



# Leveraging CHP Project Development Tools and Resources from EPA's CHP Partnership

Felicia Ruiz / Katrina Pielli / Bruce Hedman / Bob Sidner  
U.S. EPA CHP Partnership  
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# Today's Presentation

- Tools and resources overview
- General Partnership education/outreach resources
- Technical assistance for candidate sites
- Publicity and recognition
- Questions

# EPA CHP Partnership

- Voluntary program that seeks to reduce the environmental impact of power generation by promoting the use of highly-efficient CHP
- Works with clean energy stakeholders from the private and public sectors to support the deployment of new CHP projects and to promote their energy, environmental, and economic benefits

# Overview of Tools and Resources

- Three types
  - General Partnership education and outreach
  - Technical assistance for candidate sites
  - Publicity and recognition
- All tools and resources available for free
  - General Partnership education and outreach materials available to everyone
  - Technical assistance and publicity/recognition **available to Partners**
- All Partnership tools and resources available on our Web site

[www.epa.gov/chp](http://www.epa.gov/chp)

# Joining the CHP Partnership

- Letter of Intent (LOI) to Join Partnership
  - Free to join
  - LOI available on our website at <http://www.epa.gov/chp/partnership/how-to-join.html>
- Partner agrees to:
  - Designate CHP Liaison
  - Provide yearly updates on existing and new CHP projects to EPA, to help EPA determine climate benefits
- EPA will:
  - Support Partner with tools and resources intended to accelerate CHP project development, including recognition of Partner's CHP accomplishments and associated benefits

# General Partnership Education and Outreach Resources

# Basic CHP Information and Project Development Resources

- Basic CHP information
  - CHP Catalog of Technologies  
([www.epa.gov/chp/basic/catalog.html](http://www.epa.gov/chp/basic/catalog.html))
  - Biomass CHP Catalog of Technologies  
([www.epa.gov/chp/basic/catalog.html](http://www.epa.gov/chp/basic/catalog.html))
  - Information on multiple benefits of CHP  
([www.epa.gov/chp/basic/index.html](http://www.epa.gov/chp/basic/index.html))
- CHP Project Development Handbook and other resources  
([www.epa.gov/chp/project-development/index.html](http://www.epa.gov/chp/project-development/index.html))
- CHP Funding Database  
(<http://www.epa.gov/chp/funding/index.html>)

# Strategic Market Resources

- Ethanol

- Web site ([www.epa.gov/chp/markets/ethanol.html](http://www.epa.gov/chp/markets/ethanol.html))
- The Impact CHP on Energy Use and Carbon Emissions in the Dry Mill Ethanol Process  
([www.epa.gov/chp/documents/ethanol\\_energy\\_balance.pdf](http://www.epa.gov/chp/documents/ethanol_energy_balance.pdf))
- CHP for Ethanol Facilities (fact sheet)  
([www.epa.gov/chp/documents/ethanol\\_fs.pdf](http://www.epa.gov/chp/documents/ethanol_fs.pdf))
- Utility-Ethanol Partnerships: Emerging Trend In District Energy/CHP  
([www.epa.gov/chp/documents/district\\_energy\\_article.pdf](http://www.epa.gov/chp/documents/district_energy_article.pdf))
- Integration of VOC Destruction and CHP in the Ethanol Industry  
([www.epa.gov/chp/documents/voc\\_destruction\\_white\\_paper.pdf](http://www.epa.gov/chp/documents/voc_destruction_white_paper.pdf))



# Strategic Market Resources (cont.)

- Hotels and casinos
  - Web site  
([www.epa.gov/chp/markets/casinos.html](http://www.epa.gov/chp/markets/casinos.html))
  - CHP in Hotels and Casinos—  
Market analysis report and  
addendum  
(Report:  
[www.epa.gov/chp/documents/hotel\\_casino\\_analysis.pdf](http://www.epa.gov/chp/documents/hotel_casino_analysis.pdf))  
(Addendum:  
[www.epa.gov/chp/documents/hotel\\_casino\\_addendum.pdf](http://www.epa.gov/chp/documents/hotel_casino_addendum.pdf))
  - CHP for Mid-Size to Large  
Hotels (fact sheet)  
([www.epa.gov/chp/documents/hotel\\_fs.pdf](http://www.epa.gov/chp/documents/hotel_fs.pdf))
  - CHP for Resort Hotels and  
Casinos (fact sheet)  
([www.epa.gov/chp/markets/casino\\_fs.html](http://www.epa.gov/chp/markets/casino_fs.html))



