

New Federal Rules are Helping Energy Storage Grow in the Midwest

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Rapidly falling costs for lithium-ion batteries are leading to exponential growth in energy storage in the US. When fully implemented, new rulings from the Federal Energy Regulatory Commission (FERC) will further accelerate the growth of the storage industry, by requiring equal access to wholesale energy markets for storage projects. A recently-proposed 200 megawatt (MW) solar development in Kenosha County includes an option for a 50 MW battery, which would be the first utility-scale storage project in Wisconsin if it is built.[i]

Utilities are developing more renewable energy because it is becoming cheaper than coal or natural gas, and it helps them comply with renewable portfolio standards (RPS) passed to address climate change and reduce pollution. Energy storage enables more development of intermittent renewable energy, such as solar and wind energy, because the batteries charge with surplus electricity to be used when there is no sunshine or wind blowing. Batteries can also provide ancillary services, such as frequency regulation and voltage support, which are necessary to avoid power outages.

Because large batteries for energy storage use electricity by charging, and put electricity back onto the grid by discharging later, storage projects did not easily fit into the rules developed over the years for regulating traditional powerplants in wholesale energy markets. Last year, FERC issued Order 841, which requires wholesale grid operators to develop tariffs for market rules for energy storage that recognize the physical and operational characteristics of electric storage resources, to facilitate their participation in wholesale electricity markets.[ii]

Industry analysts expect FERC Order 841 to lead to more growth in energy storage development, once grid operators like the Midcontinent Independent System Operator (MISO) implement the new rules.[iii] FERC Order 845, which modernized FERC's large generator interconnection agreement, also contained provisions which may boost storage development by making it easier for storage developers to secure interconnection agreements with grid operators.[iv]

In 2018, installed energy storage capacity in the US grew 44% over 2017.[v] The Energy Storage Association projects that the value of the energy storage market will grow five-fold between 2018 and 2020, and be a \$4.7 billion industry by 2024.[vi] While it is unlikely that all of the projects will be built, MISO's interconnection queue currently contains 13 applications for studies of utility-scale storage in the MISO region, including three in Wisconsin that would come online in 2021 if they are built.

Besides utility-scale projects, the market for smaller scale, behind-the-meter energy storage is expanding rapidly. A growing number of businesses and homeowners are installing batteries to enable more onsite solar generation, or for backup in case of a power outages. As costs of batteries continue to fall and utility demand-charges rise, utility customers that currently pay demand charges will likely begin to consider options related to the purchase of battery storage to reduce their peak demand for electricity and the associated demand charges.[vii]

[i] Chris Hubbuch, Proposed Kenosha County solar farm could feature Wisconsin's first utility-scale battery, Wisconsin State Journal, March 12, 2019 https://madison.com/wsj/news/local/environment/proposed-kenosha-county-solar-farm-could-feature-wisconsin-s-first/article_d229e2f5-3deb-5d95-9900-a2340c7b1944.html (accessed April 20, 2019)

[ii] Order No. 841, *Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators*, 162 FERC ¶ 61,127, 18 CFR Part 35; 83 FR 9580-01 (Westlaw).

[iii] Peter Maloney, As grid operators file FERC Order 841 plans, storage floodgates open slowly, Utility Dive, December 11, 2018 <https://www.utilitydive.com/news/as-grid-operators-file-ferc-order-841-plans-storage-floodgates-open-slowly/543977/> (accessed April 20, 2019).

[iv] Peter Maloney, FERC Order 845 opens door a little wider for energy storage, Utility Dive, April 18, 2018 <https://www.utilitydive.com/news/ferc-order-845-opens-door-a-little-wider-for-energy-storage/521992/> (accessed April 21, 2019).

[v] Wood Mackenzie Power and Renewables/Energy Storage Association, U.S. Energy Storage Monitor 2018 Year in Review, Executive Summary, p. 9 <https://www.woodmac.com/research/products/power-and-renewables/us-energy-storage-monitor/> (accessed April 20, 2019).

[vi] *Id.* at 12.

[vii] Identifying Potential Markets for Behind-the-Meter Battery Energy Storage: A Survey of U.S. Demand Charges, National Renewable Energy Laboratory, August 2017 <https://www.nrel.gov/docs/fy17osti/68963.pdf> (accessed April 21, 2019).

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