

ILLINOIS ENERGY STORAGE POLICY

STORAGE POLICY SNAPSHOT

| | |
|--|--|
| <i>Does Illinois have an renewables mandate?</i> | YES, a legislative mandate to source 25 percent of the state’s energy from renewable resources by 2025. The mandate is placed on all utilities and alternative energy suppliers. |
| <i>Does Illinois have a state mandate or target for storage?</i> | NO |
| <i>Does Illinois offer financial incentives for energy storage development?</i> | NO |
| <i>Does Illinois have a policy for the strategic deployment of Non-Wires Alternatives or Distributed Energy Resources to defer, mitigate, or obviate the need for certain T&D investments?</i> | NO |
| <i>Does Illinois have a policy addressing multiple use applications for storage?</i> | NO |
| <i>Does Illinois have a policy on utility ownership of storage assets?</i> | NO |
| <i>Does Illinois allow or mandate the inclusion of energy storage in utility IRPs?</i> | NO |
| <i>Has Illinois modified its permitting requirements specific to energy storage?</i> | NO |
| <i>Does Illinois allow customer-sited storage to be eligible for net metering compensation?</i> | UNCLEAR |
| <i>Has Illinois revised its rate structures to drive adoption of behind-the-meter storage?</i> | NO |
| <i>Approximate development of storage capacity in Illinois</i> | ? |

STORAGE POLICY ASSESSMENT

If there is one U.S. state that illustrates the conflict within the energy sector of moving from a fossil fuel based market to one based on renewable clean sources—and the struggle between state and federal policy to determine a path forward—it is Illinois.

Through a series of market-changing state legislation, Illinois and its executive leadership have for the last several years been moving steadily toward a clean energy environment that is enabled by a suite of emerging technologies (e.g., advanced smart meters, distributed energy resources, and energy storage). Moreover, stakeholder groups such as the Illinois Clean Jobs Coalition are well mobilized and aggressively advocating for Illinois to become the first state in the continental U.S. to be powered entirely by renewables. However, progress toward that renewables-based, clean energy future now appears to be stagnated by conflicts with federal policy and the state’s participation in the PJM Energy Market. How the current policy disputes plays out will have a direct impact on the future for energy storage in Illinois.

The policy disputes in which Illinois is currently embroiled are complex and need to be thoroughly unpacked to fully appreciate how energy storage may be caught in the crossfire. Some background is necessary, which then leads into an analysis of current state activity to redefine the energy sector in Illinois, along with the reasons why the state-driven plan remains at odds with federal directives.

First, let’s establish some background about Illinois, as it is one of those states offering a dichotomy of characteristics that calls into question its future path toward a clean-energy, storage-centric future. Considering the following:

- The population of Illinois is concentrated in a few large urban areas, with the balance located in rural and lightly populated areas.
- Illinois is a fully deregulated market, with its utilities functioning solely as “wires-only” (T&D operations). Approximately 90 percent of the state has its power delivered by one of two investor-owned utilities (Ameren Corp., serving 69% of the state and Commonwealth Edison serving about 21 percent). The balance of customers in Illinois are served by municipal utilities or electric cooperatives.
- Illinois currently gets the majority of its electricity from nuclear, which accounts for more than half of the power produced in the state over the last two decades. In 2018, 52 percent of the net electricity generation in the state was produced by six nuclear power plants and their associated 11 reactors. Based on these nuclear assets, Illinois has the largest number of nuclear power plants in the U.S.
- By comparison, coal generation is the second-largest source of electricity in Illinois; in 2018 coal-based fuel accounted for 32 percent of Illinois’ in-state generation.
- The balance of Illinois’ generation comes from natural gas (about 9 percent in 2018) with renewables (mostly wind and some biofuel) providing about 7 percent in 2018.

