



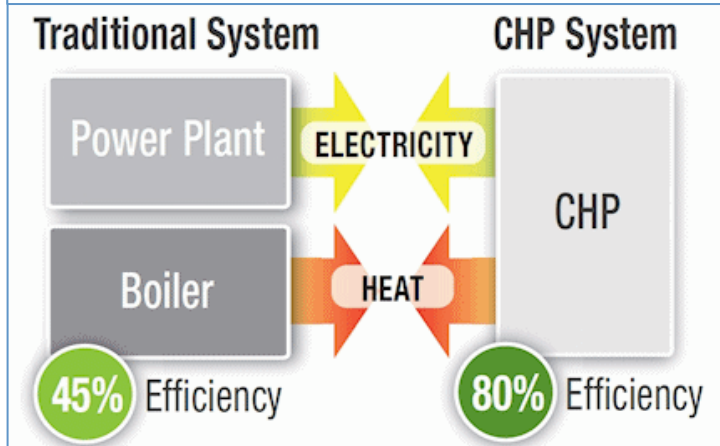
Combined Heat and Power and Waste Heat to Power Standby Rates-Best Practices

What is Combined Heat and Power?

Combined heat and power (CHP) and waste heat to power (WHP) offer the U.S. industrial sector a source of clean and efficient energy that increases manufacturing competitiveness while reducing emissions. CHP generates both heat and electricity from a single fuel source making the technology twice as efficient as traditional power generation. This saves money, reduces fuel use, and generates lower emissions. Because CHP and WHP systems produce electricity on site, they can operate even when the grid goes down. This reduces the burden on the grid and increases its resiliency, which makes CHP and WHP systems attractive to industry, public officials, emergency response professionals, as well as central utilities.

CHP Systems Are Nearly Twice as Efficient as the Separate Production of Heat and Electricity.

Source: U.S. Department of Energy Midwest Clean Energy Application Center, About Combined heat and Power, <http://midwestcleanenergy.org/>



Standby Rates Can Impose Excessive Costs

Despite these benefits, utilities often charge standby rates to facilities using CHP and WHP to cover the risk of grid power being needed unexpectedly. These rates are often unreasonably high and act as a deterrent to installing CHP and WHP systems. Utilities assert that these fees are needed to support a variety of services, including:

- Backup power during an unplanned generator outage;
- Maintenance power during scheduled generator service for routine maintenance and repair;
- Supplemental power for customers whose on-site generation under normal operation does not meet all of their energy needs;
- Economic replacement power when it costs less than on-site generation; and
- Delivery associated with these energy services.

These fees are most commonly calculated on the unrealistic notion that every CHP and WHP system will fail simultaneously and that this failure will occur during a period of peak demand – placing a significant and unexpected burden on the central utility. Because of these assumptions, standby rates are typically much higher than actual costs. This is the case in most states including Florida, Montana, and Colorado. Utilities calculate standby rates by adding energy charges (\$/kWh) – the



actual energy provided to the CHP or WHP system – to the demand charges (\$/kW), which are costs to the utility for the inconvenience having to supply unexpected electricity.

Utilities in nearly every state - including Arizona, New York, Hawaii, and Michigan - assess additional fees by charging “ratchets” if the CHP or WHP system unexpectedly fails or shuts down at any point (requiring the facility to draw power from the grid). A ratchet is a penalty that may be applied for up to a year after the system fails. In this way, a brief problem with a CHP or WHP system can result in persistent penalties. These penalties may be high enough to discourage an industrial user from investing in CHP or WHP in the first place.

Best Practices

To encourage businesses to adopt CHP and WHP, utilities and PUCs should adjust standby rate policies.

Sources

American Council for an Energy-Efficient Economy, “Policies and Resources for CHP Deployment: CHP- Friendly Standby Rates.” <http://bit.ly/19hbmRs>

The Pew Charitable Trusts. May 2013. “Industrial Energy Efficiency.” <http://bit.ly/13dzqT6>

State and Local Energy Efficiency Action Network. 2013. “Guide to the Successful Implementation of State Combined Heat and Power Policies,” Chapter 2. Prepared by B. Hedman, A. Hampson, J. Rackley, E. Wong, ICF International; L. Schwartz and D. Lamont, Regulatory Assistance Project; T. Woolf, Synapse Energy Economics; J. Selecky, Brubaker & Associates. <http://1.usa.gov/1aCJSWD>

U.S. Environmental Protection Agency. December 2009. “Standby Rates for Customer-Sited Resources,” Prepared by Regulatory Assistance Project and ICF International. <http://1.usa.gov/1bzZUDl>

Best practices include:

- Rates should be customized, appropriate, and transparent. Ratchets should either be eliminated, or be assigned for no more than 30 days after an unexpected outage. Portland General Electric in Oregon, for instance, does not employ a ratchet.
- Rates should be weighted to energy charges (actual energy used) rather than demand charges (inflated rates the utility charges for providing power). For example, Portland General Electric imposes a demand charge in the month of the outage, which does not affect savings in other months.
- Demand charges should reflect actual cost to the utility, rather than charges that assume energy will be needed at peak demand; and
- Where market regulations permit, utilities should work with their customers to allow CHP and WHP users to buy backup power at market prices, purchase economic replacement power, and offer a self-supply option for reserves.