

Distributed Generation

The Richard Stockton College of New Jersey

Background

The Richard Stockton College of New Jersey was seeking to install distributed generation technology to generate inexpensive electricity on-site while providing free hot water and building heat. In keeping with the College's history of innovation in energy conservation, the selected technology was to complement its existing environmentally friendly technology and serve as an additional showcase in their green energy program.



The Richard Stockton College of New Jersey. Stockton College is a mid-sized liberal arts college located on 1,600 acres within the southeastern New Jersey Pinelands. A strong proponent of environmentally friendly technology, the college promotes a self-imposed obligation to not only implement the most efficient technologies but to educate the public about green programs as well. The fuel cell, the first application of its kind in southern New Jersey, represents an excellent opportunity for Stockton to increase awareness and teach about its many benefits.

Profile

Stockton partnered with South Jersey Energy for this distributed generation project. To meet the green energy needs of the college, SJE selected a United Technologies Fuel Cell for the application. SJE provided for the procurement and installation of the fuel cell as well as for the electrical and mechanical interconnection to the college's existing infrastructure. In addition, SJE worked with the local electric utility to ensure compliance with grid interconnection. The 200-kilowatt fuel cell supplements Stockton's existing electricity supply and provides free hot water for the college's E-H wing. Promoted as green technology, the fuel cell uses natural gas in a chemical reaction to generate electricity and heat without producing air pollutants.

The college is very pleased with the outcome. The fuel cell is estimated to generate an average of one-tenth of the campus' electricity needs, giving Stockton the lowest energy cost per student of any state college in New Jersey. The fuel cell installation reduces the college's electric costs by \$36,000 per year and its domestic hot water heating cost by \$40,000 per year translating into total annual savings of \$76,000. Using the fuel cell's waste heat also conserves 70,000 therms of natural gas annually. In addition to the energy savings, the fuel cell serves the college in providing research and education opportunities for this newly emerging generation technology. SJE and Stockton successfully applied for and received state and federal rebates, which significantly lowered the project's net cost.

Results

Client: The Richard Stockton College of New Jersey

Location: Pomona, New Jersey

Services: Turnkey combined heat and power project

Plant Capacity: 200-kilowatt fuel cell; Electricity:
1,752,000 kWh/year; Hot water: 900,000 Btu/hr

Developer: South Jersey Energy

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