



The Federal Perspective: EPA CHP Partnership

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Overview

- CHPP Basics
- CHPP Tools and Resources
- CHPP Priorities

EPA Combined Heat & Power Partnership (CHPP)

Objective

- Seeks to reduce the environmental impact of power generation by promoting the use of CHP

Strategies and Actions

- Targets key regulatory, utility and information barriers
- Supports development of new CHP projects with credible and objective technical expertise
- Offers trusted tools, guidance, and technical assistance
- Recognizes superior systems through ENERGY STAR CHP Awards
- Provides expertise to support EPA Clean Air Act implementation

Results

- Through 2013, assisted in the deployment of 917 projects by CHPP partners totaling over 6,199 MW of capacity and avoiding over 129 MMTCO₂

Website: <http://www.epa.gov/chp/>



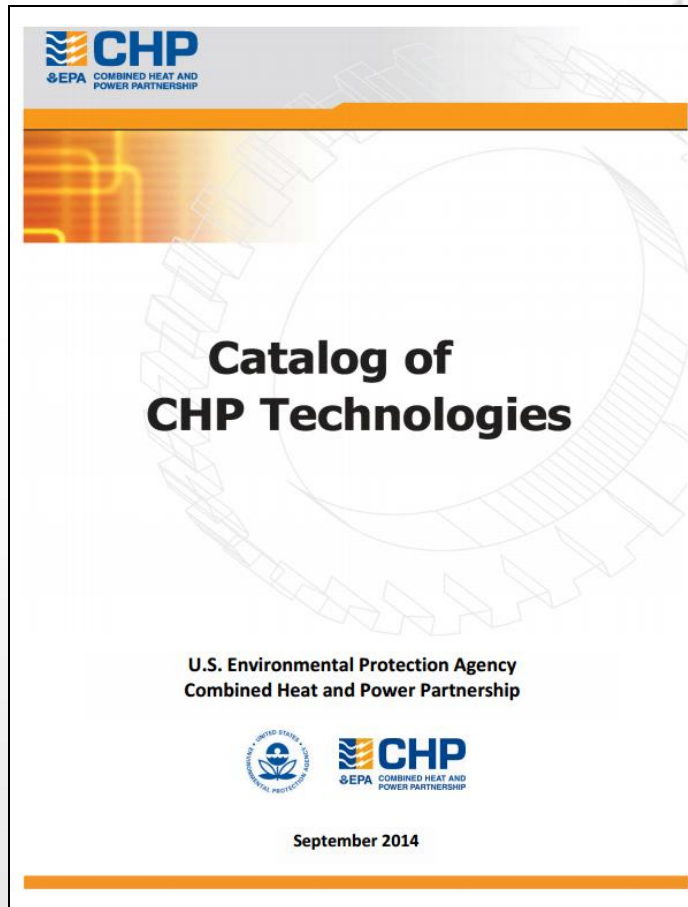
Almost 500 Partners...



CHP Partnership Resources for Project Developers

- Catalog of Technologies (updated)
- Project Development Handbook
- CHP Emissions Calculator
- Spark Spread Estimator
- CHP and Clean Water State Revolving Funds Fact Sheet (new)

CHP Catalog of Technologies



- Covers five commercially available CHP prime movers (Recip. Engine, Gas Turbine, B/S Turbine, Microturbine, Fuel Cell)
 - Description of common applications
 - Basic technology description
 - Cost and performance characteristics, incl. water use
 - Emissions and emissions control options
 - Future developments

<http://www.epa.gov/chp/technologies.html>

Spark Spread Estimator

- Enables user to conduct a very preliminary initial screening of potential CHP cost savings at a facility based on basic site data
- Estimator can generate spark spread estimate with as few as three inputs (location, business type and electricity use) using default figures
- Working on an update to enable application to smaller systems

The screenshot shows the 'Spark Spread Estimator Version 1.2' web application. At the top left is the logo for CHP (Combined Heat and Power Partnership) with the EPA logo. A 'Reset Inputs' button is located at the top right. Below the header, there are five numbered input sections:

