

Power Purchase, Lease Agreements Make Combined Heat & Power More Affordable - By Glenn Hasek

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With electricity and natural gas prices about to follow gasoline prices into the stratosphere, there is no better time to consider combined heat and power (CHP) as a means to lower utility bills - especially with CHP system providers offering so many attractive financing options. In fact, with some vendors you can have an on-site utility (power plant) installed with no upfront capital cost. CHP is ideal for hotels with 100 rooms and above.

CHP, also known as cogeneration, is generated onsite by a plant powered by any number of systems: fuel cells, reciprocating engines, turbines, or microturbines. Electricity generated is used to meet a portion of the hotel's needs and byproduct heat is used to heat hot water or steam, or even provide cooling. While cogeneration equipment can be purchased outright and pay handsome dividends years down the road, many hotels today are choosing alternative financing arrangements.

Earlier this summer, the Hotel Indigo Boston-Newton Riverside installed an on-site cogeneration facility. It was provided by American DG Energy. Under the terms of the agreement, Hotel Indigo is receiving a substantial portion of its electricity, space heat, swimming pool heat and domestic hot water directly from an on-site cogeneration facility. The equipment is providing 100 kW of electricity and 732,000 btu's per hour of energy. American DG Energy owns and maintains the equipment and sells the energy produced at a rate lower than the local utility. Hotel Indigo avoided a large capital expenditure and is paying a lower energy bill each month.

Guaranteed Rate Discount

According to Barry Sanders, president of Waltham, Mass.-based American DG Energy, with a power purchase agreement the Hotel Indigo receives a utility bill from American DG Energy each month. The energy rate is discounted 10 percent lower than the hotel would have been paying had it been purchasing its power from its local utility.

'The customer gets the guaranteed rate for the life of the contract,' says Sanders, who adds that a typical contract is for 15 years.

Cogeneration systems can provide about 40 to 50 percent or more of a hotel's electricity needs and up to about 80 percent of heat and hot water needs. Cogeneration systems can be about 90 percent efficient, whereas electricity obtained from the grid is only 33 percent efficient. Boilers are about 60 percent efficient. One side benefit of cogeneration is that it can reduce a boiler's run time, which helps to extend its life. In fact, in some instances boilers can be shut down in the summer. Systems such as American DG Energy's On-Site Utility can also provide backup power during an outage.

Backup System Saved the Day

Just a few weeks ago, during a power outage, American DG's cogeneration system provided the power the Hotel Indigo Boston-Newton Riverside needed to power its lighting, air-conditioning, refrigerators and freezers in the kitchen, telephone system, computers and the lounge and restaurant areas. According to Mark Shouger, general manager of the Hotel Indigo Boston-Newton Riverside, the On-Site Utility carried a load of approximately 80 kW for six to seven hours.

In addition to a power purchase arrangement, a hotel may choose to lease a cogeneration system. Southborough, Mass.-based Co-Energy America, Inc. offers such an option. With an operational lease, the amount financed is funded out of the hotel's utility budget. The cost is covered by the savings the cogeneration system generates. The hotel pays for the natural gas needed to power the cogeneration system just as it normally would pay for natural gas but the responsibility of installing and maintaining the system is that of Co-Energy America or whatever other company is providing the service.

Tim Graham, sales and marketing manager for Co-Energy America, says most of his company's customers opt for a straight operational lease because they get all of the savings, as well as the tax benefits. His company helps its customers identify available rebates and incentives to lower cogeneration system costs. That is critical in the New England area where Co-Energy America operates. Graham says electricity costs there have increased 66 percent in the last five years.

Catania Hospitality Group, Hyannis, Mass., has had Co-Energy America install systems in two of its hotels and is looking to add a system in another property.

'There has been a pretty good financial savings and we know we have been doing a good thing,' says Bill Catania, president of the company.

Energy Services Agreement Option

UTC Power, a United Technologies Company based in South Windsor, Conn., offers its customers an energy services agreement option-similar to the lease arrangement offered by Co-Energy America. Customers purchase the energy themselves but UTC Power provides the equipment and maintenance service.

'Any lease agreement is a great thing in these times,' says Andy Kristoffersen, Raleigh, N.C.-based general manager for national account sales for UTC Power.

Even with power purchase and lease arrangements available, there are companies with the means and the willingness to purchase cogeneration equipment themselves. According to Kristoffersen, Host Hotels & Resorts purchased two PureComfort microturbine systems from UTC Power for the New York Marriott Downtown. The system was inaugurated on June 3 this summer.

Waste heat generated by the system's 11 microturbines is used for space heating, hot water and for air-conditioning. The overall system efficiency will approach 80 percent, almost three times that of a conventional power plant. On an annual basis, the two PureComfort systems will reduce carbon dioxide emissions by about 1,700 tons (the equivalent of 360 acres of forest) and nitrogen oxide emissions by 10 tons (or the equivalent of the emissions of 530 cars), based on the U.S. electric utility grid emission averages. In addition, 80 percent of annual steam usage will be displaced with a more cost-effective means of cooling and heating the hotel.

The vendors mentioned above, each of which has its own geographical coverage areas, are just a few examples of companies that provide innovative financing arrangements to make combined heat and power affordable.

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