# Strategic Market Resources (cont.)

- Wastewater treatment facilities
  - Web site ([www.epa.gov/chp/markets/wastewater.html](http://www.epa.gov/chp/markets/wastewater.html))
  - The Opportunities for and Benefits of CHP at Wastewater Treatment Facilities ([www.epa.gov/chp/documents/wwtf\\_opportunities.pdf](http://www.epa.gov/chp/documents/wwtf_opportunities.pdf))
  - Energy Savings and Energy Reliability for Wastewater Treatment Facilities (fact sheet) ([www.epa.gov/chp/documents/wastewater\\_fs.pdf](http://www.epa.gov/chp/documents/wastewater_fs.pdf))
- Data centers
  - The Role of Distributed Generation and CHP Systems in Data Centers ([www.epa.gov/chp/documents/datactr\\_whitepaper.pdf](http://www.epa.gov/chp/documents/datactr_whitepaper.pdf))
- Utilities
  - EPA's Clean DG Policy and CHP Webinar Series ([www.epa.gov/chp/events/webinars.html](http://www.epa.gov/chp/events/webinars.html))
  - More resources coming soon

# State Policy Resources

- Fact sheets, studies, and customized assistance on:
  - Developing standardized interconnection rules
  - Designing standby rates that suitably recognize DG benefits while appropriately compensating the utility for its provided services
  - Developing incentive programs for CHP using public benefit funds
  - Including CHP/waste heat recovery in renewable portfolio standards and energy efficiency portfolio standards
  - Establishing output-based emissions regulations and incorporating other efficiency measures into state implementation plans

Web site: [www.epa.gov/chp/state-policy/index.html](http://www.epa.gov/chp/state-policy/index.html)

Contact: Katrina Pielli  
[Pielli.Katrina@epa.gov](mailto:Pielli.Katrina@epa.gov)  
202-343-9610



# Technical Assistance for Candidate Sites

# Technical Assistance for Partner Candidate Sites

- Partnership can help Partners:
  - Identify opportunities for cost-effective CHP
  - Assess goals, drivers, and potential barriers for a project
  - Direct energy users to existing tools and resources
  - Determine next steps for project technical assistance

More information at:

[www.epa.gov/chp/partnership/tech\\_assistance.html](http://www.epa.gov/chp/partnership/tech_assistance.html)

# Types of Technical Assistance Offered

- Level 1 feasibility study
  - Samples available at: [www.epa.gov/chp/project-development/stage2.html](http://www.epa.gov/chp/project-development/stage2.html)
- Spark spread screening
- Third-party review of feasibility/design studies
- Technology/vendor list
- Incentive/policy analysis
- Energy and emissions savings calculations

# The CHP Emissions Calculator

- Calculates anticipated **CO<sub>2</sub>**, **SO<sub>2</sub>**, and **NO<sub>x</sub>** emissions
- Compares a specific CHP system to separate heat and power
- Requires as few as 3 inputs; can customize up to 29 fields
- Outputs
  - Metric tons of carbon equivalent (MMTCE)
  - Acres of trees planted
  - Emissions from cars

Annual Emissions Analysis						
	CHP System	Displaced Electricity Production	Displaced Thermal Production	Emissions Reduction	Percent Reduction	
9	NO <sub>x</sub> (ton/year)	29.01	209.81	6.09	195.89	98%
10	SO <sub>2</sub> (ton/year)	0.11	542.78	4.41	547.09	100%
11	CO <sub>2</sub> (ton/year)	21,203	92,200	4,876	75,773	78%
12	Carbon (metric ton/year)	5,810	25,146	1,330	20,665	78%
13	Fuel Consumption (MMBtu/year)	364,159	940,211	60,945	636,938	64%
14	Acres of Forest				20,665	
15	Number of Cars				12,316	

