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When state lawmakers deregulated the power business two decades ago, they divided the industry into two sectors with distinct duties: Generators could make and sell electricity and regulated utilities could transmit and distribute electricity. But the utilities, whose profits are capped by regulators, want access to a new business opportunity — battery storage.

Batteries are on the cusp of transforming the Texas power grid by making intermittent power sources such as wind and solar into a supply as dependable as natural gas. Demand for battery storage has been driven by rapidly falling prices and more efficient technology, making it easier to store power for use when wind isn't blowing or sun isn't shining.

Utilities want to invest in the lucrative market, saying batteries can boost grid reliability, reduce transmission line congestion and prevent construction of new transmission lines.

But power generators are fighting to keep utilities out, arguing that energy storage is considered generation under state law that makes battery investments off limits to investor-owned utilities that could profit by storing cheap power and selling it when prices rise. And state regulators are loathe to step in, rejecting a request two years ago from AEP Texas North to build two battery storage sites and punting a more-recent request by CenterPoint Energy to add battery storage capability.

INVESTORS PLUG IN: Battery storage is hot VC investment

"The utilities are saying, 'Let's figure out a way to get in it and let's lead instead of falling behind,'" said Raj Prabhu, chief executive officer of the energy research firm Mercom Capital Group in Austin.

Battery storage in Texas is relatively modest, with a few scattered projects. Vistra Energy, the state's biggest power generator, has built the state's biggest energy storage system, a 10 megawatt lithium-ion system connected to a solar farm in Upton County that is about 50 miles south of Midland. NRG Energy, the power generator and seller that owns Reliant Energy and other brands, has a lithium-ion battery facility that provides 2 megawatts of power from a wind farm in Howard County, northeast of Midland.

But proposed battery storage projects in Texas would have a capacity of almost 7,800 megawatts, more than the capacity of proposed natural gas-fired generators, according to the Electric Reliability Council of Texas, the state grid manager. One megawatt provides enough electricity for about 200 homes on a hot summer day in Texas.

Demand for battery storage is growing in tandem with renewable energy sources in Texas. Wind energy generated 20 percent of the state's electricity last year and is expected to supply 24 percent this year, according to the Department of Energy. Solar energy, including residential and utility-scale, produces about 1 percent of the state's power needs. But Texas is projected to add more utility scale solar capacity than any other state this year, according to the Energy Department.

Until recently batteries weren't considered a way to supply power; they couldn't hold much of a charge and were expensive. But with improved technology, they can hold a charge for a few hours and have become cheaper, especially compared with expensive new transmission lines. Prices for lithium-ion batteries have fallen 35 percent in just one year, according to the research group Bloomberg NEF.

Battery storage can improve service reliability and grid resiliency, said Geoff Bailey, vice president of strategy for Oncor, the regulated utility that supplies transmission and distribution to millions of customers in the Dallas area,

If Texas wants investor-owned utilities to play a role in deploying battery storage, Oncor will do so, he said.

Proposals stall
Utilities in Texas have been itching to get into the battery business for years.

Oncor proposed investing in battery storage six years ago. It hired the consulting firm Brattle Group of Boston, which concluded that Texas policymakers should consider a new regulatory framework so Texas could take advantage of grid integrated electricity storage. The 2014 report suggested that Texas regulators should allow regulated utilities to invest in electricity storage and recover the costs from ratepayers. The approach could break down barriers that prevent energy storage investments, according to the report.

The Public Utility Commission hasn't officially considered the idea, but it asked market participants two years ago to weigh in on storage after rejecting a request from AEP Texas North to own two battery storage facilities connected to wind farms in West Texas.

Tesla, the electric vehicle manufacturer that has built its own vehicle battery charging network, supported the request, arguing that storage systems owned by utilities shouldn't be considered generation assets in Texas if the systems support the reliability of transmission and distribution and if they're not intended to sell power, according to the filing.

CHRIS TOMLINSON: Solar power and big batteries pose threat to natural gas's future

But some of the biggest generators in Texas came down against the AEP plan. NRG told regulators the plan would undermine the structural separation underlying the ERCOT competitive wholesale and retail markets and must be rejected, according to a regulatory filing. Vistra reminded regulators that Texas law prohibits utilities from owning generation facilities.

In April, the commission received another request to revisit the issue. CenterPoint, the regulated utility that distributes power in the Houston area, asked the commission for authority to install voltage-smoothing battery systems to wind farms and solar farms and include it as part of base rates as part of a $161 million rate request.

Some of the biggest power generators came out against the proposal, including Houston-based Calpine Corp, the nation's biggest generator of natural gas-fueled power, which said in a regulatory filing that the battery system would directly compete with Calpine's electric generation facilities.

The Alliance for Retail Markets, which represents retail electric providers including Direct Energy, NRG and Vistra, argued that the CenterPoint rate case is not the appropriate forum for resolving the critical legal question of whether a utility can own and operate a battery storage device. The group suggested that the commission take up the issue in a wider forum.

CenterPoint did not comment.

The commission, which asked the Legislature for direction on how to handle the increasingly thorny issue of ownership and operation of energy storage devices, opted not to take up the issue. By that time, the Legislature was weighing a bill introduced by state Sen. Kelly Hancock, a Republican representing Dallas and Fort Worth. It would have allowed utilities to sign contracts with generators to provide power from battery storage facilities built to improve transmission reliability. The bill also would have prohibited the Public Utility Commission from allowing utilities to own energy storage facilities.

“It was a proposal that would have satisfied both sides,” said Felix Maire, senior analyst for clean energy and storage with the research firm S&P Global Platts.

Calpine was on board because the bill still classified storage as generation but also gave utilities an opportunity to provide storage capacity in a limited way to handle reliability issues in a cost-effective manner, spokesman Brett Kerr said.

If a utility wanted to install something bigger it would have to seek proposals from generators that would, in turn, own and operate it for the utility, he said.

The state Senate eventually approved the measure, but it didn’t come up for a vote in the House before the end of the session, leaving its future as murky as ever.

Meanwhile, battery storage technology is improving quickly while public policymakers struggle to keep up. That’s not necessarily a bad thing as regulators and market participants still don’t understand the implications of a new market design, one utility expert said.

“I think the struggle will continue,” said Casey Herman, the U.S. power and utilities leader for the accounting and consulting firm PwC.