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Plus Power Breaks Open Market for Massive Batteries in New England

Large standalone battery plants had not succeeded in New England's capacity market. Until now.

JULIAN SPECTOR

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Two batteries from Plus Power will help store renewable power for use in place of fossil fuels at times of high demand.

Battery plants have established themselves in the sunny Southwest, but this week was the first time they won big in New England.

San Francisco-based developer Plus Power won two bids in the latest capacity auction held by the New England ISO, which operates the transmission grid and competitive power markets in six Northeastern states. That means that these two battery plants offered a compelling enough price to edge out some fossil fuel plants for delivering power on demand. And they did it without any help from federal tax credits because none of them apply to standalone batteries.

Plus Power now needs to build the plants: a 150-megawatt/300-megawatt-hour system near a cranberry bog south of Boston, Massachusetts and a 175-megawatt/350-megawatt-hour battery in Gorham, Maine. The seven-year capacity contracts start in June 2024.

New England has seen a build-out of smaller batteries. Some have been acquired by municipal utilities willing to get out in front of a grid trend. Others are supported by the Massachusetts SMART program, which incentivizes the addition of batteries at distributed solar projects.

But until now, no standalone battery had won in the competitive capacity auctions opened to energy storage by ISO-NE's implementation (https://www.greentechmedia.com/articles/read/iso-new-england-lays-out-its-energy-storage-market-integration-plans) of Federal Energy Regulatory Commission Order 841 (https://www.greentechmedia.com/articles/read/court-upholds-ferc-order-841-opening-wholesale-markets-to-energy-storage), and no batteries above the 100-megawatt threshold had been built in the region.

"There's no mandate, there's no emergency procurement, there's no grant program," Plus Power General Manager Brandon Keefe said. In that light, the company's capacity market wins represent "the market working and storage winning."

The upshot is that a region with big climate goals and physical constraints on its natural-gas supply will meet its hours of greatest electricity demand with a bit more battery power and a bit less gas-fired power.

Previous instances of storage winning in that region include solar installer Sunrun's 20-megawatt capacity contract

(https://www.greentechmedia.com/articles/read/sunrun-wins-new-england-capacity-auction-with-home-solar-and-batteries) in New England, which it will fulfill in 2022 by aggregating solar-paired battery systems in homes. And in the nearby territory of New York ISO, utility Con Ed awarded a capacity contract last year to developer 174 Global Power (https://www.greentechmedia.com/articles/read/con-edison-contracts-new-yorks-biggest-

battery-to-date). But that 100-megawatt/400-megawatt-hour battery came from the utility's response to a state battery mandate, rather than a regular competitive auction among all types of power plants.

Strategically located

The Cranberry Point project in the town of Carver, just inland from Cape Cod, tackles several grid imperatives at once.

It sits near a major substation, Keefe said, which allows for shipping its electricity out to the greater Boston area. It also happens to be "strategically located" in the same grid zone as the Mystic Generating Station, a legacy gas plant in Boston. Mystic dates back to World War II and had been kept open with out-of-market payments on the grounds that it could jeopardize grid reliability if it retired. But owner Exelon plans to shut down several generating units (https://www.exeloncorp.com/newsroom/statement-regarding-the-retirement-of-mystic-generating-station-in-2024#:~:text=As%20a%20result%20of%20the,and%209%20at%20that%20time.) there between now and 2024.

Cranberry Point will replace nearly 10 percent of Mystic's peak capacity and will do so without emitting any local pollution. As such, it is likely to qualify for Massachusetts' Clean Peak Standard (https://www.mass.gov/clean-peak-energy-standard), though Plus Power developed the business model independent of that policy, Keefe noted.

But this battery is also near the expected landing point for the cables that will deliver electricity from the forthcoming offshore wind projects Vineyard Wind and Mayflower Wind. Once that happens, the battery is poised to charge up on the cheap influx of clean power, in order to discharge during valuable peak hours.

"You're allowing for more clean electrons while replacing the need for gas to help balance that," Keefe said.

The Maine project will be built between a supply of wind power across the Canadian border and the demand center of the greater Boston area. Plus Power chose both locations based on internal modeling of future grid behavior, Keefe said, which the firm uses to identify fundamental constraints in the network that batteries can relieve. The company then spent several years working with local government and fire officials to hone the projects' safety protocols.

Gas plants are the go-to source of on-demand power for the U.S. grid today, but it's gotten difficult to build new ones in New England (and elsewhere). The region also has a limited supply of natural gas, which gets diverted to heat homes during frigid northern winters.

Batteries don't consume gas, nor do they emit pollution onsite or require water for cooling. That light footprint means they can be built much more quickly than traditional power plants. Those structural conditions create an opening for battery plants to excel, Keefe argued.

"Storage is faster, storage is more nimble, storage doesn't have fuel risk," he said. "It's going to allow for these constraints to be addressed more rapidly."

Expansion at Plus Power

Plus Power has ramped up hiring and development activities and now has projects underway in 17 states.

The company first appeared in the news in 2018, when it delivered the largest grid battery in Mexico (https://www.greentechmedia.com/articles/read/mexico-gets-its-first-grid-scale-battery-and-its-at-a-car-factory), as part of an automotive factory microgrid in Monterrey. More recently, it won a contract to build the largest standalone battery in Hawaii (https://www.greentechmedia.com/articles/read/plus-power-to-build-185mw-battery-for-hawaiian-electric), which will take over crucial grid reliability duties from the state's last coal plant, allowing it to shut down. Plus Power also went into Texas before that market became a storage hotspot; it flipped two projects (https://www.greentechmedia.com/articles/read/broad-reach-power-starts-building-biggest-batteries-in-texas) to Houston-based Broad Reach Power, which will be the largest in the state when they come online this year.

Those standalone batteries are notable for making a business case without one of the most cherished tools in the clean energy toolkit: the federal Investment Tax Credit. Congress never passed a credit for standalone batteries, so storage developers have accessed the credits by pairing batteries with solar. But charging solely with solar to claim the credit limits a battery's room to maneuver. The storage industry has made a standalone storage tax credit a priority for lobbying in Washington, D.C.

"We can do this faster and we can do this in more places if we can level the playing field and have a storage [Investment Tax Credit]," Keefe said.

That Plus Power is now poised to build the largest batteries in Hawaii and Maine, with their drastically different grid paradigms, speaks to the growing geographical scope of the technology's competitiveness. Keefe credited falling battery costs with making Cranberry Point a winner after four years of development. Analysts expect battery costs to keep falling.

"This is clearly a signal that large standalone storage is now competing with gas," said Polly Shaw, the new head of policy and communications at Plus Power and former regulatory lead at commercial storage startup Stem.