

Xtreme Power Quietly Building Small-Scale Energy Storage

The startup behind big wind power storage projects in Hawaii and Texas is also building small-scale batteries to back microgrids for border colonias, and is eyeing other markets.

Jeff St. John: March 28, 2012

Xtreme Power has won a lot of attention for its battery technology, which is being deployed in the megawatt scale to [back up wind farms in Hawaii and Texas](#). But it's also quietly working on smaller-scale projects, and could start deploying similar "community energy storage" units for utilities and commercial clients in the near future.

That's the word from Carlos Coe, founder and chairman of the Austin, Texas-based startup, who described a host of applications for the [company's solid-state battery technology](#) during a talk at Wednesday's Cleantech Forum in San Francisco.

Some of those smaller-scale projects are already in place, Coe said. Namely, Xtreme is supplying batteries to a [project aimed at bringing power to colonias](#), which are extremely impoverished and often unincorporated communities that now house an estimated 500,000 people who are disconnected from grid power and other services along the Texas-Mexico border.

Texas A&M University and the State Energy Conservation Office (SECO) [launched the microgrid project in 2008](#) to bring rooftop solar PV power to a test group of dwellings in a colonia. Along with that power [came bio-diesel generators](#), as well as Xtreme's small-scale batteries to store intermittent renewable energy.

A 2010 report on the project ([PDF](#)) gives high marks for the microgrid systems' power efficiency (83 percent of generated power got to residents), as well as power reliability (five days without power during a 181-day stretch, or 97 percent reliability). The project's goal was to prove whether the model could be replicated on a broader commercial basis.

Solar-power-to-home microgrid projects are [more common in developing regions such as Africa](#), but [they're fairly rare in the United States](#). Still, Coe said Wednesday that the concept could bear on a number of smaller-scale applications for his company's technology -- both the batteries themselves, and the battery management systems that Xtreme has developed to manage them and integrate them with the grid.

"We've been working on a lot of projects we don't advertise," he said. While he wouldn't get into details, he did say that Xtreme was looking at "community energy storage" (CES) applications, in which smaller-scale batteries are placed in neighborhoods and tapped to smooth power flow, store off-peak power for use during peak hours, and even help homes and businesses keep the lights on during power outages.

[Japan has a number of projects](#) testing out small-scale energy storage as part of a push to make communities power-independent. In the United States, utility AEP is trying out a [big community energy](#)

[storage project in Ohio](#), using a \$75 million Department of Energy grant. It's important to note, however, that such projects have yet to prove that they make sense on a commercial basis.

Indeed, grid energy storage has generally been limited to places where high power costs and difficulties of integrating intermittent wind and solar power into the grid make them effective -- [as in Hawaii](#) -- or in places where [batteries let utilities avoid building brand new transmission](#) or distribution infrastructure.

Renewable power could add a [new set of calculations that make energy storage cost-effective](#), however. On the large scale, we've seen [wind farms turning to large-scale batteries](#) to smooth out their up-and-down power generation. Xtreme's latest project on that front, a [36-megawatt storage system to back up Duke Energy's 153-megawatt Notrees wind farm](#) in West Texas, is set to start commercial operation in October of this year, Coe noted Wednesday.

On the distributed scale, smaller batteries in neighborhoods, or even individual houses, could help smooth the affect of on-again, off-again rooftop solar PV power being added to the one-way flow of grid power from central generators to end users. Coe noted Wednesday that the falling cost of solar panels could open the market for "commercially viable small-scale systems that have very unique capabilities," such as voltage regulation combined with backup power, which are hard to provide from other technologies.

It will be interesting to see how Xtreme Power makes its next moves in the small-scale grid storage space. Coe wouldn't say which utilities or other partners the company might be working with. Certainly there are a number of grid-scale technologies, like flow batteries or [sodium sulfur batteries, that don't lend themselves to small-scale](#) deployments. Even so, Xtreme faces plenty of competition in the space from [battery companies like A123](#), Saft, AltairNano and Japanese giants like Mitsubishi, Panasonic and Hitachi.

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