- 1. What state is the facility located in?** - A text input field with a dropdown arrow on the right. *Instructions:* Click on the input cell and use the drop down list to select the appropriate state.
- 2. What is the line of business of the facility?** - A text input field with a dropdown arrow on the right. *Instructions:* Click on the input cell and use the drop down list to select the appropriate line of business (categories are based on two- or four-digit SIC codes). If your facility's line of business is not listed, select a similar line of business.
- 3. What is the typical monthly electric use in kWh?** - A text input field. *Instructions:* Enter the kWh used during a typical month or divide the annual kWh consumption by 12.
- 4. What is the typical monthly heating load or fuel use of the facility (enter a value in only ONE of the boxes)?** - Two stacked text input fields: 'Monthly heating load in MMBtu' and 'Monthly Fuel Use in MMBtu'. A 'Use Default based on Application' button is to the right. *Instructions:* Enter a value in either the monthly heating load or monthly fuel use input box. If possible, enter the heating load, which will produce a better estimate of spark spread. If inputting monthly fuel use, input total gas use from a representative month's natural gas bill, or calculate from annual gas consumption divided by 12. If this information is not available, select the "use default" option, which will estimate the heating load based on the line of business selected in question 2. 1 Therm is equivalent to 0.1 MMBtu (1 MMBtu = 10 Therms) 1 MCF is equivalent to 1.03 MMBtu (1 MMBtu = 0.97 MCF). The estimator considers heating loads only (CHP can provide cooling as well, and if this is your primary thermal need, please contact the CHPP helpline at 703-373-8108 for additional assistance).
- 5. How many hours per year does the facility** - A dropdown menu showing '7 days/week, 16 hours/day; 5,840 hrs' and a 'Use Default' button. *Instructions:* Enter the annual operating hours of the facility or choose from one of the hourly operating schedules in the drop-down list. If the annual

CHP Partnership Resources for State Officials and Policy Advocates

- dCHPP (CHP Policies and Incentives database)
- State Permit-By-Rule Programs Fact Sheet
- Output-Based Regulations Handbook

dCHPP Database

- Allows users to search for CHP-favorable policies and incentives by state or at the federal level

CHP Home

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dCHPP (CHP Policies and incentives database)

The dCHPP (CHP Policies and incentives database) is an online database that allows users to search for CHP policies and incentives by state or at the federal level. dCHPP has two primary purposes:

- Policy makers and policy advocates can find useful information on significant state/federal policies and financial incentives affecting CHP.
- CHP project developers and others can easily find information about financial incentives and state/federal policies that influence project development.

The [glossary \(PDF\)](#) (2 pp, 53K) contains definitions for the policy and incentive types included in dCHPP.

Please select one or both of the search filters to return your desired results. To select more than one option within a search filter (e.g., New York and Texas in the Search by State filter), hold down the Control key on your keyboard while selecting the options. You can then sort the results by selecting the desired column heading. To start over, select "Reset Filters."

Search by State:

Tennessee

Texas

Utah

Vermont

Virginia

Search by Policy/Incentive Type: [Reset Filters »](#)

Show All

Bond

Commercial PACE

Energy Regulation and Policy

Environmental Regulation

Policy/Incentive Name	Policy/Incentive Type	State
Air Quality Standard Permit for Electric Generating Units (EGUs)	Environmental Regulation	TX
City of Houston – Energy Efficiency Incentive Program	Grant	TX
Energy Security Technologies for Critical Governmental Facilities	Energy Regulation and Policy	TX
Texas CHP Permit-by-Rule	Environmental Regulation	TX
Texas CHP Sales Law Codified under Chapter 31 and 37 of the Utilities Code	Energy Regulation and Policy	TX
Texas Interconnection Standards	Interconnection Standard	TX

Policies and Incentives

- [dCHPP \(CHP Policies and incentives database\)](#)
- [Policy Resources](#)
 - [Output-Based Regulations](#)
 - [Interconnection Standards](#)
 - [Utility Rates](#)
 - [Portfolio Standards](#)
 - [Public Benefits Funds](#)

Permit-by-Rule (PBR) Factsheet



Approaches to Streamline Air Permitting for Combined Heat and Power: Permits by Rule and General Permits

Introduction

Combined heat and power (CHP) is an efficient and clean approach to generating electric power and useful thermal energy from a single fuel source. CHP is used either to replace or supplement conventional separate heat and power. Instead of purchasing electricity from the local utility and burning fuel in an on-site furnace or boiler to produce thermal energy, an industrial or commercial facility can use CHP to meet both energy services in one energy-efficient step.

