



# The Future of Microgrids



**M**icrogrids by definition are small, but they are attracting the attention and capital of large utilities.

In June, Southern Co. bolstered its \$425 million acquisition of PowerSecure International by **forming a strategic alliance** with Advanced Microgrid Solutions to jointly develop and deploy behind-the-meter distributed energy resources across the United States. That move was preceded by Southern's October **partnership** with Bloom Energy for 50 MW of distributed fuel cells.

Not so long ago, microgrids were seen as a threat to utilities, a third-party encroachment that could eat away at their traditional business model. A Navigant Research **report estimated** microgrids could become a \$40 billion-a-year global business by 2020, siphoning about 6 GW of business away from utilities. And an **EY report estimated** that by 2020 microgrids could provide between \$64 billion and \$171 billion in electricity cost savings to commercial companies in 20 countries. In many cases, those are savings that could otherwise show up as utility revenues.

Even absent the threat from microgrids, utilities are feeling pressure from their savviest customers, the commercial and industrial sector for whom energy costs can represent a large portion of their business costs. That is particularly true for the industrial sector, as seen in Energy Information Agency data.

### **Flatline demand**

By now it is well known that electricity demand growth is slow to flat. In June the **EIA projected** total U.S. electricity sales growth of 0.7% through 2040. In an **earlier analysis**, EIA noted that total electricity sales fell in 2015 for fifth time in eight years.

A closer look at the numbers shows what could be seen as an underlying weakness in the C&I sector. In the June report, the EIA projects sales to commercial customers growing at 0.8% and projects industrial sales growth of 1.1%, but the energy intensity – kWh per square foot of store space for commercial and kWh per sales dollar for industrial – for both customer classes is projected to decline, by 0.3% for commercial customers and by 0.8% for industrial customers.

EIA's historical data paints an even starker picture. **Retail sales of electricity** have been essentially flat from 2002 into 2017. **Revenues from retail sales** is a little more encouraging, with a small rise for the residential sector and smaller gains for commercial, but industrial revenues are essentially flat.

Many utilities have seen the growth of energy efficiency erode their revenues, which is one of the reasons utilities like Southern are getting into distributed energy. "They are not seeing the growth they used to get," said Charles Fishman, an analyst with Morningstar.

For a company like Southern, the PowerSecure acquisition allows it to play both offense and defense. The utility company is not only producing earnings from a new business, it is buying up a potential competitor.

"Utilities are trying to figure out how to play in this market," Peter Asmus, a principal research analyst with Navigant. One way to do that is to acquire a microgrid company so they can generate revenue rather than lose it. The other is to invest in microgrids outside of their service territories through their unregulated subsidiaries.

Utilities can also try to put microgrid projects into ratebase, but that can be a time consuming process, and it can raise red flags with regulators.

Commonwealth Edison tried and failed to ratebase the \$25 million microgrid it has proposed in Chicago's Bronzeville neighborhood by bundling it into a bill that set up nuclear subsidies for ComEd's parent company Exelon, but the Bronzeville project was removed before the bill was passed in December 2016. ComEd is now **taking its case** to the Illinois Commerce Commission. It could be a controversial move.

Illinois is a restructured state, and ComEd is not allowed to own generation. But microgrids combine elements of both generation and distribution, and ComEd is arguing that the Bronzeville project qualifies as a distribution asset.

None of the Southeastern states in which Southern operates are restructured, so the utility company does not face those same restrictions within its footprint. In addition, PowerSecure is part of Southern's unregulated operations.

### **In-and-out of the footprint**

Mark Lantrip, chairman, president and CEO of Southern Company Services, told Utility Dive that PowerSecure will pursue business opportunities within and without Southern's regulated footprint.

To date most of PowerSecure's projects have been done east of the Mississippi River and mostly in the Southeast. Before the acquisition, PowerSecure was primarily providing customers with distributed generation solutions for backup power and resiliency. But since the acquisition, Southern has bolstered the business by adding partnerships with Bloom Energy and AMS.

"More and more customers are looking for reliability and independence," Lantrip said. They are also looking for sustainability. "It doesn't take much to go from backup power to a microgrid," he said.

Through its partnership with Bloom, PowerSecure can offer customers efficient fuel cell generation, an option Lantrip says is becoming "more and more in the money."

And the partnership with AMS, which also includes a \$5 million equity contribution from Southern, allows PowerSecure to address the commercial market for energy efficiency and demand management. It also gives PowerSecure access to AMS' "cutting edge" optimization software, says Lantrip, something PowerSecure did not have.

Before the acquisition PowerSecure addressed the market as a provider of energy as a service and as a turnkey contractor, but Southern "wants to be an owner operator," Lantrip said. That could work well outside of Southern's regulated footprint where Southern Power could complement PowerSecure's business by building a solar farm that could feed power to PowerSecure customers.

Within Southern's core territory, Lantrip says PowerSecure would "ideally be a fulfillment partner" for Southern's regulated utilities. That could mean finding a way to put assets such as microgrids into ratebase. That is something Lantrip expects to become more prevalent, especially as regulators become more comfortable with the concept and "get more creative."

PowerSecure already has a group that provides services such as demand side management and energy efficiency as a third party administrator to utilities that have regulatory mandates to meet. That could fit into Lantrip's vision of PowerSecure as a fulfillment partner for projects that Southern's utilities put into ratebase.

Initially the more compelling market for PowerSecure's services could be outside of Southern's regulated footprint, which stretches from Mississippi to Georgia. Power prices are relatively cheap in the Southeast, providing less impetus for C&I customers to shop for alternatives. But in higher priced markets such as California and New York there could be more opportunities.

In those markets, PowerSecure could have a much larger market to tap into. C&I customers in those markets are looking for new ways to procure energy and meet sustainability needs, William Tokash, senior research analyst at Navigant Research, wrote in a recent **blog**. In a **July report**, Tokash said the energy as a service market for C&I customers could reach \$221.1 billion by 2026.

If Southern aims to tap into that market nationally, it could face growing competition from other large utility players, not just smaller start-ups. Last year, for instance, global energy company Engie **acquired** Opterra Energy Services.

Edison International also jumped into the market last year, unveiling of its Edison Energy subsidiary that aims to provide energy services and project development for C&I customers. It is a trend that has also attracted players beyond utilities. Last year German industrial giant Siemens **unveiled** a microgrid-as-a service platform.

It is a field that is likely only to get more crowded. In a rapidly changing business environment, where more and more utilities are looking for ways to better serve C&I customers decentralized strategies are taking center stage. As Asmus said, “The Southern Company purchase shows that microgrids are inching their way into the mainstream.”