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Portland Water Bureau adds hydro generator

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The Portland Water Bureau will add to its renewable energy portfolio in 2011 with the addition of a hydropower generator at its Vernon HydroPark in Northeast Portland.

From the outside, little will change at the park, located at 1907 Northeast Skidmore.

But crews will begin installing a 25-kilowatt-capacity power generator below ground in January to capture energy from released water pressure. The project is expected to generate 90,000 to 150,000 kilowatt hours annually, which will be sold to the grid through PacifiCorp. The agreement is still being negotiated, but Peter Nierengarten, an engineer for the Portland Water Bureau, projected the bureau will net between \$5,000 to \$7,000 annually from the project.

"Essentially its kind of a retrofit at one of our existing facilities in Northeast Portland where we store water and we also have a couple of pressure reducing valves at that location," he said.

He explains the mechanics of the project this way: While delivering water throughout hilly Portland, the Water Bureau routinely adjusts the pressure of water moving through the system. "In an effort to move water from higher areas to lower areas, we have to reduce pressure to that water so we don't blow out the water heater in your home," he said.

The old method was to simply turn a valve, but that method wasted the energy released by the pressure change.

"Instead, we are going to use this generator to take advantage of that energy," much as a dam takes advantage of falling water, Nierengarten said.

The project adds to the Water Bureau's [energy efficiency and renewable energy goals](#), which aim to install 400 kilowatts of power-generating capacity within the utility by 2012. The bureau is about three quarters of the way to meeting that goal with its two solar arrays. A 267-kilowatt solar array is located at the Columbia South Shore Well Field, and a 12-kilowatt solar array is on the roof of a meter shop on North Interstate Avenue. The capacity translates into roughly 1.3 percent of the Water Bureau's total electricity use.

"We're a pretty big electricity consumer and we've just started down this path of creating our own renewable portfolio," Nierengarten said.

This latest addition at the Vernon HydroPark will cost \$220,000. Energy Trust and the Oregon Business Energy Tax Credit will each contribute \$35,000. Another \$85,000 will come from federal stimulus money, with the remaining \$65,000 paid for by ratepayers.



Google Satellite image of Vernon HydroPark

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