, cost savings, and increased reliability with CHP.

**CHP Project Developers and Equipment Suppliers.** Take advantage of the CHP Partnership's market development activities, tools, permitting guidance, networking, and project recognition to increase your profile, effectively target energy users, and expand your business.

**Utilities.** Establish policies and rates that facilitate CHP development in your service territory. In areas of electric grid congestion or high demand, CHP can reduce load pockets and offer grid support at times of peak demand. Through teaming with customers that have large thermal demands, CHP can allow a generation utility to generate electricity with less fuel while receiving a steady revenue stream from a thermal host.

**State and Local Governments.** Review energy policies in your state to ensure that they are not creating unintended barriers to CHP deployment by energy users. Using CHP to improve the efficiency of the energy sector helps state and local governments meet energy and air quality goals.

- An Annual Greenhouse Gas Reduction Report—a certificate that shows the carbon reductions associated with the Partner's projects, as well as equivalent benefits in terms of acres of trees planted and car emissions prevented.

## Direct Project Assistance

- CHP project qualification to determine whether CHP is worth considering at a particular facility.
- Technical assistance for candidate sites, including spark spread analyses, level 1 feasibility studies, and third-party review of feasibility/design studies.
- Up-to-date lists of state and federal incentives for CHP, biomass- and biogas-fueled applications, and information on state policies and utility rates favorable to clean distributed generation projects.
- The CHP Emissions Calculator, which compares the anticipated CO<sub>2</sub>, SO<sub>2</sub>, and NO<sub>x</sub> emissions from a CHP system to the emissions from a system that uses separate heat and power.

## Resources

- Current information on funding resources, including lists of state and federal incentives for CHP and biomass/biogas projects, as well as favorable regulatory/rates opportunities.
- Analyses of CHP potential in targeted strategic markets, such as ethanol, hotels/casinos, wastewater treatment, and data centers.
- Technical white papers and clean energy policy resource documents.

## Your Role as a Partner

Partners work with EPA to promote CHP benefits and support the development of new CHP capacity. EPA provides tools and services to support Partners as they investigate and develop new CHP capacity.

Industry and Energy User Partners agree to work with EPA to:

- Assess the potential for additional CHP development at their facilities.
- Publicize the energy, environmental, and economic benefits of their projects.
- Provide EPA with minimal operational data, allowing EPA to evaluate the partnership's success at reducing emissions through CHP.

Government Partners agree to:

- Support the development of new projects within their state and promote the benefits of CHP within their agency and their state.

*For more information about the EPA's CHP Partnership, including how to join, contact:*

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