- Despite being fully deregulated and open to competition for the generation of energy, the penetration of distributed energy resources (DERs) and renewables has been quite low across the state. This has largely been due to a lack of financial incentives and regulatory mandates typically used by other states.
- Illinois is part of two regional grid systems: The northern part of the state (including Chicago) is served by PJM; the southern part of the state is served by the Midwest System Operator (MISO).
- The two IOUs in Illinois, Ameren and ComEd, are near completion in their deployments of advanced metering infrastructure (AMI). Of the 4.2 million customers served by ComEd and the 1.2 million served by Ameren, all customers should be outfitted with an AMI meter by the end of 2019. Funding for the AMI deployment came through legislation with the Energy Infrastructure Modernization Act in 2011.
- The current Renewable Portfolio Standard (RPS) in Illinois requires ComEd and Ameren and alternative retail electricity suppliers to obtain 25 percent of their power through renewable resources by 2025, with specific percentages of the standard coming from wind, solar PV, and distributed generation.
- Attempts to increase this target further are included in pending legislation. However, the state is falling significantly short of its target, with interim deadlines beginning in 2020. The challenge in developing a robust renewables market appears to be correlated to an absence of other incentive-based policies designed to encourage renewables, DERs, renewables combined with energy storage, etc. Despite interim target deadlines (14 percent by 2020), according to the Illinois Power Agency the state is presently generating less than 7 percent of its electricity sales from renewables.

With these market characteristics in place, appears to be experiencing some significant “growing pains” as it attempts to determine how to frame its energy future. Put another way, Illinois also seems to be caught in the gap between vision and reality. It’s clear that the executive leadership in the state (currently personified by Gov. J.B. Pritzker) envisions a clean-energy future and that vision is supported by the legislative branch as well with multiple bills pending in the Illinois Legislature that would increase the state’s commitment to renewables and clean energy. However, likely due to the ambiguities at the federal level, legislative momentum in the state appears to be diminished.

So what exactly is the conflict between Illinois’ goals and federal policy?

The way that the deregulated market in Illinois has been structured is based on transactions in which individual customers and businesses purchase electricity from “wires only” utilities such as ComEd and Ameren, which in turn purchase electricity through PJM and MISO, respectively. Illinois has also participated in PJM’s capacity market, in which electric suppliers are required to have enough resources to meet customer demand plus a reserve amount.

The wrinkle in this existing set-up is that PJM has proposed two options that would impact the profit opportunities for specific resources bidding into its capacity market. The first option would set a minimum price for certain subsidized power generations (e.g., renewables and nuclear) that would require these resources to bid into the capacity market at prices they would have been bid at if they had not received any state subsidies. The second option is that PJM would allow states to take subsidized generation out of the capacity market altogether, eliminating capacity-guarantee payments that such generation is presently receiving.

Environmentalists have argued that any changes made to PJM's capacity market that negatively impact payments for renewable and nuclear energy from its capacity market would favor fossil fuels over non-carbon sources of energy. Further, any changes made to how PJM structures transaction fees for the wholesale market would have a direct impact on ComEd, which serves the northern part of Illinois that includes the Chicago metropolitan hub.

The basis of the opposition to such a change is that PJM's capacity market would become unquestionably biased toward larger power plants (i.e., fossil fuel based generation) and impede Illinois' ambitious renewable goals. In addition, the changes that PJM is proposing would also have a huge impact on Exelon Corp., the parent of ComEd, as the owner of the multiple nuclear plants in the state. Exelon has argued that any nuclear plant that would be decommissioned would likely be replaced by natural-gas fired plants, which would render the state's goal of a carbon-free power grid impossible to achieve.

For now PJM's members are waiting for a final decision from FERC, and have been in a "holding pattern" for a year or more. Therein lies the heart of the conundrum that is stalling clean-energy policy development in Illinois, and creating "collateral damage" (i.e., market stagnation) for energy storage in the state. What places Illinois in a state of limbo is that FERC has not issued a final ruling on PJM's proposed changes. Since any ruling by FERC would have obvious implications for legislation in Illinois, it is not surprising that Senator Bill Cunningham (D-Chicago), chair of the Illinois Senate's energy committee and sponsor of the Senate Bill 1781, was quoted as saying, "There's a lot of shifting ground in the energy space right now in Illinois. But given all the complicated policy initiatives facing the Legislature right now, this session, I think it's fair to say energy related concerns have been relegated to the back burner for now."

If FERC does not allow subsidized resources like wind, solar and nuclear to participate in capacity markets, it is likely that Illinois will re-evaluate its membership in PJM. There would likely be two potential outcomes for Illinois once FERC issues a final ruling on PJM's proposed changes: assume either full or partial responsibility for its own capacity market. If the first option becomes a reality, Illinois would likely exit from the PJM capacity market and create its own capacity market with oversight from the Illinois Power Agency. If the second option is elected, Illinois' ability to obtain capacity would be limited to specific resources. With the enormous operational changes that either move would create, it's no wonder that legislative policy on energy storage is (unfortunately) low on the totem pole for Illinois policymakers at this time.

