

## Xtreme Power To Roll Out Energy Storage For Wind Projects In 2010

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12/23/2009 – Venture-backed Xtreme Power Inc. is gearing up for the commercial rollout of its integrated power management and storage systems in the wind power industry next year at two of First Wind Holdings LLC's projects in Hawaii, Clean Technology Insight has learned.

Kyle, Texas-based Xtreme, which has developed a rechargeable solid-state battery, deployed a 1 megawatt battery energy storage system at First Wind's 30 MW Kaheawa Wind farm in Maui, Hawaii, for an energy storage demonstration project that is near completion. Now, Xtreme Power will deploy larger units at two other First Wind projects in the Aloha state, officials from both companies said in interviews.

"We were looking for a battery energy storage system to smooth out the power output...and we're still waiting for the final report [on the technology]," said Noe Kalipi, First Wind's director of government and community relations in Hawaii. "We'll be working with the same technology and Xtreme Power to install at the Kaheawa Wind II and Kahuku Wind, and those would be larger commercial applications."

Boston-based First Wind plans to build and start operations of the 30 MW Kahuku Wind farm, based in Hawaii's most populated island of Oahu, in 2010, said Kalipi. The developer plans to start construction of the 21 MW Kaheawa Phase II in Maui, around mid-2010, she said.

Because of the high cost of energy in Hawaii, the state has one of the most aggressive targets to shift its power generation to renewable sources in the U.S., with a goal to meet 70% of its needs by energy efficiency and renewable energy by 2030.

To achieve that goal, the state will need to update its energy infrastructure, and advanced power management and energy storage systems such as Xtreme Power's are key to help a quick integration of wind power into the system, said Kalipi.

As an example of the variation of wind power output, she said the 30 MW Kaheawa facility can account for 9% of Maui's grid at peak power, and as much as 30% during off-peak hours. Batteries are one way of storing energy when it isn't required and releasing it to the grid at periods of higher demand.

Xtreme Power's Chief Executive Carlos Coe said in an interview that the company's patent-pending technology not only helps address renewable energy grid integration but can do it at a

much lower cost than competing technologies.

A number of companies are working on technologies to address the growing need for large scale stationary storage, with performance of lithium-ion based chemistries encouraging researchers because of its ability to pack the most power in the smallest space, but weight and costs remain a hurdle to deployment. Researchers are also considering flywheels and ultracapacitors for applications that don't require long-term storage.

Coe said Xtreme's large scale power systems provide "advanced performance at very low cost," with power density larger than the lithium-ion technologies in the market. He declined to disclose the company's "proprietary chemistry" in the dry-cell batteries, but Coe said it isn't lithium-based. Power density is a ratio of the amount of power delivered compared to a battery's weight.

According to a filing with the World Intellectual Property Organization, Xtreme Power's technology seeks to optimize performance by connecting each cell "in a pack configured to provide the same DC environment" as any other cell in the pack. DC means direct current. By having every cell in the same or similar voltage level, the technology addresses the issue of wasted performance of individual cells in a battery pack.

Founded in 2004, Xtreme Power installed its first energy storage system at the National Science Foundation Observatory in Antarctica in a project run by the University of Chicago. The system has been operational 24 hours each day for more than three years, said Coe.

The company's technology will be used in a \$27.4 million project, called Center for the Commercialization of Electric Technologies, in Houston which last month was awarded a \$13.5 million grant from the U.S. Department of Energy.

Xtreme Power is backed by Sail Venture Partners and the State of Texas' Emerging Technology Fund, and has raised a disclosed amount of approximately \$20 million since it was founded.

Xtreme Power expects to come out and raise fresh capital in 2010, as it unveils some of its projects beyond those in Hawaii, said Coe.

The company currently produces in Vermont and Oklahoma, and assembles its systems at its headquarters in Texas.

In September, it announced that it was teaming up with solar-project developer Clairvoyant Energy to invest more than \$725 million to redevelop a Ford Motor Co. plant in Wixom, Mich. into a solar manufacturing and energy storage facility. The project will expand its capacity significantly, but that facility isn't coming online for a few years yet, said Coe.

<http://www.firstwind.com>

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