In installing a CHP system, a facility is required to obtain permits from local authorities to set up the system, connect it to the local grid, and operate it in compliance with local and state regulations. To ensure compliance with air quality standards, a facility, in consultation with the state or local permitting agency, reviews air permitting requirements and then obtains a permit before the system is installed and operated.

CHP stakeholders have identified the process for obtaining air permits to be time and resource-intensive, and a potential impediment to CHP projects. In the past decade, and particularly in the past few years, several states – including Connecticut, New Jersey, and Texas – have introduced streamlined permitting procedures for certain types of CHP units in order to simplify and speed up the permitting process.

The U.S. EPA CHP Partnership developed this fact sheet to help policymakers and CHP advocates gain a better understanding of streamlined permitting procedures.

The EPA CHP Partnership is a voluntary program seeking to reduce the environmental impact of power generation by promoting the use of CHP. 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.

The fact sheet:

- Provides background on the two streamlined permitting processes: permit by rule (PBR) and general permits (GP).
- Describes the typical PBR/GP development process.
- Summarizes the PBR and GP programs developed by Connecticut, New Jersey, and Texas. State representatives from each state, as well as a CHP advocacy group in Texas, were interviewed on the reasons behind developing their expedited permit programs for CHP, the processes followed to develop the permit programs, the requirements of each permit program, and observations on the process for developing the programs, as well as the outcomes achieved.

The fact sheet does not serve as a guidance document, nor does it endorse any particular state approach to developing a CHP PBR/GP program. Instead, it serves as a resource to explain the factors that contributed to the development of PBRs/GPs and to share lessons learned during these processes.

- Provides background on PBRs/general permits for CT, NJ and TX
- Overall observations, e.g.:
 - Challenge is to ensure that requirements are adequate but not so stringent that facility with typical CHP configuration goes with conventional permit
 - Include sufficient reporting and recordkeeping requirements to ensure compliance with permit requirements (stack test reports, notification when there is non-compliance, etc.)

Current CHPP Priorities

- Support for CHP in Clean Power Plan rules
- ENERGY STAR CHP Awards
 - Will present 2015 Awards at International District Energy Association (IDEA) Annual Conference in Boston on June 29
- CHP and LEED
 - Developing education/outreach products targeted at architects, engineers, and LEED consultants
 - Address CHP industry information gaps about LEED scoring of CHP systems
- Promoting CHPP tools and resources
- Engaging with clean energy stakeholders
 - Receiving wide range input through public comments on the proposed Clean Power Plan rule
 - Participation in conferences – e.g., DistribuGen, Electric Power, NFMT High Performance Buildings Conference, IDEA
 - Upcoming webinars with the Business Council for Sustainable Energy and the CHP Association

Support for Draft Clean Power Plan (CPP) Rule

- Received comments on CHP and WHP from @ 100 organizations on draft CPP rule
- Nature of comments
 - CHP should be/not be factored into state goals
 - CHP should be available to states as a compliance option in their plans
 - Industrial CHP should be/not be exempted
 - CHP systems should have 100% of the thermal output credited
- Final rule to be released this summer

CHP and LEED Project - Example

Macedonia Apartments in Flushing, NY

- Project completion estimated 2015
- 147,950 square feet; 14 stories
- 200 kW CHP plant consisting of two Tecogen InVerde 100 kW modules
- On track for LEED Gold (75 points)-v2009
- CHP contributed to 16 points awarded for the “Energy and Atmosphere, Optimize Energy Performance” credit



CHP's Demonstrated LEED Point Impact – Other Examples

Building	# of Apts.	CHP Type/Size	Pts. w/out CHP	Pts. w/CHP
1	620	130 kW MT	2	8
2	340	65 kW MT	2	10
3	500	200 kW MT	2	7
4	100	65 kW MT	1	7
5	185	65 kW MT	3	9
6	250	65 kW MT	1	7
7	230	200 kW MT	0*	9
8	40	75 kW Recip	0*	4

* Would not meet Prerequisite w/out CHP

Questions?

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