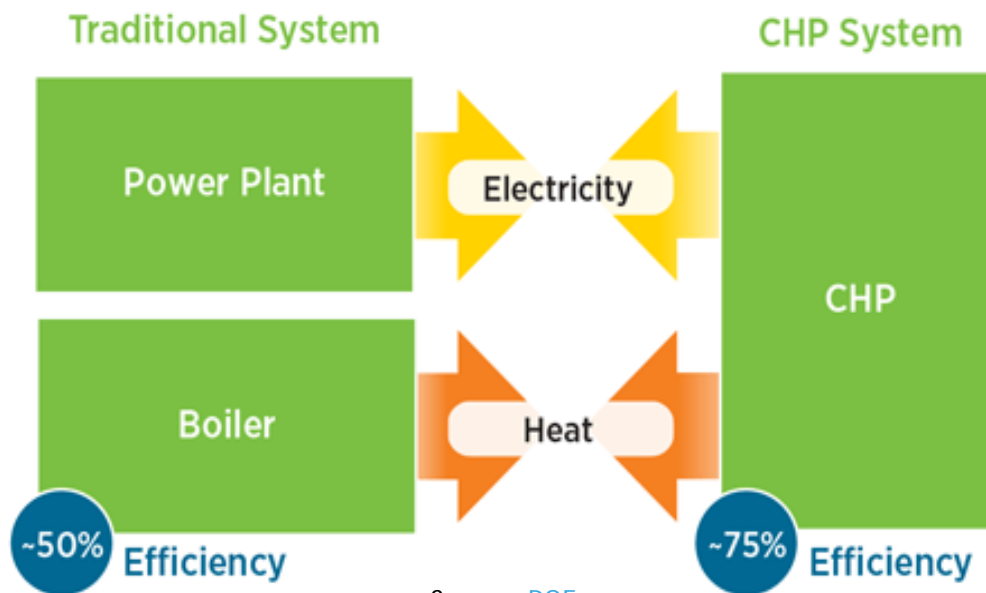


Combined Heat and Power / Combined Heat and Power Incentives

Description:

Combined heat and power (CHP) allows large industrial users with on-site electricity generation to leverage the heat produced by that generation for beneficial uses in production and building or district heating and cooling. Sometimes referred to as cogeneration, the primary benefit of CHP is very high system efficiency. Whereas separate electric and heating systems may have 40-50% efficiency, CHP offers system efficiencies in the 70-80%+ range (see figure below).



The fuel for CHP systems is typically natural gas, which might yield a climate benefit over grid power, especially considering the enhanced thermal efficiency. A key consideration in CHP deployment is identifying the right application - a constant electric and heating/cooling load. Breweries, universities, and hospital complexes are all examples of suitable applications. Smaller CHP systems like fuel cells and microturbines have been gaining in popularity and are opening the market to a wider range of customers.

Discussion of the Policy:

CHP systems are typically located closer to consumption, which decreases the likelihood of service interruptions and reduces strain on the local distribution grid. In some cases, these systems can disconnect from the grid, or "island". These attributes make CHP systems very resilient energy systems for users that require reliable heat and power and, CHP systems also contribute resiliency benefits to the local or regional grid. In a 2018 [report](#), the American Council for an Energy-Efficient Economy (ACEEE) argues that CHP's potential is likely to remain "unrealized under current policies and practices" because the resiliency benefits it offers are not fully valued. State policies, including emissions regulations, might also acknowledge and assign a value to the emissions and efficiency benefits provided by CHP.

CHP tends to suffer from the lack of a clear home in state policy, defined in some states as efficiency and in others as clean or even renewable energy. Some states include CHP technologies in their energy efficiency resource standard (EERS), others in their renewable or alternative energy portfolio standard, while others do not have a clear statutory definition of CHP. The lack of consistent language for regulating CHP leads to difficulty in implementing national incentive programs.

From a public policy perspective, a key consideration to deployment is having a clear utility tariff for customers who opt to add CHP. Utilities include 'stand-by' charges in their rates for customers that have onsite generation but may need backup power on occasions where their on-site generation is offline. Clear and consistent tariff design is the lynchpin of CHP deployment. These tariffs should not discourage installation of CHP through cost prohibitive charges and exit fees. Legislation directing a public utilities commission (or their equivalent) to design and approve a clear standby charge for CHP is an important place to focus in this policy area.¹ Interconnection standards can also hinder the adoption of CHP and policies addressing the interconnection of CHP systems can be another important piece of ensuring adoption of this resource.

Example State Programs:

In addition to enabling policies, several states have launched initiatives to encourage CHP adoption:

- Delaware's Combined Heat and Power Grants:
<https://dnrec.alpha.delaware.gov/climate-coastal-energy/efficiency/energy-efficiency-investment-fund/>
- Maryland's Combined Heat and Power Grant Program:
<https://energy.maryland.gov/business/Pages/MEACHP.aspx>
- New Jersey's Clean Energy Program: Combined Heat and Power:
<https://www.njcleanenergy.com/commercial-industrial/programs/combined-heat-power/combined-heat-power>
- Northeast Clean Heat and Power Initiative:
<http://nechpi.org/>

The U.S. Department of Energy (DOE)'s [CHP Technical Assistance Partnerships \(CHP TAPS\)](#) provide technical, strategic, and other assistance to support CHP deployment throughout the U.S.

Key Components:

CHP policies can include:

- Clear definition of CHP as either an energy efficiency or clean energy technology in an EERS, renewable portfolio standard, or clean energy standard.
- Interconnection and net metering policies that include CHP as an eligible technology.
- CHP friendly standby rates or tariffs.
- Financing and financial incentives for CHP projects.
- Requiring the consideration of CHP's resiliency, efficiency, and emissions benefits in cost benefit analyses.

¹ For more on CHP standby tariffs, see this Regulatory Assistance Project white paper:
<https://www.raponline.org/news/standby-rates-for-combined-heat-and-power-need-a-fresh-look/>

More Information:

- ACEEE, Combined Heat and Power:
<https://aceee.org/topics/combined-heat-and-power-chp>
- ACEEE, Combined Heat and Power Toolkit:
www.aceee.org/sector/state-policy/toolkit/chp
- ACEEE, Valuing Distributed Energy Resources: Combined Heat and Power and the Modern Grid:
<https://aceee.org/white-paper/valuing-der>
- U.S. Environmental Protection Agency, Is My Facility a Good Candidate for CHP?
<https://www.epa.gov/chp/my-facility-good-candidate-chp>