

Takeaways from the 2017 Solar Power Midwest Conference for the Ohio Solar Sector

October 26, 2017

I recently attended the [2017 Solar Power Midwest Conference](#), hosted by the Solar Energy Industries Alliance (SEIA) and the Smart Electric Power Association (SEPA). The conference included a variety of panels with developers, utilities and policymakers. Ohio's solar sector was not a subject of much direct discussion, however, a number of themes are relevant to Ohio. My summary notes on a number of the panels, along with my own commentary and takeaways for the Ohio solar sector, are below.

“Opportunities and Challenges in the Midwest Residential Solar Market”

Summary: SEIA indicated that overall solar growth is being led by falling prices in all sectors. The Midwest curve for solar deployment is similar to the national curve but on a smaller scale. In the residential sector, the Midwest is falling behind the national trend in terms of quantity of solar installed, with net-metering remaining a key driver in most states. A Missouri-based developer shared how a utility-driven rebate program was important to creating initial customer demand that lasted beyond the end of the rebate program, highlighting the importance of incentives to kick-start broader market interest and familiarity. A national solar company highlighted the continued utility push for fixed distribution fees and demand charges, which undercuts the ability for consumers to save money by managing their electricity use or by self-generating. Finally, there was discussion about recent regulatory and legislative activity in Michigan and Indiana reducing net metering benefits and implementing demand charges.

Takeaways for the Ohio solar sector: In the territories of Ohio's investor-owned utilities (IOUs), net metering remains a key driver for residential solar. Ohio's net metering law, Ohio Revised Code 4928.67, and the corresponding regulations administered by the Public Utilities Commission of Ohio (PUCO), Ohio Administrative Code 4901:1-10-28, are generally viewed favorably for residential solar. Ohio's current net metering rules remain under a long-standing challenge by the IOUs at the Ohio Supreme Court¹. More immediate, the PUCO recently initiated the five-year review of the net metering rules. A stakeholder workshop for the rulemaking was held on October 3, 2017. The PUCO will release proposed rules, presumably in the near future, initiating the comment period before the PUCO adopts final rules.² On the issue of demand charges, a number of IOUs have ongoing and upcoming distribution rate cases, and demand charges are likely to be part of these proposals. Missing from the panel was a discussion of Property Assessed Clean Energy (PACE) financing as a vehicle for residential solar development. Ohio is one of the most active states with PACE, which could become a potent tool for residential solar development.

“Capitalizing on the Solar + Storage Revolution”

Summary: The opportunities for pairing solar and storage continue to be a hot topic within the industry. From peaking capacity and fast-acting regulation services to bulk energy storage and reserves, grid operators see diverse opportunities for energy storage technologies, while customers find value in onsite backup power supply and demand charge savings. Panelists discussed the various value streams that solar and storage can provide. A recent paper by the Rocky Mountain Institute found that batteries can provide up to 13 services to three different stakeholder groups³. However, a single project can only capture so many of these values streams and will partly depend on whether the storage system is in front of the meter or behind the meter. Panelists discussed the regulatory debates over how to treat storage assets, as generation or distribution systems resources, and

discussed how a modern regulatory framework could allow a storage resource to shift back and forth between these categories. Panelists also discussed the recent Federal Energy Regulatory Commission (FERC) Notice of Proposed Rulemaking (NOPR) concerning the aggregation of distributed energy resources (DERs).⁴ Finally, panelists stressed that price signals must continue to evolve in order for projects to capture the potential value streams and that access to customer data is critical in order to effectively project cost savings.

Takeaways for the Ohio solar sector: As counsel for one of the parties in a [solar and storage project in the Village of Minster](#),¹ I have had the opportunity to experience firsthand how a battery storage project can change the capabilities and economics of a solar project. The subject of battery storage is beginning to find itself at the PUCO. The issue was highlighted multiple times in the PUCO's ongoing grid modernization effort, [PowerForward](#). Whereas the first two phases of PowerForward were more focused on exploring potential grid modernization technologies, the third phase, which is set to begin in early 2018, will focus on rate design issues. These rate design issues could have significant implications for future deployment of solar and storage. Additionally, the PUCO will soon decide a proposal in which AEP Ohio is requesting to build a pilot microgrid project. Under the proposed stipulation, AEP Ohio will not own the microgrid's behind-the-meter storage systems but may be allowed to own storage assets providing distribution services.⁵

"Meeting Corporate Demand for Solar in the Midwest"

