



Blog

Aquion Energy, Schneider Electric, and Azimuth Energy Announce AC/DC Hybrid Nanogrid at the Illinois Institute of Technology

by Elizabeth Pond

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-PRESS RELEASE-

Aquion Energy and partners announce the release of a new plug-and-play energy storage system, featuring AHI batteries.



PITTSBURGH, PA--(Marketwired - Sep 12, 2016) - Aquion Energy, Inc., the manufacturer of [Aqueous Hybrid Ion \(AHI™\) batteries](#) and energy storage systems, Schneider Electric, the global specialist in energy management and automation, and Azimuth Energy, a solar-energy and energy-efficiency engineering and construction company, today announced completion of an innovative AC/DC nanogrid at the Illinois Institute of Technology's (IIT)



for storage and Schneider power control electronics for energy management.



Energy storage system at IIT nanogrid

"This is the future of distributed generation, where isolated loads powered by renewables combined with energy storage can stand alone and operate without the grid," said Tim Poor, chief commercial officer of Aquion Energy. "Our safe and sustainable Aspen batteries are the optimal choice for long-duration storage and deep daily cycling, from nanogrids like this one at IIT to microgrids, island communities, and other nanogrids such as telecom base stations."

The IIT nanogrid is unique because it supports both alternating current (AC) and direct current (DC) loads. During the day, the solar array directly powers the highly efficient DC LED lighting systems and AC loads, while simultaneously charging the batteries. Any excess solar energy can be exported to the grid. In the event of a grid outage, the batteries and solar panels deliver energy to the system 24/7.

"Schneider Electric has always been at the forefront of researching energy management technologies and solutions for microgrids. We were a proud partner in this innovative project, ready to demonstrate the benefits of the flexibility and intelligence of our Conext XW+ family of products. It supports multi-mode operation to create a perfect test-bed for validating a true hybrid system with mixed energy sources and loads on DC and AC distribution," said Xavier Datin, vice president of solar off-grid and residential at Schneider Electric.

"This project will greatly increase energy efficiency, as well as provide critical backup power in case of an outage," said Dr. Mohammad Shahidehpour, Ph.D, IIT's Director of the Robert W. Galvin Center for Electricity Innovation. "In case of emergencies, we will be able to separate the Keating Center from the rest of IIT's grid, while maintaining full power to the facility. We're very pleased with the benefits derived from this project and the innovative technologies that have been implemented."



The nanogrid is a demonstration of how a solar plus storage system can provide resilient electricity for critical building loads during power outages, such as police stations and hospitals. In the case of an outage, any building with a nanogrid could continue to be powered by its own sustainable, self-generated electricity. The nanogrid also allows building operators to respond to their power demand and control how and when they use power from the microgrid -- and ultimately from the utility.



IIT Keating Sports Center

"This project was a fun challenge that stretched all our knowledge of microgrids," said Marc Lopata, president of Azimuth Energy. "The Keating nanogrid will provide a reliable and versatile platform for future research by the IIT Galvin Center under the direction of Dr. Shahidehpour. We had less than our expected share of surprises, and I attribute that to the functionality, quality control, and support from Aquion and Schneider."

Aquion's Aspen batteries are clean, sustainable, and long-lasting, can operate at high ambient temperatures, and do not degrade from partial state of charge cycling. Aspen batteries have a unique and environmentally friendly electrochemical design and are the first and only batteries in the world to be [Cradle to Cradle Certified™](#).



Aquion Energy

Aquion Energy is the manufacturer of proprietary Aqueous Hybrid Ion (AHI™) batteries and battery systems for long-duration, stationary energy storage applications. Aquion's Aspen product line is optimized for daily deep cycling for residential solar, green architecture, off-grid and microgrid, telecom towers, energy management, and grid-scale applications. Aquion's high-performance, safe, sustainable, and cost-effective batteries deliver reliability and value for customers. The company's battery systems provide flexible, modular energy storage that enables broad adoption of renewable energy technologies such as wind and solar, reduced reliance on fossil fuels, and optimization of existing grid-tied generation assets.

Schneider Electric

Schneider Electric is the global specialist in energy management and automation. With revenues of ~EUR 27 billion in FY2015, our 160,000+ employees serve customers in over 100 countries, helping them to manage their energy and process in ways that are safe, reliable, efficient and sustainable. From the simplest of switches to complex operational systems, our technology, software and services improve the way our customers manage and automate their operations. Our connected technologies reshape industries, transform cities and enrich lives. At Schneider Electric, we call this **Life Is On**.

Azimuth Energy

Azimuth Energy is an engineering, construction, and development-support services company focused on helping its clients improve the financial and environmental performance of their businesses. This means reducing their energy consumption and operating expenses, managing risk, improving their bottom line and the value of their property investment. Azimuth is expert at innovative and creative solutions for solar energy, advanced technology microgrids, and energy efficiency integration. Originally founded in 2009, the Azimuth team has construction, energy, and renewable deployment experience dating back to the early 1990s. Headquartered in St. Louis, Missouri, with offices in London and three Caribbean locations, Azimuth has a strong team of experts who have engineered and constructed over 500 PV projects and 80 energy storage plants in the U.S. and overseas, totaling over 700 MW of power capacity.

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