

U.S. DOE GULF COAST CLEAN ENERGY APPLICATION CENTER

The U.S. Department of Energy Gulf Coast Clean Energy Application Center aims to increase regional use of clean energy technologies including CHP, district energy, and waste heat recovery. We provide services to stakeholders in Louisiana, Oklahoma, and Texas.

Services

- **Education and Outreach**
We engage with stakeholders, allies, potential end-users, and others with an interest in clean energy. We organize presentations, workshops, webinars, newsletters, and other forms of outreach on relevant topics.
- **Policy Development**
We monitor and inform state legislation and regulation relating to clean energy. We provide technical expertise, policy support, and information to policymakers, industry, and the public.
- **Project Support**
We are a source of independent information for potential clean energy adopters. Our services include project feasibility studies, economic modeling, performance specs, regulatory analysis, referrals to local resources, and other types of technical support.

Benefits of Clean Energy

- **Economic**
Clean energy systems reduce facility operating costs. These systems increase energy efficiency and reduce purchased electricity costs. The savings produced by clean energy systems often result in attractive returns on capital investments.
- **Energy Security and Reliability**
Clean energy systems generate power and heat at the facility using clean, secure natural gas. They reduce or eliminate a facility's dependence on the electrical grid. In the event of a grid outage, clean energy systems can operate independently of the electrical grid, thereby allowing continued operations.
- **Environment**
Clean energy systems reduce emissions of global warming pollution and criteria pollutants. Projects typically result in a reduction of CO₂ emissions by 50% and reduce SO₂ and NO_x emissions by over 90%. Many clean energy systems produce no mercury and use no water.



CLEAN ENERGY

COMBINED HEAT AND POWER

CHP technologies generate electrical and thermal energy in a single, integrated system close to the point of customer energy demand. CHP systems are highly efficient, have relatively low emissions, and provide energy security.

DISTRICT ENERGY

District energy systems circulate steam, hot water, or chilled water underground to a multitude of buildings from a single central plant, sparing customers the need to purchase and operate their own boilers and chillers.

WASTE HEAT RECOVERY

Many industrial facilities typically release large amounts of valuable thermal energy that can be captured and reused. Waste heat recovery captures excess heat from industrial facilities and converts it into clean electricity and useful steam.





www.GulfCoastCleanEnergy.org

Clean Energy Candidates

Clean energy projects can be implemented in a wide variety of settings, including industrial facilities, institutional facilities and campuses, and commercial buildings.

Industrial - Many industrial facilities can benefit from CHP and waste heat recovery. Candidate sites include chemical production, refining, food processing, pharmaceuticals, pulp and paper, semiconductors, rubber and plastics, and other types of manufacturing and fabrication.

Institutional - Institutional facilities and campuses can benefit from CHP and district energy to serve campus energy needs. Candidate facilities include universities and colleges, hospitals and medical centers, downtown energy systems, and wastewater treatment facilities.

Commercial - Many commercial buildings can benefit from the energy security and environmental performance of CHP. Candidate facilities include data centers, hotels and casinos, multi-family housing, office buildings, refrigerated warehouses, nursing homes, restaurants, and numerous other types of facilities.

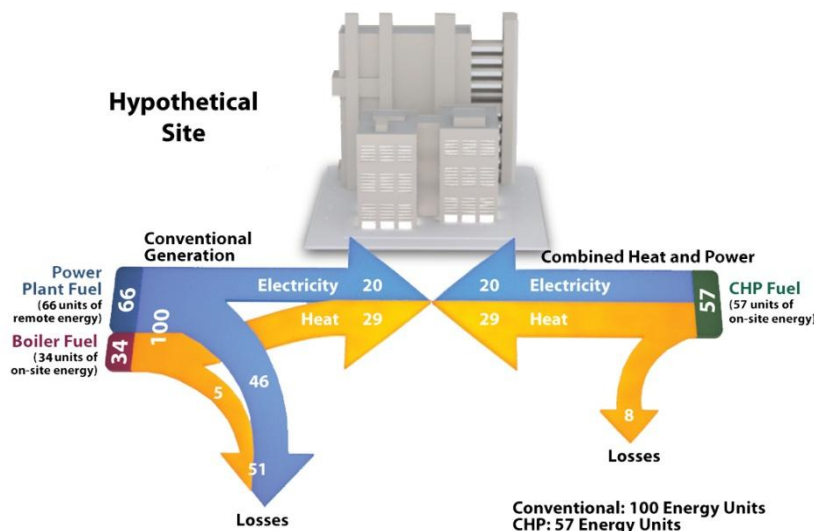
Best User Profile

CHP is ideally suited for those facilities that have the following characteristics:

- Coincident thermal loads
- Low seasonal variation in loads
- Continuous operation (24-365)
- High power reliability needs

Efficiency comparison

CHP provides greater efficiency than traditional separation of heat and power. Compared to the conventional approach, CHP can increase the efficiency of total energy supply from roughly 50% to 60-90% as shown in the graphic below. This efficiency gain results in an economic value to adopters, environmental benefits, and enhanced energy security.



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