Verizon

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energy Reinvented

Verizon Calls for Clean, Reliable Energy

with the PureCell® Model 200 Fuel Cell Powerplant

Verizon makes the call to install seven UTC Power fuel cells

The Verizon call routing center in Garden City, New York, is home to the largest U.S. commercial fuel cell installation of its kind. The 292,000-square-foot office accommodates 900 employees who serve more than 35,000 telecommunication customers in the area. Verizon's need for extremely reliable energy, generated efficiently and with minimal environmental impact, led the company to investigate the benefits of on-site combined heating and power (CHP). Verizon selected fuel cells, one of the cleanest power-generating technologies available today, for the major power component of their CHP solution. The fuel cells from UTC Power generate 200 kilowatts each, providing a total of 1.4 megawatts of clean power to the center.

Equipment:	Seven PureCell® Model 200 natural gas fueled powerplants
Commissioned:	June 2005
Location:	Garden City, New York
Provides:	Electrical power Backup power Exhaust heat recovered for cooling and heating
Availability:	88%

Energy Productivity

The CHP component of the Verizon installation enhances its overall efficiency. The high-grade waste heat from the fuel cells is captured and used to provide a portion of the energy for two absorption chillers for cooling in the summer and to supplement the heating system in the winter.

The CHP systems can achieve overall efficiencies of approximately 90 percent, far greater than the 33 percent typical of a central powerplant. In addition, the PureCell® solutions are part of an innovative monitoring system that ensures all elements operate at optimized conditions. High system efficiencies translate into greater fuel utilization, and contribute to the conservation of natural resources and energy.

UTC Power Advantage

PureCell® Solution Advantages

Energy Productivity

- *System efficiencies increased to 90% (33% for traditional power sources)*
- *Energy costs reduced*
- *Natural resources conserved*

Energy Security

- *Continuous operation provided*
- *Business services protected*
- *Community safety enhanced*

Energy Responsibility

- *Carbon footprint reduced*
- *Water conserved*
- *Harmful emissions minimized*
- *Sound pollution eliminated*

Proven Experience

- *50 years of fuel cell experience*
- *Sole fuel cell supplier to NASA for manned space missions for over 40 years*
- *Over 1.3 billion kilowatt hours of commercial fuel cell operation*

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Energy Security

To provide their customers with the ultimate service, Verizon installed seven dual-mode UTC Power fuel cells. The PureCell® units are part of an intricate backup power system designed to run in parallel with the grid under normal circumstances, and independent of the grid in the event of a power failure or natural disaster. Under an agreement with the Long Island Power Authority (LIPA), the fuel cells also run continuously during periods of peak demand, providing additional cost savings to Verizon.

"We are proud Verizon chose UTC Power to provide clean, reliable energy to their critical call routing center. The PureCell® Model 200 solution's durability offers significant, long-term benefits to Verizon stakeholders, Long Island residents and the environment."

Jan van Dokkum
President, UTC Power

Energy Responsibility

Verizon is proving that sustainability makes economic sense. While reducing its carbon footprint, it's also conserving natural resources. The UTC Power fuel cells will reduce the facility's carbon footprint by 5,400 tons each year. To achieve the same positive environmental impact, 1,150 acres* of forest would need to be planted.

The power generated by these fuel cells saves over 5.5 million gallons† of water each year that would otherwise be wasted by conventional electrical generation. That's enough water to fill 9 Olympic-size swimming pools. Water conservation is especially important as humanity battles to conserve precious water resources.

Reduction of harmful emissions like nitrogen oxides (NOx), is yet another environmental benefit of fuel cell technology. NOx emissions will be reduced at Verizon by almost 19 tons each year, which equates to the same environmental benefit as removing 1,000 cars‡ from the road.

* Each acre of forest assumed to absorb 1.3 ton of carbon per year (Ref: Intergovernmental Panel on Climate Change).
† Based on the average use of 500 gal/MWhr of power generation plants in the U.S. (Ref: U.S. Geological Survey).
‡ Each car assumed to generate 38 lb NOx/year (Ref: U.S. EPA).

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