

Energy storage for demand response tokyo

Sunverge CEO Martin Milani declined to give details on the scale of its work with Tepco in a Monday interview. But he did say that several of the company's "dozens" of 19.6 kilowatt-hour battery-inverter units have been deployed in C& I locations owned for about a year, based on work with Mitsui that started in early 2016.

Still, the two projects mark the first announced international projects for Stem, and an important new market for Sunverge, which is also operating in Australia. And with Tepco facing a future that's much less reliant on nuclear power, and much more renewable and distributed in nature, with more competition for big energy customers, both companies are hoping these small-scale experiments will be the start of something much bigger.

"We think it's the beginning of a variety of opportunities out there," Carrington said. "We've talked about getting into new markets for some time," he said, adding, "This will be a very compelling market. It will be evolving over the next 12 to 24 months."

Japan's energy sector has been evolving, and struggling, since the 2011 Fukushima Daiichi nuclear power plant disaster and the subsequent closure of much of the country's nuclear reactor fleet, which caused major energy shortages and forced the country into emergency efficiency measures.

Since then, the situation has stabilized, thanks largely to cheap imported natural gas, and several reactors have since reopened under pressure from the country's largest utilities. Still, public opinion remains opposed to nuclear power, which makes up only about 2 percent of the country's energy supply, compared to 30 percent before Fukushima.

Meanwhile, Japan is still adding renewables at a rapid pace, despite the government's scaling back its renewables goals and slower-than-expected growth and cutbacks from its wind and solar feed-in tariff program.

Finally, Japan is undergoing a reform of its energy regulations, meant to open the vertically integrated system to more competition among energy providers. These combined factors are pushing the country's biggest utilities to invest in distributed energy technologies, including batteries.

Mitsui, which has invested in Stem and Sunverge alongside a range of renewable and distributed energy companies, will be the lead on the two projects. That makes it the owner and financier of Stem's battery systems in this case, Carrington said.

But Stem will operate the lithium-ion battery units, individually and in aggregate, from the same software platform, dubbed Athena, that runs its fleets in California, New York and Hawaii. "Our platform can aggregate that network -- now small, but we expect it will grow -- and provide a flexible demand resource for the utility, particularly as they add more renewables on the grid," he said.

Sunverge CEO Milani said the company is being asked to test three use cases. The first is fairly straightforward -- dispatching or importing power from the batteries to prove they're tightly controlled enough to maintain a target wattage reading at each site. (Milani will speak today on a panel at Greentech Media's Energy Storage Summit 2017 conference in San Francisco.)

The second is to reduce demand charges, or extra costs imposed on buildings that exceed certain limits on how much power they can draw from the grid at any one point in time. That's the core value proposition for most of the systems deployed by Stem, Green Charge Networks and other behind-the-meter battery players in the C& I space.

While this business case is limited to markets like California or New York where demand charges are high enough to justify the cost, that's certainly the case in Japan, where demand charges can add up to more than \$10 per kilowatt, compared to an average electricity price of 30 cents per kilowatt-hour, he noted.

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