100 mw battery

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Tesla is best known as an electric car company, but the firm also has a thriving business in battery storage--including utility-scale battery installations to support the electric grid. Bloomberg reports that Tesla is currently building a battery installation in Tesla CEO Elon Musk"s new home state of Texas. The project is in Angleton, about an hour south of Houston.

Tesla hasn"t publicized the project, which is operating under the name of an obscure Tesla subsidiary called Gambit Energy Storage LLC. When a Bloomberg photographer visited, a worker discouraged picture-taking and said the project was "secretive." The project appears to consist of 20 large banks of batteries that have been covered by white sheets.

A document on the city of Angleton"s website provides some details about the project. It"s listed as being a project of Plus Power but includes a photo of a Tesla battery cabinet. Plus Power counts two former Tesla employees among its executives. Plus confirmed to Bloomberg that it had started the project, then sold it to an undisclosed party.

The installation will use lithium iron phosphate batteries that are expected to last 10 to 20 years. The document says that it will generate around $1 million in property tax revenue for the city of Angleton. The site will be unmanned but will be remotely monitored at all times, according to the document.

Texas has its own electric grid overseen by the Electric Reliability Council of Texas. "Angleton forms an especially volatile "node" on the ERCOT energy grid and the greater system will benefit from the energy balancing properties that the battery can provide," the document says.

And Musk has a lot of reason to be concerned about the quality of the electric grid in Texas. Not only did Musk recently relocate to the state, but both of his companies--SpaceX and Tesla--are expanding their footprint there. Tesla is building a car factory in the Austin area. SpaceX has long had a testing facility in McGregor, Texas, about halfway between Austin and Dallas. More recently, SpaceX has been pouring resources into its Boca Chica launch facility at the very southern tip of the state.

Back in 2017, we covered Tesla"s construction of a massive battery installation in South Australia. At the time, the 100 MW system was the largest in the world. According to Bloomberg, the new Texas battery system will be at least as big.

In the long run, massive battery facilities will be needed to shift intermittent solar and wind power in time. But a lot of battery installations today don"t have enough capacity to do much of this. Tesla"s South Australia battery, for example, only had enough capacity to supply power for a little over an hour at its full 100 MW power level.

Rather, early utility-scale batteries are being used to smooth out shorter-term fluctuations and keep supply of power perfectly balanced with demand. If a power plant unexpectedly fails or demand suddenly spikes, a utility-scale battery can provide a few minutes of power while electric utilities make necessary adjustments.

Utilities traditionally deal with this by having plants powered by natural gas on standby 24/7. Because these "peaker plants" might only be used for a few hours per year, the energy they produce is extremely expensive on a per-kilowatt basis. Batteries can soak up excess power at times when it"s plentiful, then release it at times of peak demand, allowing electric utilities to retire some of their gas-fired peaker plants without compromising grid reliability.

As batteries get cheaper, it will become economical to install even larger batteries to balance out supply and demand over a 24-hour cycle, enabling utilities to rely more heavily on solar and wind power. This is why analysts expect utility-scale batteries to be a massive growth market over the next decade or two; it"s going to take a lot more storage capacity to de-carbonize the electric grid.

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