This CHP project will reduce emissions of Carbon Dioxide (CO<sub>2</sub>) by 75,773 tons per year  
This is equal to 20,665 metric tons of carbon equivalent (MTCE) per year

This reduction is equal to the carbon absorbed by 20,665 acres of forest

OR

This reduction is equal to the carbon absorbed by 12,316 cars off the road

Can be accessed at:

[www.epa.gov/chp/basic/calculator.html](http://www.epa.gov/chp/basic/calculator.html)

# Publicity and Recognition

# ENERGY STAR CHP Awards

- Performance-based award with review of one year of operating data
- Recognizes projects that require at least 5 percent less fuel than state-of-the-art separate heat and power generation
- When a system qualifies for an award, EPA:
  - Sends a letter to the recipients acknowledging their achievement
  - Develops an announcement describing the system's energy and environmental excellence. The announcement is posted on the CHP Partnership Web site
  - Presents the framed award to the recipient at an event attended by their peers



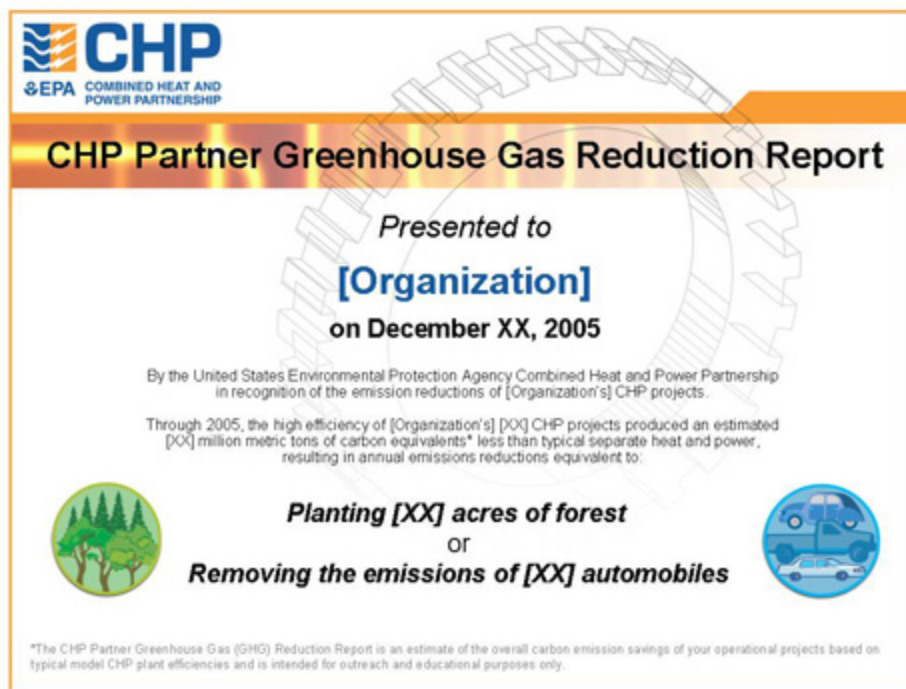
More information and how to apply:


[www.epa.gov/chp/public-recognition/awards.html](http://www.epa.gov/chp/public-recognition/awards.html)



# Annual Greenhouse Gas Reduction Certificate for Reporting Partners

- Shows carbon reductions associated with Partner's projects, as well as equivalent benefits in acres of trees planted and car emissions prevented





 **CHP**  
COMBINED HEAT AND  
POWER PARTNERSHIP

**CHP Partner Greenhouse Gas Reduction Report**

Presented to  
**[Organization]**  
on December XX, 2005

By the United States Environmental Protection Agency Combined Heat and Power Partnership  
in recognition of the emission reductions of [Organization's] CHP projects.

