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ComEd and Silver Spring's Networked Meters and Streetlights Meet the Galvin Microgrid



Illinois set to test microgrids, smart streetlights and distributed solar.

Jeff St. John
September 23, 2014

States like [California](#), [New York](#) and [Hawaii](#) are getting a lot of attention for the way they're trying to rewrite the rules and regulations that govern their power grids to incorporate more distributed energy resources into the mix. But there's plenty of activity underway in other states, each with its own particular set of grid challenges, and its own set of big utilities looking for technologies to solve them.

Take Illinois, where Chicago-area utility Commonwealth Edison is in the midst of a broad range of grid upgrades, including a 4-million-unit smart meter rollout with Silver Spring Networks. This week, the two partners officially joined the Illinois Institute of Technology's [Galvin Center for Electricity Innovation](#), a hotbed for microgrid research, to [open a test center](#) where ComEd's next-stage plans for that smart meter network can be put to the test.

Dubbed the Center for Smart Grid Applications, Research and Technology ([CSMART](#)), the new facility is already starting to test several use cases that ComEd is interested in, Carol Bartucci, the utility's director of information technology, said in a Monday interview.

Those include networked street lights, a cloud computing platform for monitoring [distributed energy at the microgrid](#) level, and a data analytics platform that can collect and interpret the signals from throughout the campus to fine-tune the microgrid's performance, she said.

"This is not a theoretical lab -- this is a very practical lab," she said. IIT has used [Silver Spring's smart streetlights platform](#) to network a number of LED outdoor lights on campus, for example. Some of the dozens of graduate students at the Galvin Center are involved in creating computer models of the campus microgrid to inform the control systems being developed at the center, she noted.

The partners are also working with Illinois technology consultancy [West Monroe Partners](#), which is providing its ConnecttheGrid cloud-based application for tracking, managing and reporting on distributed generation assets. OSISO, a leader in utility data management software, is providing its PI data historian platform for the data analytics portion of CSMART's work, she added.

All of these different projects present interesting challenges in merging the

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systems that control the campus microgrid, as well as the Silver Spring networks and software being used by ComEd for its smart meters. On that front, ComEd is interested in seeing how Silver Spring's communications handle the challenges associated with tracking the rooftop PV, energy storage systems, cogeneration systems, power electronics and other components of a microgrid, she said.

This work also aligns with ComEd's broader work on microgrids, COO Terence Donnelly said. Last week, ComEd received a [\\$1.2 million Department of Energy grant](#) to work on a microgrid "master controller" device, capable of managing multiple microgrid systems in a way that optimizes their relationship to the grid at large. While that project isn't directly linked to CSMART, it does involve IIT, as well as grid technology vendors including Alstom, OSIsoft, Microsoft, S&C Electric and Schneider Electric, he noted.

ComEd has already invested about \$245 million in distribution automation equipment from Illinois-headquartered vendors like S&C and G&W Electric, and it has racked up some [significant grid reliability improvements](#) as a result, Bartucci said. But the lion's share of its \$2.6 billion smart grid plan is tied up in its 4-million-unit smart meter deployment, which is now in accelerated deployment mode after facing more than a year of delay under scrutiny from state lawmakers.

As part of the compromise that allowed those plans to go through, ComEd and fellow Exelon utility Ameren will be asked to prove their smart meters are [reaching certain performance milestones](#) over the coming years, both in terms of internal utility cost reductions and service improvements, and in terms of providing value to individual customers.

The projects underway at CSMART represent the kind of future smart grid system integration that "goes well beyond what we're doing now," Donnelly noted. At the same time, ComEd is "actively looking at several possibilities right now" for technology implementations that could build on the work being done at the test center. "That's why these CSMART activities are so critical," he added.

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