

Appendix B—EPA CHP Partnership Biomass Tools and Resources

The EPA CHP Partnership is a voluntary program designed to foster cost-effective CHP projects. The goal of the partnership is to reduce the environmental impact of power generation by working closely with energy users, the CHP industry, state and local governments, and other stakeholders to help develop new projects and promote their energy, environmental, and economic benefits.

The CHP Partnership is open to CHP industry members; institutions and non-governmental organizations; energy users; and state, local, and tribal governments interested in developing CHP projects or promoting the benefits of CHP. The partnership offers a variety of tools and services designed to facilitate and promote partners' development of CHP projects.

The CHP Partnership's many tools and services, provided free of charge to all partners, fall into three categories: outreach and education to energy users, industry, and policymakers; direct project assistance; and public recognition for outstanding projects. Following is a list of biomass-related tools and resources that the CHP Partnership offers on its Web site.

For more information about becoming an EPA CHP partner and what the CHP Partnership can do to help you, visit <www.epa.gov/chp/partnership/index.html>.

Funding and Regulatory/Rates Opportunities (www.epa.gov/chp/funding/index.html)

The CHP Partnership posts regularly updated lists of:

- State and federal biomass/biogas incentives.
- State and federal CHP incentives.
- Utility, state utility commission, and state environmental agency rules, regulations, and rates that remove unintended barriers to clean distributed generation projects.

The CHP Partnership updates this information every two weeks. Each incentive is listed and sortable by name, state, and type of incentive (e.g., grant, tax incentive, rebate, low-interest loan).

CHP Emissions Calculator (www.epa.gov/chp/basic/calculator.html)

The CHP Emissions Calculator is a tool that compares the anticipated CO₂, SO₂, and NO_x emissions from a CHP system to the emissions from a comparable system that uses separate heat and power. The calculator allows a user to select from a large number of default or user-specified system profiles (including renewably fueled) to describe the CHP and separate heat and power systems for comparison. It then estimates the CO₂, SO₂, and NO_x emission reductions from CHP, presenting its estimates in terms of metric tons of carbon equivalent and emissions from cars.

Technical Assistance for Candidate Sites (www.epa.gov/chp/partnership/tech_assistance.html)

The CHP Partnership provides information, tools, and technical assistance to energy users who are considering CHP projects. With a short phone call, the partnership can help:

- Identify opportunities for cost-effective CHP (including CHP fueled with biomass or biogas).
- Assess goals, drivers, and potential barriers for a project.
- Direct energy users to existing tools and resources.
- Determine next steps for project-specific technical assistance.

Project-specific assistance can include performing comprehensive Level 1 feasibility analyses; researching technical, permitting, or regulatory questions; providing information on the CHP project development and procurement process; or answering questions about CHP applications and technologies,

siting, and system configuration. The goal of the CHP Partnership's technical assistance efforts is to provide energy users with technology, fuel, and vendor neutral information regarding CHP projects.

CHP Project Development Process (www.epa.gov/chp/project-development/index.html)

CHP technology and applications are proven and running successfully nationwide; however, potential CHP users do not always understand all of the steps required to complete a successful project. To streamline the complex and time-intensive task of CHP implementation, those considering CHP systems for their facilities should understand the entire project development process. The CHP Partnership has developed a series of key questions, considerations, and decisions that will be part of any CHP development project—outlined as a five-stage process on this Web site. The CHP Partnership offers services and tools to help project developers, end users, and others at each stage of project development.

Municipal Wastewater Facilities Strategic Market (www.epa.gov/chp/markets/wastewater.html)

Wastewater treatment facilities (WWTFs) that use anaerobic digesters to treat their waste are an excellent technical fit for CHP. At a WWTF, the biogas flow from the digester can be used as “free” fuel to generate electricity and power in a CHP system using a turbine, microturbine, fuel cell, or reciprocating engine. Installing a CHP system at a WWTF offers in a number of benefits:

- Producing power at a cost below retail electricity.
- Displacing purchased fuels for thermal needs.
- Qualifying as a renewable fuel for green power programs.
- Enhancing power reliability for the plant.
- Offering a cost-effective opportunity to reduce greenhouse gas and other air emissions.

The CHP Partnership recently analyzed the potential market and technical fit for CHP in this sector. A report describing this work is now available from the CHP Partnership:

- *Opportunities and Benefits of Combined Heat and Power at Wastewater Treatment Facilities* (www.epa.gov/chp/documents/wwtf_opportunities.pdf)
A report on WWTFs throughout the country, engineering rules of thumb for estimating the generation potential at a WWTF, and numerous links to case studies showing the benefits of CHP at WWTFs.

Dry Mill Ethanol Strategic Market (www.epa.gov/chp/markets/ethanol.html)

The CHP Partnership has been working with the ethanol industry since 2003 and has developed many useful documents that discuss the benefits of CHP for ethanol production facilities. Relevant case studies and presentations are also available on the Web site. Key documents include:

- *Combined Heat and Power: An Energy-Efficient Choice for the Ethanol Industry* (www.epa.gov/chp/markets/ethanol_fs.html)
A four-page fact sheet that explains the efficiency gains of CHP over separate heat and power, discusses the strong technical fit for CHP at ethanol production facilities, and provides information on some ethanol facilities currently employing CHP.
- *Assessment of the Potential for Energy Savings in Dry Mill Ethanol Plants from the Use of Combined Heat and Power (CHP)* (www.epa.gov/chp/documents/ethanol_energy_assessment.pdf)
A report on the energy savings from using CHP to generate electricity and steam for ethanol production instead of natural gas– and coal-fired, state-of-the-art boilers to generate steam and purchase grid electricity. Reductions in total fuel use are shown to be greater than 12 percent versus natural gas and 10 percent versus coal. The report includes a detailed discussion of performance and output characteristics and estimation methodologies.