The uncertainty of Illinois' path forward due to these issues taking place outside of the state's borders has created a gap of state-based energy storage policy in Illinois. While there has been a lot of discussion among policymakers in the state, at present Illinois does not have any rules or regulations that explicitly pertain to energy-storage deployment. Unlike other states that have emerged as leaders in energy storage policy, Illinois has no procurement mandate, no financial incentives provided to energy storage system (ESS) deployments, and utilities in the state are not required to include energy storage in their integrated resource plans.

An assessment by the Energy Storage Association characterized Illinois as having a "good opportunity for storage" even though the state has seen minimal policy action on storage to date. The ESA correlated Illinois' potential for energy storage development to its participation in regional transmission organizations like PJM and MISO.

At the present time, Illinois has very limited storage capacity. The most recent reports, compiling data from 2017, and published in a report from the Smart Electric Power Alliance in 2018, indicated that only 0.3 MW of storage has been deployed in the state (again, that is from 2017 data—more recent data has not been publicly available).

The state has also struggled to meet its renewable requirements, which were codified in late 2016 through the Future Energy Jobs Act (FEJA), which confirmed the goal of 25-percent renewables by 2025. There is also an interim target of reaching 16-percent renewable energy by 2020. Based on 2017 data, Illinois produced about 7 percent of its electricity from renewable resources, falling far short of where it needs to be in only five years, or even next year.

State regulators at the Illinois Corporation Commission, the state regulatory commission, are considering proceedings that will investigate the value of storage and financial incentives for energy storage deployments. It has also been socialized that Illinois will need to update its interconnection rules and regulations to ensure fair, streamlined and cost-effective access to energy storage solutions. Given that Illinois has completed widescale deployment of AMI, the interconnection rules will need to be updated to address energy storage's impact on metering, telemetry, and accounting.

Moreover, Illinois can be characterized as a state that is slowly and deliberately defining the landscape for an expected proliferation of renewables and other distributed generation, including energy storage. It's clear that Illinois wants to lay a solid foundation for grid modernization and increased penetration of renewables and DERs. However, the "slow and steady" approach that Illinois is taking may be overshadowed by other states in the Midwest that are moving more aggressively toward defining storage and clean energy policies (e.g., Minnesota, which has taken substantive steps to create a cost-benefit analysis for storage while committing the state to generating 100 percent of its electricity from clean sources by 2050). Iowa is also making advances that may surpass Illinois' progress: specifically, Iowa is exploring a tax credit for battery storage to complement the state's wind and solar generation and is conducting "value of storage" analysis, which Illinois has socialized but as of yet has not pursued.

It's rather like the classic conundrum waiting for the energy storage market to grow and then developing policies in response, or first creating policies that are intended to stimulate greater deployment of storage technologies. At this point, Illinois appears to be taking the former approach, and the concern is that its market will not grow at the pace that is desired until enabling policies are solidified at either the Illinois Legislature or the Illinois Corporation Commission.

The bottom line is that while Illinois has the potential to be a market leader in clean energy, legislative action to enable such a position (which has been the preferred method of revising / re-building developing Illinois' energy sector) has stagnated.

EXECUTIVE DIRECTIVES

Illinois Governor J.B. Pritzker (D) is one of a handful of gubernatorial candidates who campaigned and were elected in 2018 based largely on a clean-energy platform. During his first month in office, Gov. Pritzker joined governors in Michigan, Minnesota and Wisconsin in backing the U.S. Climate Alliance, a coalition of states committed to the terms of the Paris climate accord. Pritzker has said that the approach toward developing clean energy policy in Illinois will be "gradual," with an emphasis placed on bringing jobs back to coal-mining communities that are already seeing reductions in workforce due to the move toward non-carbon resources.

Despite this public support for a regional and global alliance, Illinois has not established any 100-percent clean energy mandate through either legislation or regulatory decision. Illinois is not alone in this respect. As of October 2019 no Midwestern state legislature has passed new legislation establishing a commitment to 100 percent clean energy.

LEGISLATION

Following on the transformative legislation in 2011 that provided incentives and requirements to jumpstart the AMI and energy efficiency markets in Illinois are a handful of competing energy bills that remain alive but potentially on hold within the Illinois Legislation. The outcome (i.e., which bill or bills ultimately become law) has the potential to rewrite Illinois' energy law and direct the electricity mix in the state that will be likely to dominate for the next decade.

