



**Natural gas technology helps
drive cleaner air**

Sustainable energy

Combined heat and power systems provide reliable and efficient 24/7 operation

By Tonya McMurray

Facilities that have high energy demands on a near-constant basis need reliable solutions that keep the power on while providing cost savings and efficient energy use. For many, combined heat and power (CHP) systems are the key to meeting sustainability goals while providing around-the-clock energy, heating and cooling.

CHP, also known as cogeneration, is the simultaneous production of electricity and thermal energy from a single source of energy. CHP systems offer a reliable, affordable and energy efficient solution that allows facilities to generate electricity onsite and then capture waste heat generated during the process to provide steam, hot water or chilled water that can be used for space heating, cooling or industrial processes. In addition,

CHP can provide backup power in the event of grid outages.

CHP technology can be deployed quickly and cost-effectively in almost all geographic locations, according to the U.S. Department of Energy (DOE). It is frequently used in large commercial and industrial applications due to its cost and energy efficiency.

According to the U.S. Environmental Protection Agency, CHP can achieve efficiencies of more than 80% compared to 50% for typical technologies such as conventional electricity generation and an on-site boiler. Because of this increased efficiency, CHP systems produce less carbon emissions than separate heat and grid power generation.

PROVIDING RESIDENTIAL COMFORT AND AMENITIES

National Real Estate Development LLC wanted to ensure that its new 1199 Ludlow residential project would meet its environmental, social and governance (ESG) goals while providing a comfortable experience for residents. Part of Philadelphia's East Market, a pedestrian-oriented, mixed-use project with shopping, dining, business and residential facilities, 1199 Ludlow is a 245,000 square-foot residential tower with 240 apartments along with an outdoor swimming pool, fitness center and other amenities.

The apartment building includes a high percentage of glass, increasing the need for an energy efficient way of providing heat and cooling to the building. National Real Estate Development turned to E-Finity Distributed Generation LLC for a

solution that would increase energy efficiency and lower energy costs.

E-Finity installed two Capstone C65 ICHP Grid Connect Microturbines to provide electricity and domestic hot water as well as heat for the building's year-round outdoor pool. Mounted on the rooftop outside of public view, the microturbines increase the building's energy efficiency and help meet Leadership in Energy and Environmental Design (LEED) goals.

"The low emission microturbines and CHP application were favorably received by the city of Philadelphia, helping to speed up the project approval process," said Jeff Beiter, founder and CEO of E-Finity.

The system reduced emissions and cut energy costs by 20%, Beiter said. In addition, the 1199 Ludlow project and two other projects in the development's first phase were awarded LEED Silver V3 certification.

"CHP was a great match for the year-round electrical and thermal loads," he said. "National Real Estate uses 100% of the energy generated, making it a trophy cogeneration project. They were so pleased, they turned to E-Finity to deliver, install and operate a second project just a couple of blocks away." ●



■ National Real Estate Development LLC reduced its emissions and energy costs 20% with the implementation of a CHP system using two Capstone microturbines for its 1199 Ludlow residential project.

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E-Finity Distributed Generation LLC
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