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Microturbines can save on energy, PGW says

October 16, 2011 | By Andrew Maykuth, Inquirer Staff Writer

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The microturbine installed behind the Philadelphia Gas Works headquarters is contained in a 12-foot-long beige steel box that has all the cosmetic appeal of a shipping container.

But beauty is in the eye of the beholder, and this gas-fired combined heat and power unit - that's CHP in power-generation lingo - does some remarkable things that excite PGW executive Joseph A. Smith.

"CHP is the sexy thing right now," said Smith, vice president of marketing for the city-owned utility.

The microturbine - essentially a jet engine - generates 200 kilowatts of electricity, about 40 percent of the PGW building's peak demand.

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But rather than blowing the 580-degree waste heat directly into the atmosphere, the hot exhaust boils water that can help heat or cool the building's interior.

"We can use the heat just about all year-round," said Smith.

The unit is expected to save PGW \$130,000 in electrical and heating costs, but its larger value may be as a sales tool to persuade other large institutions to generate their own electricity and steam rather than buying it from PGW's competitors, Peco Energy Co. and Veolia Energy North America Holdings Inc., the operator of the Center City steam loop.

The project's \$1.2 million cost was partly covered by a \$465,000 federal stimulus grant awarded by the Pennsylvania Department of Environmental Protection. Political leaders, including Lt. Gov. Jim Cawley, attended the official inauguration this month.

"Technology like microturbines shrinks our carbon footprint and conserves energy by making sure we waste less," Mayor Nutter said at the ribbon-cutting.

There is nothing new about CHP - cogeneration plants have been around since Edison invented the lightbulb.

But over the decades, electric generation became dominated by distant power plants connected to customers by large transmission lines. The current trend is to build hundreds of generation projects distributed around the grid, ranging from solar arrays to microturbines.

PGW is promoting microturbines and other types of combined heat and power projects as a means to selling more natural gas. As a landlocked utility serving a city whose population and industrial base have declined, PGW has a lot of underused infrastructure.

With the price of natural gas low, partly because of an abundance of fuel now being produced from shale formations such as the Marcellus Shale, PGW highlights the savings of natural gas over electricity or steam.

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