



SureSource Recovery

By FuelCell Energy

Utility-Owned/Pipeline Application

Harnessing unused energy in a **natural gas letdown station's** pressure-reduction process to generate **ultra-clean power** with **industry-leading electrical efficiency**

CHALLENGE:

Throughout the world, natural gas is transported long distances in pipelines under high pressure. This high pressure is needed to maintain a high volume of flow in the system; however, before distributing gas to homes and businesses, the pressure must be reduced, which is undertaken at regional and local utility let-down stations. As the pressure is reduced, the gas cools as it expands. To prevent the gas systems and pipeline from freezing, the let-down stations use a gas-fired burner to generate heat. This traditional approach loses energy in the pressure reduction, and the heat production emits pollutants and carbon.

SOLUTION:

FuelCell Energy's SureSource Recovery plant located at natural gas letdown stations provides **continuous, ultra-clean power** and **harnesses unused energy** in the station's pressure-reduction process to generate additional zero-emissions power, all in a **highly efficient** manner. The fuel cell, configured for combined heat and power (CHP), provides the heat otherwise produced from the gas-fired boilers, **improving the station's carbon footprint and reducing emissions.**

The SureSource Recovery solution is comprised of a SureSource fuel cell plant and a turbo-expander. The turbo-expander output is based on the amount of gas flow through the pressure-reduction station. The combination provides a unique continuous and variable output electric power generator. The solution operates in parallel with the existing let-down station and offers the utility station operator the ability to add a clean grid power resource at the station while improving the efficiency of the natural gas delivery system.

NASDAQ: FCEL

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Project Spotlight

SureSource Recovery



Customer: Avangrid

Location: Glastonbury, CT

Size: 3.4 megawatts (MW)

Operational Date: April 2016

"We are harnessing energy that is typically lost in the gas letdown process and doing so in a highly efficient and environmentally friendly manner."

*- James P. Torgerson
Chief Executive Officer, Avangrid*

Project Highlights

- The 3.4 megawatt SureSource Recovery plant is located at a natural gas pressure reduction station owned by Avangrid subsidiary Connecticut Natural Gas Corporation.
- The system includes a 2.8-megawatt SureSource 3000 fuel cell plant and a turbo expander that produces an additional 600 kilowatts of ultra-clean power. The SureSource Recovery plant harnesses wasted energy during the station's natural gas pressure "letdown" process and that energy is used spin the turbo expander and generate additional electricity.
- Configured for combined heat and power (CHP), the heat generated from the fuel cell supports the energy recovery process, improving the station's carbon footprint and enhancing the project's economics by replacing the need for combustion based boilers.

Project Structure

- The power plant was purchased by a subsidiary of Avangrid.
- FuelCell Energy manufactured and installed the plant and remotely operates and maintains it under a long-term service agreement.
- The electricity generated is sold to the local electric utility under a 20-year contract.