Summary: Corporations are increasingly demanding solar power, often for the dual purpose of achieving sustainability objectives and to hedge their energy costs. Whereas corporate demand for solar used to be entirely about sustainability, as prices decrease, the cost savings and price hedging characteristics of solar are now becoming key drivers. One developer on the panel noted that many corporations like being on the "cutting edge" of technology and view an investment in solar as a way to demonstrate leadership. Another developer discussed how some corporate customers have an interest in "being the reason" that a particular project goes forward. A panelist from a large bank noted that he is seeing more corporations wanting to invest in the tax equity aspect of solar projects. He also noted that his institution is seeing more demand for onsite generation by corporations in more mature markets and suspects that this trend will find its way to the Midwest.

Takeaways for the Ohio solar sector: In recent years, tech companies like Amazon have pushed for renewable energy in Ohio. This corporate demand for renewable energy in Ohio has largely been focused on wind power, so it will be interesting to see whether growing corporate demand for renewable energy in Ohio will extend to the solar sector.

"Trends and Perspectives on Community Solar in the Midwest"

Summary: Community solar, meaning offsite shared solar, is becoming more common in the Midwest. Throughout the Midwest, there are 81 utility community solar programs, with the majority through electric cooperatives, representing a total of 146 MW. In particular, Minnesota has the largest program nationwide, and recent legislation in Illinois has further incentivized community solar. Panelists provided a variety of case studies from around the Midwest and discussed the merits of different participant models. In customer surveys, the primary drivers for community solar were financial reasons, energy security and sustainability.

Takeaways for the Ohio solar sector: As I described in more detail in this previous [publication](#),¹ a number of parties, in the last net metering rulemaking, called on the PUCO to initiate an examination of aggregate and virtual net metering. No such discussion has commenced. However, as discussed above, the PUCO is in the early stages of commencing another net metering rule review, during which calls for the commission to address these issues may be renewed.⁶

"A Midwest Perspective: The Grid of the Future"

Summary: A number of states across the country are initiating grid modernization proceedings. Panelists discussed how these proceedings are an opportunity to further incorporate distributed energy resources onto the grid. The opportunity for grid modernization proceedings to enable a move beyond net metering by creating new price signals and value streams for distributed energy was also discussed. Panelists also discussed the changing perspective of the grid becoming a collaborative platform that can enable peer-to-peer transactions. One panelist from a Midwest utility described the utility's shift from a "pipe

model” to a “platform model.” Whereas the former process focuses on the product and realizes value from the optimization for the process, the “platform model” focuses more on interaction between producers and consumers, generating value through creation, curation and consumption of content.

Takeaways for the Ohio solar sector: As discussed above, the PUCO’s grid modernization process, PowerForward, is currently underway. The upcoming third phase, which will focus on rate design issues for the “grid of the future,” will likely be the most important phase of the process for distributed solar.

In sum, the solar sector in the Midwest and Ohio continues to be dynamic. Ohio’s solar sector suffered a serious setback in 2014 when the General Assembly passed Senate Bill 310, freezing Ohio’s renewable energy standards and eliminated the in-state solar requirement. Prices for Solar Renewable Energy Credits fell dramatically and have not recovered. However, with solar prices dropping and increased demand from consumers, Ohio’s remaining policies of net metering, renewable energy tax abatements and PACE may enable additional distributed and utility scale solar opportunities. The policy and ratemaking outcomes in the current net metering rulemaking and the grid modernization proceeding at the PUCO may also have significant implications, positive or negative, for the sector.

[1] Ohio Supreme Court Case Nos. 2014-1290 and 2014-1633

[2] UPDATE (May 2018): The PUCO’s proposed rules modified the compensation credit for net-metering customers to an energy-only credit for excess production. Parties have filed comments and reply comments and the rules are pending a PUCO decision.

[3] <https://rmi.org/insights/reports/economics-battery-energy-storage/>

[4] UPDATE (May 2018): FERC released an order in February 2018 directing operators of wholesale markets — including the PJM Interconnection (the regional transmission organization in which Ohio is located) — to develop market rules for energy storage to participate in wholesale markets in a manner that accounts for the physical and operational characteristics of storage resources.

[5] UPDATE (May 2018): The PUCO approved the stipulation, including the microgrid pilot program, in April 2018.

[6] UPDATE (May 2018): The most recent set of proposed rules does not include any provisions concerning virtual net metering.

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