

Energy Storage Is Ready to Meet the Midwest's Rising Energy Demand

Alex Thompson • Feb. 27, 2025

What is Energy Storage?

Energy storage is the process of capturing and retaining excess energy for later use. Energy storage systems stabilize fluctuations in energy production and consumption by storing excess energy generated during periods of low demand for later use during periods of high demand. Since energy storage is not an energy producer, it makes money on arbitrage, or buying when the cost of energy is low and selling when the cost of energy is high. When storage is combined with renewable energy generation, this process can lower the cost of energy as it also improves the reliability and efficiency of the electric grid.

Regional Transmission Operators (RTOs), utility companies, and developers are all entering the world of storage. Most Clean Grid Alliance (CGA) members are involved with storage in some capacity, be it storage manufacturing such as Form Energy and AES, or in developing stand-alone storage and/or hybrid renewable and storage projects.

Regional Transmission Operators Recognize the Importance of Storage

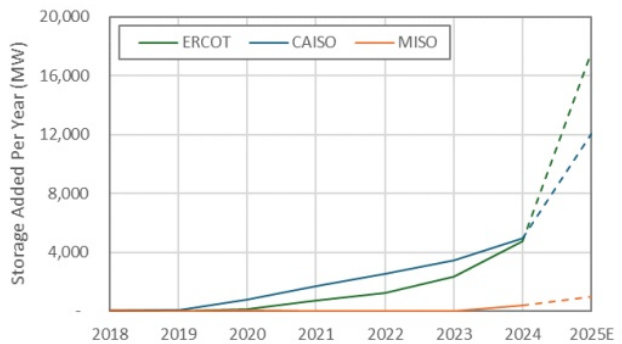
With an ever-changing resource mix, energy storage plays a vital role in facilitating the transition to a cleaner, more sustainable energy future. Currently, there is a relatively small amount of energy storage on the electric grid in the United States, but RTOs such as the California Independent System Operator (CAISO), the Electric Reliability Council of Texas (ERCOT) have already taken significant steps and successfully integrated energy storage in their energy portfolio, while the Midcontinent Independent System Operator (MISO) is just beginning to embark on that journey.

According to the American Clean Power Association's CleanPower IQ database, Texas leads the country with over 18,000 megawatts (MW) of energy storage online, and an additional 10,000 MW under construction or in advanced development. California follows Texas with over 12,000 megawatts (MW) of energy storage online, and nearly 10,000 MW under construction and in advanced development.

Earlier this year, we saw how vital battery storage is during extreme weather events. In late February, Texas' winter energy demand reached an all-time high thanks to an Arctic blast that plunged temperatures below freezing. Solar energy and battery storage [played a key role](#) in keeping the heat on, meeting 35% of the state's energy demand and setting a record for energy storage deployment (4,857 MW). Energy reliability is always important, but during extreme weather events, reliability saves lives.

Clean Grid Alliance Pushes MISO for Fair Treatment of Energy Storage

MISO is currently well behind CAISO and ERCOT with 1,000 MW of storage online. However, MISO does have over 60,000 MW of energy storage projects in its queue, waiting for their chance to connect to the grid. Instead of leveraging its current queue interconnection process to bring these projects online, MISO developed a new proposal called the "Expedited Resource Addition Study" (ERAS). The ERAS proposal, if passed, will streamline natural gas projects at the expense of all the projects stuck waiting in the queue. As part of its justification for this proposal, MISO cited a potential resource adequacy shortfall of 2.7 gigawatts (GW). However, the study used to identify this potential shortfall assumed that no energy storage will be built in the next five years.



In fact, there are 60 gigawatts (GW) of storage in the MISO queue right now, which can be constructed in 12-18 months. Energy storage can effectively integrate into the Midwest's fuel mix, but MISO needs to give it a fair chance. The amount of storage capacity in the queue is enough to meet MISO's resource adequacy requirements for five years. And there's another 50 GW of hybrid projects in the queue. Even when factoring in the 21% completion rate, there are still 18 GW of capacity through storage and hybrids in the queue, and once [MISO's planned transmission portfolios](#) are built, the completion rate should improve, and an increase to 35% would add another 29 GW of capacity.

For a deeper analysis of MISO's ERAS proposal, head over to our article on the topic: ["Fast and Fair: MISO's Existing Processes Can Meet Resource Adequacy Needs Without ERAS"](#).

Utility Companies are Introducing Storage Projects

Utilities are eager to use energy storage because they, too, recognize the importance of modernizing and stabilizing the electric grid. They also appreciate the ability of storage to capture low-cost renewable energy when it is plentiful and then to dispatch it at peak times. Many utilities are investing in energy storage projects, both large and small, and are simultaneously exploring new storage technologies including long-duration storage.

As an example, Xcel Energy is getting into the energy storage business. Xcel provides electricity to more than 3.7 million customers in 8 Western and Midwestern states. Xcel has pledged to be a [net-zero](#) energy producer by 2050 and aims to reduce carbon emissions by 80% by 2030. Xcel is partnering with CGA member Form Energy to deploy an iron-air battery storage system next to its 710 MW Sherco solar facility. The energy storage system will be a 10 MW, 100-hour, multiday battery and is expected to come online as early as 2025.

Energy Storage is the Future of our Grid

As we work toward transitioning to a clean energy future, energy storage will play a key role in ensuring grid reliability as it also enables the efficient integration and management of renewable energy sources such as wind and solar. Clean Grid Alliance will continue to advocate for common-sense storage policies in the MISO market, while long-duration storage will become even more critical as more coal and gas plants are retired. Most of the existing and planned storage on the system today is limited to a 4-hour duration product. These shorter-duration batteries serve a critical function as they take the place of gas peaking plants and balance renewables, but long-duration storage has the promise of being a game-

changer!