The Energy Infrastructure Modernization Act (EIMA) (2011)

- Authorized up to \$3.3 billion for advanced metering infrastructure (AMI) and other grid investments by Ameren (\$648 million) and ComEd (\$2.6 billion).

- The law increased funding for energy efficiency programs and to encourage greater use of solar and wind power.
- The law intended for a significant expansion of the intelligent charging stations needed to encourage greater use of electric vehicles.
- Protected consumers during a 10-year period of investment through strong oversight and an intervener process involving advocates for consumers and business.
- Introduced greater stability to the regulatory process to incent investment in grid modernization through the use of performance-based ratemaking metrics.

The Illinois Future Energy Jobs Act (SB 2132 / HB 3624) (Public Act 99-0906) (2019—pending)

- Focused on building renewable generation through wind and solar.
- Would establish a clean peak program that would include energy storage resources that commit to provide demand reduction during times of high demand.
- The bill calls for a more integrated grid planning process among the state’s IOUs, encouraging them to look more closely at non-wires alternatives and anticipate where renewable energy is likely to be sited in the future.
- While the FEJA did not address energy storage specifically, the legislation does not limit the ability to deploy energy-storage devices, and thus may be used as the justification for using ESS as the platform for integrating DERs into the regional electric grid.
- Requires utilities to procure 25 percent of the state’s energy from renewable resources by 2025; by definition, “utilities” includes the two large IOUs (Ameren and ComEd) and also smaller, municipal utilities and electric cooperatives.
- Calls for transitioning Illinois to 100 percent renewable energy by 2050. The bill specifically calls for the procurement of at least 16,500 MW of solar and 7,300 MW of wind by 2031 to reach 50 percent renewables, reaching 100 percent renewables by 2050 and a 100-percent carbon free power sector by 2030.
- The bill specifically states that utility procurement plans shall include cost-effective renewable energy resources equal to a minimum percentage of each utility’s load for all retail customers as follows: 25 percent by June 2025; 45 percent by June 2030; 90 percent by June 2045; and increasing that amount to at least 100 percent carbon-free electricity by 2030. The bill also directs the Illinois Power Agency to take over capacity procurement responsibility for northern Illinois (included in the PJM market) to allow renewables to continue participating in the market.

Illinois Coal to Solar and Energy Storage Act of 2019 (House Bill 2713) (2019—pending)

- Intended to keep uneconomic coal plants online another five years while supporting the development of more clean energy.
- Would repurpose coal plant sites, mostly located downstate, to solar and energy storage, resulting in approximately 500 MW of new renewable generation coming online between 2021 and 2022.

- Establishes the Coal to Solar and Energy Storage Incentive and Plant Transition Fund as a special fund in the State treasury to provide transitional support funding to coal-fueled electric utilities participating in the utilization of the renewable energy credits.

Requires the electric utilities to file a tariff for the billing and collection of a Coal to Solar Energy Storage Initiative Charge on each kilowatt-hour of electricity delivered to its delivery services customers within its service territory at specified rates and to deposit a percentage of its collections in the Coal to Solar and Energy Storage Incentive and Plant Transition Fund.

Path To 100 Act (House Bill 2966 / Senate Bill 1781) (2019—pending)

- An energy omnibus bill that would direct the ICC to study energy storage potential in Illinois and to recommend a target above 1,000 MW by 2030. The study must include analysis of the potential for and barriers to the implementation of energy storage in Illinois.
- Electric companies would be able to recover costs associated with increased energy storage; the bill would also allow for rebates for storage at \$350/nameplate capacity kW if storage is part of distributed generation and uses the same inverter.
- Would expand Illinois' renewable energy standards to drive new wind, solar and storage development and bring the state to 100 percent clean energy.
- Would expand Illinois' RPS from its current requirement of 25 percent renewable energy by 2025 to 40 percent renewables by 2030.
- Would drive procurement of an estimated 6,000 MW of new utility-scale solar; 6,500 MW of new wind power; and 7,500 MW of new residential, commercial and community-scale solar.
- Would gradually increase the funding available to support year-over-year growth in wind and solar energy in order to meet customer demand.
- Would require the ICC to open a proceeding to update interconnection standards.
- Would increase the cap on the amount that utilities can increase rates to pay for renewable energy. Currently the cap stands at 2 percent of a customer's utility bill, but that would be increased to 4 percent if the bill is enacted.

