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Special Alert: ComEd Wins Approval for Innovative Microgrid Cluster in Chicago

March 1, 2018 By Elisa Wood

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In a move with far-reaching implications for grid decentralization, Illinois regulators yesterday approved Commonwealth Edison's cutting-edge microgrid cluster in Chicago.

The first utility-scale microgrid cluster in the nation, the \$25 million project is expected to demonstrate what some see as an eventual retooling of today's centralized electric system into a grid-of-microgrids.

"As the electric grid becomes increasingly digital and the demand for renewable power, security and reliability grows, microgrids are expected to become mainstream and will become a core piece of the electric system's infrastructure," said Fidel Marquez, ComEd senior vice president, in a call with the media Wednesday.



The Illinois Institute of Technology, part of the upcoming microgrid cluster

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Microgrid cluster to learn by

The ComEd microgrid will integrate with another microgrid already in operation at a nearby technical college, the Illinois Institute of Technology (IIT). The utility will then study the functioning of the clustered microgrids and report out data over a 10-year period.

"By connecting with the IIT microgrid, we'll learn how to integrate microgrids with renewable energy resources and how to maximize the value of the interaction between two microgrids. It's an important step forward in our effort to develop a more secure, resilient and reliable distribution system in the future," said Joe Svachula, ComEd's vice president, engineering and smart grid technology.



The utility expects to complete the first phase of the project next year, which will include solar, battery storage and reconfiguration of an existing feeder to serve a 2.5 MW load. The second phase will begin soon after, adding 4.5 MW of load and 7 MW of distributed energy resources. The microgrid will directly serve about 1,060 residential, commercial, and small industrial customers in the Bronzeville area of Chicago's South Side.

This will be Illinois' second major utility microgrid. Ameren last year began operating a

1.475-MW microgrid in Champaign. That microgrid is noted for its advanced cybersecurity features and other technology firsts.

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"We think it's great that Illinois is finally stepping forward as the microgrid leader. We are finally allowing all of our utilities to fully participate in the microgrid market," said David Chiesa, senior director of global business development at SSC Electric, a Chicago-based company involved in development of the Ameren microgrid. "Ameren set the example with the most advanced microgrid in North America. We're really anxious to see what ComEd does with this larger, and more far-reaching concept of clustered microgrids."

Learn more about the ComEd microgrid cluster at Microgrid 2018 in Chicago May 7-9.

In releasing the 86-page approval Wednesday, the Illinois Commerce Commission elevates the profile of the state in a debate about grid decentralization that has so far been largely centered to the Northeast and California.

Potential precedent for other states

The commerce commission's decision also offers potential precedent for other states in how they treat utility microgrids in regulation.

Because microgrids differ in many ways from grid technology, rules developed decades ago do not easily apply. In restructured states like Illinois, confusion exists over whether microgrids should be treated as a generation or distribution asset. This is an important distinction since strict limits are placed on ownership of generation in states that allow retail competition.

To settle the issue, ComEd pledged that it will not own the generation included in the microgrid. Instead, the utility will seek a third-party to do so via a competitive solicitation. If the bidding process fails to produce cost-effective choices, ComEd will lease the generating assets.

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In addition, the commission concurred with ComEd that the microgrid is a form of distribution – a way to keep the power flowing — meaning its costs are recoverable in rates should the investments prove prudent.

Cost recovery was a major sticking point in Illinois, as it has been in other deregulated states where utilities have proposed microgrids. The Illinois attorney general had argued against the Bronzeville microgrid, saying that only a few would benefit, but all would pay.

The commission, however, looked at it differently, saying the microgrid will provide a valuable learning opportunity with implications beyond the neighborhood it serves directly.

ComEd intends to extensively study and report data on the project, including cost-benefits analysis. The information "can be used to evaluate other opportunities to implement advanced distribution system technology, including microgrids," the commission wrote.

The project is expected to demonstrate a range of microgrid benefits, among them grid security, an area of growing concern in an era of cyber vulnerability.

"The importance of grid security will only continue to grow along with our increasing reliance on electricity," said Anne Pramaggiore, president and CEO, ComEd. "This microgrid demonstration project will provide critical learnings on how to protect against and recover from disruptive events, including extreme weather, as well as physical or cyberattacks."

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Anne Pramaggiore, president and CEO of ComEd

The project will serve an area that includes 10 facilities providing critical services, including the Chicago Public Safety Headquarters, the De La Salle Institute and the Math & Science Academy, a library, public works buildings, restaurants, health clinics, public transportation, educational facilities, and churches.

Part of the project's costs will be offset by more than \$5 million in grants from the U.S. Department of Energy.

Lead to more customer-owned microgrids

The project initially faced strong opposition. But several opponents softened their stand after ComEd agreed to project modifications, concessions and new programs. For example, ComEd worked with the Environmental Defense Fund (EDF) and Citizens Utility Board to develop an innovative tariff that will allow third parties to create and manage microgrids. Utilities have traditionally controlled

electricity delivery, but this decision starts the process for new, competitive players to enter the microgrid game, according to EDF.

"As smaller, more resilient power systems, microgrids offer endless possibilities: They can advance the use of clean energy, act as a platform for smart cities, or allow neighbors to share excess power from their rooftop solar. We're excited about the opportunities that customerowned microgrids provide, and look forward to working with ComEd to make that future a reality," said Christie Hicks, EDF's manager, clean energy regulatory implementation."

Join us in Chicago at Microgrid 2018. Tour the IIT microgrid and hear from those working on the Bronzeville microgrid cluster.

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Elisa Wood is the chief editor of MicrogridKnowledge.com. She has been writing about energy for more than two decades for top industry publications. Her work also has been picked up by CNN, the New York Times, Reuters, the Wall Street Journal Online and the Washington Post.



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