

Hotels “green” their properties with combined heat and power systems

With energy representing one of the top three costs in a hotel's operating budget, approaches to lowering energy costs have become general manager and corporate-level strategic decisions. At the same time, guests' and event planners' awareness of green practices at hotels has elevated sustainability into a key marketing buzzword for building customer loyalty and attracting sought-after meeting and convention business.

Many hotel properties are turning to a proven approach that's as old as Thomas Edison but as relevant and cost-saving as ever: combined heat and power (CHP) systems, sometimes called cogeneration. CHP systems simultaneously produce two types of energy—heat and electricity—from one fuel source, usually clean and abundant natural gas. The CHP process is very similar to an automobile, where the engine provides the power to rotate the wheels and the byproduct heat is used to keep the passengers warm in the cabin. These systems capture the heat from the engine and reuse it to heat and cool the air and water. This two-for-one approach offers tremendous efficiency, which translates into measurable cost savings and environmental benefits. The savings is particularly dramatic when the hotel property has an on-site pool, laundry or banquet area, which, traditionally, are large energy consumers.

Clean, green and smart

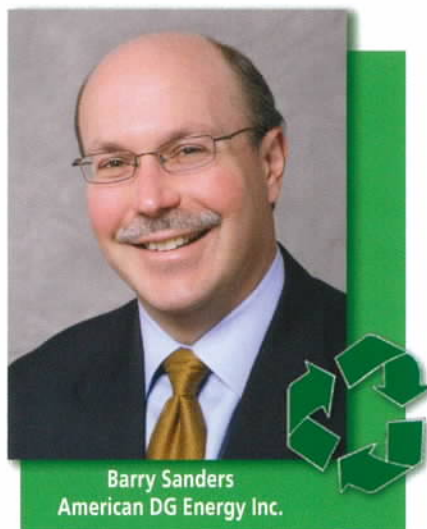
Having a CHP system on site allows a hotel to become a green property in the fullest sense. On-site utilities reduce greenhouse gas emissions, not only benefitting the environment but potentially providing LEED credits to the property. Hotel marketing can accurately relate how the specific property, meeting or event, or indeed the entire international chain, has contributed to saving acres of forest or keeping cars off the road through reduced CO₂ emissions. The hotel's CHP system has this power due to its nearly 90% efficiency.

The CHP and efficiency industries have developed a range of financing options, such as an On-Site Utility program, that eliminate the customer upfront costs, operating responsibilities, fuel costs and other requirements, so that they can see immediate energy savings and positive cash flow from installing CHP. Hotels simply pay for the energy at a guaranteed lower price. Without any capital budget requirements, an On-Site Utility provides immediate positive cash flow. This allows the hotel to obtain the benefit and still focus on hospitality.

The DoubleTree Suites by Hilton Boston, located along the Charles River next to Cam-

bridge, MA, recently won an internal chain-wide sustainability award for energy savings, carbon emission reductions and improved operational efficiencies partially due to the installation of a CHP system.

Hilton Worldwide has a strong commitment to sustainability across its portfolio of 10 hotel brands, with a number of chain-wide initiatives under way including its LightStay sustainability measurement system. Hilton Worldwide is the first major multi-brand company in the hospitality industry to require property-level measurement of sustainability. LightStay also includes a meeting impact calculator that offers meeting planners a way to measure the environmental impact of any meeting or con-



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ference held at a Hilton Worldwide property based on this data.

Since December 2010, the CHP system at the DoubleTree Suites by Hilton Boston has been producing clean energy in the form of electricity, space heat and domestic hot water. The energy is produced with a 75 kW combined heat and power system. The DoubleTree Suites by Hilton Boston only pays for the discounted energy, with all other operations and costs handled by the CHP provider. “It's almost a no-brainer of a business decision,” said Joseph Dadiago, general manager of the DoubleTree Suites by Hilton Hotel Boston. “With our CHP system, we are saving on energy costs and have reduced CO₂ emissions—without any capital investment and with a guaranteed lower energy cost than buying from our local utilities.”

When the Hotel Indigo Boston-Newton Riverside remodelled in 2007, it needed a new CHP system to replace an aging infrastruc-

ture and support the facility's “eco-friendly” branding. The facility strongly promotes its 62,000-gallon outdoor pool as both a daytime oasis and a nighttime bar and hotspot, yet heating an outdoor pool in Massachusetts—even seasonally—consumes a hefty portion of the property's \$400,000 annual energy costs.

In 2008, the hotel upgraded to a new CHP system in exchange for the hotel buying back that energy at a rate lower than the local utility. The 100 kW CHP system also offsets up to 328 tons of CO₂ each year. Bruce Leaver, the hotel's general manager, estimates the firm is saving at least 20% over the cost of purchasing electricity and hot water on the open market from local sources. Leaver's chief engineer particularly enjoys being able to rely on someone else to automatically monitor system performance and provide timely maintenance and repairs.

The hotel's on-site utility also has a side benefit of allowing the hotel to retain the quality of the guest experience even during a power outage. Despite local electric utilities being off-line, Hotel Indigo's CHP system took over and powered critical items such as lighting, air conditioning, refrigerators and freezers, telephone system, computers and the lounge and restaurant areas during an October 2008 storm, carrying the load for over 5 hours. While the hotel has not had to repeat the experience, Leaver said it's comforting to know that the system is at the ready.

Smarter hotel heat and power

While many properties are investing in upgrading rooms and amenities, often the capital and time available for infrastructure projects for neglected boilers and chillers is difficult to find. An on-site utility does not impact the budget and can delay the need for boiler or chiller upgrades or replacements.

CHP systems are increasingly deployed in hotels because they are a clean, green and efficient smart energy approach that avoids wasted heat, saves money and improves a hotel's environmental profile. **HB**

Barry J. Sanders is president and COO of American DG Energy Inc., an On Site Utility offering clean electricity, heat, hot water and cooling solutions to hospitality, healthcare, housing and athletic facilities at lower costs than charged by local utilities—without any capital or start-up costs to the energy user. Sanders has held executive roles at MicroLogic, Inc., Andover Controls Corp. and Tecogen Inc. and managed R&D projects for the New York State Energy Research & Development Authority (NYSERDA).