

Huge battery keeps energy going to electric grid, ACUA plant

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ATLANTIC CITY — From the outside, the Atlantic County Utilities Authority's latest renewable energy project looks like a shipping container and inside, like a bank of computers.

But it's something much less ordinary.

It's a huge, one-megawatt battery that constantly responds to the needs of the multistate electric grid run by PJM, officials said at a ceremony Monday celebrating the battery's recent installation. It can also help the ACUA spend less on energy at its wastewater treatment plant here, and help keep the plant running should the grid go down.

The new battery is located at the wastewater treatment plant but will be owned and operated by Viridity Energy under a 20-year agreement, officials said.

"Every two seconds we are putting in or taking out energy," said Viridity Director of Solutions Engineering and Accounts Paul Reed, speaking of the battery's main 24/7 job, called frequency regulation. "We respond to a signal PJM sends to operators."

The ACUA has 7.5 megawatts of wind power and a 500 kilowatt photovoltaic solar field on the site, which together supply about 60 percent of the plant's energy needs. It pulls supplemental energy from the grid.

On the most energy-consuming days, usually the hottest, the battery will stop doing frequency regulation and start providing power to the wastewater treatment plant, so it can avoid paying the higher peak demand rates.

"We will offset the load the plant would otherwise be taking from the grid," said Reed.

Half of the savings will go to Viridity and half to ACUA, he said.

Viridity has a fleet of batteries, located around the PJM region, including 9 batteries with 10 megawatts of storage capacity located in SEPTA properties around Philadelphia, said Reed.

Viridity used a Johnson Controls battery storage system and contracted with Rettew for Engineering and Construction Services.

Unlike big peak plants, which can take hours to start supplying power when most needed, the battery can respond inside a second, said Johnson Controls Director of Operations Douglas B. Williams.

Atlantic County Utilities Authority President Rick Dovey said batteries will revolutionize power generation and help with resiliency against events such as Hurricane Sandy.

“Renewable energy, for all of the positives, has one limitation — that power is intermittent; wind and solar are not always producing power when you need it. You must either use it or lose it,” Dovey said. “Not only will this battery allow us to store electricity generated from wind and solar, but it will also play an important role in balancing supply and demand of the electric grid.”

The project was a long time in the making.

A partnership between the ACUA and Viridity Energy was announced back in 2015, but Viridity ran into some challenges working out details with PJM and Atlantic City Electric, Reed said.

The company had a grant from the state Board of Public Utilities for the project, but the grant expired before it could finalize those details.

So Viridity had to reapply for the grant, which it got again for \$300,000.

Reed said one-megawatt batteries such as the one at ACUA typically cost about \$1 million to purchase and install. ACUA pays nothing of the cost.

New Jersey Board of Public Utilities President Joseph L. Fiordaliso said this is the first project of its kind to receive an incentive through the BPU’s Clean Energy Program.

The battery will also help keep the plant going should another serious storm or other event take the grid down, said Fiordaliso.

The ACUA wastewater treatment plant relied on backup diesel generators for 48 hours after Hurricane Sandy to treat wastewater, which prevented untreated sewage from overflowing and seeping into waterways, Dovey has said.