CHP
EPA COMBINED HEAT AND POWER PARTNERSHIP

Supporting Efficiency
Cogeneration at UNC Chapel Hill

Kim Crossman
US EPA Combined Heat and Power Partnership
November 9, 2005

Combined Heat and Power (CHP)

- Also called cogen or cogeneration.
- The simultaneous production and utilization of electrical or mechanical energy and heat from the combustion of fuel.
- A more efficient and environmentally superior way to produce energy close to the load being served.

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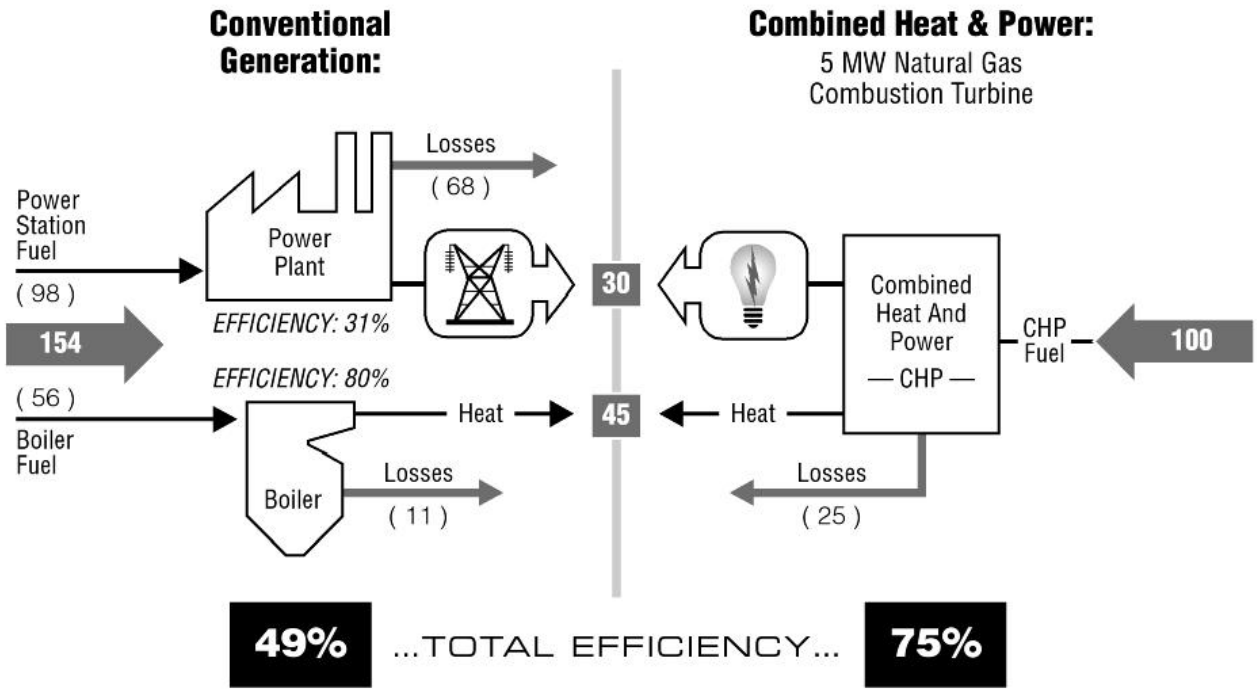
Efficiency Benefits of CHP



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2000 Combined Heat and Power Certificate of Recognition

Presented to

The University of North Carolina at Chapel Hill

by the United States Environmental Protection Agency and Department of Energy in recognition of the superior environmental performance of the central utility plant achieved through the use of pollution preventing combined heat and power.

Awarded on March 21, 2000

Paul M. Stolpman, Director
Office of Atmospheric Programs, EPA

Dan Reicher, Assistant Secretary
Energy Efficiency and Renewable Energy, DOE

History of the EPA CHP Partnership

- Within the Climate Change Partnerships Division, home of the Energy Star efficiency programs
- Through exposure to projects like UNC, EPA became aware of the potential fuel savings and resulting environmental benefits of CHP
- In 2001, founded the CHP Partnership

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EPA's CHP Partnership

- Voluntary public-private partnership of CHP industry, energy users, government
- Provide services and tools for partners to assist with CHP project development, provide information and outreach and encourage CHP deployment.
- Technology, fuel and vendor neutral – preferable projects have high efficiency

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Combined Heat and Power Partnership

Founding Partner

Presented to

The University of North Carolina at Chapel Hill

By the United States Environmental Protection Agency in recognition of the significant contribution The University of North Carolina at Chapel Hill is making to increase the use of combined heat and power.

Kathleen Hogan, Director
Climate Protection Partnerships Division, EPA
October 15, 2001

UNC Chapel Hill - Demonstrating Environmental Leadership

- UNC Chapel Hill a founding Partner, recruited to join due to willingness to share info and best practices with peers
- Active involvement with the International District Energy Association (IDEA)
- After receiving the Certificate of Recognition in 2000, committed to data collection for submission of Energy Star CHP Award application.

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Criteria for Energy Star CHP Award

- Recognizes the best CHP projects
- At least 5% more efficient than state of the art separate heat and power production
- CHP system efficiency is calculated by EPA and verified with one year of operating data

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2003 ENERGY STAR® Award
Combined Heat and Power

Presented to

The University of North Carolina at Chapel Hill

By the United States Environmental Protection Agency in recognition of the significant fuel savings realized by the central power plant at the Chapel Hill campus through the use of highly efficient combined heat and power technology.

Awarded on 11 February, 2004

Kathleen Hogan, Director
Climate Protection Partnerships Division, U.S. EPA

The Ongoing Benefits of CHP

- Each year the plant operates, CO2 emissions are reduced in comparison to separate heat and power.

- Since operation began in 1991, annual CO2 emissions reductions equivalent to:
  - Planting ~ 16,500 acres of trees
  - Removing the emissions of ~ 11,000 cars

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CHP Partner Greenhouse Gas Reduction Report

Presented to

University of North Carolina at Chapel Hill

on October 12, 2005

By the United States Environmental Protection Agency Combined Heat and Power Partnership
in recognition of the emission reductions of University of North Carolina at Chapel Hill's CHP Project(s).

Through 2005, the high efficiency of University of North Carolina at Chapel Hill's 1 CHP project(s) produced an estimated 0.2308 million metric tons of carbon equivalents* less than typical separate heat and power, resulting in annual emissions reductions equivalent to:

Planting 16,482 acres of forest

or

Removing the emissions of 10,988 automobiles

*The CHP Partner Greenhouse Gas 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.

Thank you for your time and attention.

Contact:

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U.S. Environmental Protection Agency

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