Energy Storage Systems (SB 1792) (2019—pending)

- Would require the ICC to contract with an independent consultant selected through a Request for Proposal process to produce a report analyzing the potential costs and benefits of energy storage systems.
- Would establish that the independent contractor must analyze the following:
 - Cost savings to ratepayers from the provision of services;
 - Direct cost savings to customers who deploy energy storage systems;
 - Assessment of energy storage's ability to integrate renewable resources;
 - Improved reliability and power quality;

- The effect of retail electric rates over the useful life of a given energy storage system compared to the impact on retail electric rates using a nonenergy storage system alternative over the useful life of the nonenergy storage system alternative;
- Reduced greenhouse gas emissions; and
- Any other value reasonably related to the application of energy storage system technology.

REGULATIONS

As of October 2019 there has not been any significant regulatory activity in Illinois that directly impacts the energy storage marketplace. The Illinois Commerce Commission held a policy session on energy storage in June 2019. The conversation is focused on benefits, barriers and future of energy storage within the state. It is presumed that regulatory action on energy storage would follow the passage of one of the legislative measures summarized above.

UTILITY INITIATIVES

Leadership at Commonwealth Edison (ComEd) have publicly stated that they see a significant role for energy storage on Illinois' electric grid if the state is going to realize its aggressive renewables goals. "At the end of the day, if we're going to handle the intermittency of a lot of renewable resources, storage is going to be a big component of it," ComEd CEO Joe Dominguez was quoted as saying.

ComEd has five energy storage pilots that are live or in the planning phase. The pilots range from a 25-kw community energy storage system in Beecher, Illinois, to a 2-MW battery system in Zion. The latter project has been publicly promoted as being capable of deferring expensive substation and feeder upgrades. In addition, ComEd is working with Lockheed Martin to supply a GridStar energy storage system for the creation of a microgrid, which the ICC had already approved to be built in the Chicago neighborhood of Bronzeville. Once built, this pilot project will be the first utility-operated microgrid in the U.S.

Ameren Missouri, a unit of Ameren Corp., filed plans with the Missouri Public Service Commission to build three solar + storage facilities across Missouri. In addition, Ameren is investing in a new microgrid, which operates when connected to a larger electrical grid but can also operated independently. Ameren Missouri is investing nearly \$68 million in these solar + storage facilities as part of the company's smart energy plan, which includes thousands of electric projects designed to create a smarter, stronger, more reliable energy grid and introduce new sources of renewable energy, all while keeping rates stable and predictable. The solar + storage installations are scheduled to be completed in 2020.

While these initiatives are important and demonstrate a long-term commitment to energy storage development among the state's two investor-owned utilities, it is unfortunate that

policy within Illinois does not presently allow for energy storage to be included in renewables requirements.

THE FUTURE OF ENERGY STORAGE IN ILLINOIS

The ICC is presently holding investigations, inquiries and hearings to learn about the value of energy storage resources and the role they can play in the regional market. To move the market in Illinois forward, there are several areas for policy development that would seem to be necessary:

- Continue to set policy on energy storage through legislation, as the state has done so successfully for other technologies such as AMI.
- Develop a cost-benefit analysis for energy storage development that is specific to the state.
- Use the findings from the cost-benefit analysis to determine whether or not to set procurement targets for energy storage.
- Determine what financial incentives may be appropriate to attract investment in energy storage systems in the state?
- Consider what new rate designs might be necessary to stimulate the deployment of energy storage solutions.

Also, since Illinois is already one of the leaders in applying performance-based ratemaking (PBR) principles to reliability and quality of service along with energy efficiency, it would be a natural extension to evaluate how these principles can be applied to DERs generally and/or energy storage specifically. PRB, which is not a new concept and has been applied in various regulatory jurisdictions, utilizes utility performance metrics and earnings adjustments to align financial incentives with state policy goals. The Energy Infrastructure Modernization Act of 2011 created new metrics and associated rewards for reliability and then the FEJA took this methodology a step further by applying PBR to energy efficiency. It is perfectly conceivable that the ICC could take additional steps to develop new metrics and earnings adjustments specific to renewables, DERs or energy storage to incentivize utility leadership in ESS development. Categories of utility performance could include peak demand reduction, system efficiency, customer engagement, and accelerated deployment of DERs or integration of renewables with DERs.