Through 2005, the high efficiency of [Organization's] [XX] CHP projects produced an estimated  
[XX] million metric tons of carbon equivalents\* less than typical separate heat and power,  
resulting in annual emissions reductions equivalent to:

 **Planting [XX] acres of forest**  
OR  
**Removing the emissions of [XX] automobiles** 

\*The CHP Partner Greenhouse Gas (GHG) Reduction Report is an estimate of the overall carbon emission savings of your operational projects based on typical model CHP plant efficiencies and is intended for outreach and educational purposes only.

# CHP Partners List

- Profile on the **Partnership Web site** with information about each Partner

Name ↕	Partner Services	State
<a href="#">Abbott Laboratories</a>	End-user	IL
<a href="#">Aegis Energy Services Inc.</a>	CHP Project Developer	MA
<a href="#">Affiliated Engineers</a>	Consultant/Engineering	NC
<a href="#">Aircogen Limited</a>	ESCO	GA
<a href="#">Allegiance Energy Systems</a>	CHP Project Developer	NY
<a href="#">Alliant Energy Generation</a>	CHP Project Developer	IA
<a href="#">Alternative Energy Solutions</a>	Equipment Manufacturer	KS
<a href="#">American DG Energy Inc.</a>	CHP Project Developer	MA
<a href="#">Antares Group, Inc.</a>	Consultant/Engineering	MD
<a href="#">Archer Daniels Midland Company</a>	End-user	IL
<a href="#">Arizona State University</a>	End-user	AZ

**Alliant Energy Generation**

Contact Name	Randy Portz
Title	President, IEA
E-mail	<a href="mailto:RandyPortz@alliantenergy.com">RandyPortz@alliantenergy.com</a>
Address	201 Third Avenue SE, Suite 300 Cedar Rapids, IA 52401
Phone	(319) 786-2712
Fax	
Partner Services	CHP Project Developer
Web Site	<a href="http://www.alliantenergygeneration.com">http://www.alliantenergygeneration.com</a> <small>[EXIT Disclaimer]</small>
CHP-Related Web Page	
Sample Projects	

**Partner Profile**

Alliant Energy Generation (AEG) provides generation and cogeneration services, including its core competencies: development, finance, construction management, ownership, operations and maintenance, and asset management. Headquartered in Oakbrook, Illinois, AEG owns 400 MW of distributed and merchant generation assets and currently has 460 MW of new generation under construction. Serving its customers on-site energy generation for more than 20 years, AEG believes it takes a multi-talented team to compete in the electric generation business and has brought the critical core competencies together in-house.

All Partners listed at:

[www.epa.gov/chp/partnership/partners.html](http://www.epa.gov/chp/partnership/partners.html)

# Other Publicity Opportunities

- Communication
  - Presenting at conferences and workshops with CHP Partnership
  - Submitting an article to the CHP Partnership for inclusion in the monthly Partner newsletter
  - Submitting an article to the CHP Partnership for inclusion in the annual Partnership Update
- Partners may include CHP Partnership logo in sales, marketing, and advertising materials
- Partners receive a welcome kit with program information, as well as a Partner Certificate

Public recognition Web site:

[www.epa.gov/chp/public-recognition/index.html](http://www.epa.gov/chp/public-recognition/index.html)

# Contact Us

**Felicia Ruiz**

CHP Partnership

U.S. EPA

[\*ruiz.felicia@epa.gov\*](mailto:ruiz.felicia@epa.gov)

Ph: (202) 343-9129

Fax: (202) 343-2208

**Larry Gonzalez**

CHP Partnership

U.S. EPA

[\*gonzalez.larry@epa.gov\*](mailto:gonzalez.larry@epa.gov)

Ph: (202) 343-9546

Fax: (202) 343-2208

**CHPP Helpline**

Phone: 703-373-8108

E-mail: [\*chp@epa.gov\*](mailto:chp@epa.gov)

[www.epa.gov/chp](http://www.epa.gov/chp)

