The FERC order issued on December 19, 2019, requiring PJM Interconnection (PJM) to reform its capacity markets has prompted a conversation about how we should respond in Maryland. The order requires PJM to adopt a minimum offer price rule (MOPR) for state-subsidized energy sources. It would effectively preclude wind farms and utility-scale solar from participating in the PJM capacity market. This memorandum explores the following questions:

- How would the FERC Order affect Maryland solar and wind generally and with specific reference to the RPS?
- What are the pluses and minuses of the alternatives before us:
  - Staying in the PJM capacity market for now, while taking ameliorative actions and bold new steps to insulate the state from the turbulence created by the order?
  - Directing utilities to exercise the Fixed Resource Requirement (FRR) option, and submit a statewide capacity plan to PJM for approval?
- What options should Maryland pursue in order to make the most of the opportunity provided by the FERC order?

**Impact on Maryland solar and wind**

Wind power plants stand to lose perhaps $1 per megawatt-hour in capacity revenue by being priced out of that market. This is very small compared to the retail prices of $100 to $150 per MWh depending on the end-use market segment in Maryland; it is also small, a few percent, though not negligible in relation to wind PPA prices.

Moreover, Maryland does not require purchase of renewable electricity to fulfill RPS requirements on the Renewable Energy Certificates associated with such generation. Thus even the small loss of capacity revenue is unlikely to significantly affect Maryland’s RPS costs so far as acquiring non-solar RECs is concerned.

Wind power in PJM is by far the cheapest generation option. However, PJM’s capacity market de-rates the capacity value of wind for reliability purposes, so that wind projects that clear the capacity auction only receive ~$1 per MWh. While the loss of that revenue under the MOPR
rule would somewhat affect profits or, more likely, slightly increase PPA prices for the same profit, it will not alter the fundamental order ranking of new electricity generation costs.

Maryland’s solar RECs come essentially from within the state. Increasing solar RPS requirements does mean more solar in the state. However, most solar in Maryland consists of residential and commercial installations, which do not bid into the capacity market. These installations and all future distributed resources will be unaffected by the FERC MOPR order.

We understand that recent utility-scale solar PPAs have already been discounting capacity revenue in anticipation of the FERC order. They are therefore unaffected by it; future utility-scale solar will be in a similar position. Maryland had more utility-scale solar built in 2019 than any other except 2017. Increases in solar are driven mainly by the RPS mandate and falling prices.

Of course, if utility-scale solar could participate in the solar capacity market, the addition of ~$3 per MWh of capacity revenue would have a stimulatory effect. The loss of this modest impact under MOPR can be overcome by a variety of actions taken by the state without withdrawing from the PJM capacity market. The weighted average impact on all solar development would be on the order of $1 per MWh since distributed solar, including community solar, would not be affected if Maryland decides to stress distributed resources, as it should for other reasons – see below.

The largest impact – about $2 or $3 per MWh – is likely to be on offshore wind. Since this is not a distributed resource, all of the development as presently planned would be affected to this extent. However, Maryland’s offshore wind will not come on line for several years. So there is time to consider how to address this segment, as well.

In the PJM market or FRR?

Under the rule Maryland could stay within the PJM capacity market or create its own capacity plan; this is the FRR (Fixed Resource Requirement) Alternative. According to the FERC Order, this plan would be created by Maryland utilities and submitted to PJM for approval. In other words, the order does not provide any avenue that is free of PJM authority over Maryland’s capacity market design.

The following provides the context for capacity market choices and for our recommendations.

- The capacity market process is rushed, to an unreasonable degree, as noted by FERC Commissioner Glick in his dissenting opinion. The order requires PJM to issue its new capacity auction rules within 90 days, after which PJM is expected to schedule at least two capacity auctions this year, which were postponed during the pendency of the FERC order.
- Under the FRR option, Maryland would have to hand over planning and control of the entire grid to incumbent distribution utilities— which are owned primarily by Exelon and secondarily by FirstEnergy apart from some cooperative and municipal utilities.
These distribution utilities would submit 5-year plans that satisfy federal “resource adequacy” requirements.

- While the state’s investor-owned distribution utilities are subject to PSC oversight, this is mainly operational in day-to-day walling off of distributed generation. It does not prevent strategic approaches to Maryland’s electricity sector that would harm development of renewables. Specifically, Exelon would want to maximize revenues and profits for its legacy power plants. Vigorous development of solar and wind, especially distributed solar, would make these legacy resources less economically viable. Putting capacity planning in the hands notably of Exelon would put vigorous in-state renewable development (and hence jobs) at risk. In so doing, it is possible that it would also aid the continuation of fossil fuel plants. Thus, given Exelon’s vested interest in preventing large penetration of renewables, distributed generation, and efficiency through both policy and practice, an FFR Alternative could be a serious obstacle to our energy and climate goals.

- Per PJM’s rules, Maryland would have to submit those plans at least four months before the capacity auction that Maryland would seek to avoid. That is almost certainly not possible before PJM conducts the first auction, and, depending on the schedule for the second auction, rushing to complete the FRR proposal could put Maryland at the mercy of Exelon’s and FirstEnergy’s demands.

It is also important to consider the analysis that the PJM Independent Market Monitor (IMM) conducted of the FRR approaches for ComEd, the Exelon-owned utility in Illinois in the Chicago area, published in December. The IMM report analyzed two FRR scenarios. In Scenario 1 net load charges for the ComEd Zone under the FRR alternative would “increase by $414.4 million or 23.6 percent compared to the results of the PJM capacity market in the area for the 2021/2022 Delivery Year.” Under Scenario 2, the most optimistic for the FRR Alternative, net load charges “would decrease by $87.9 million or 5.0 percent compared the results of the RPM Base Residual Auction for the 2021/2022 Delivery Year.”

The risk of cost increases seems to be significantly greater – and those increases could be substantial compared to possible benefits under an optimistic scenario. What is missing is a projection of the cost impact of MOPR within the whole of PJM. The IMM report only compares the FRR option to the PJM status quo. In any case, as a relative matter, it appears that increased costs in one region such as ComEd due to an FRR, would likely result in decreased costs elsewhere in PJM. An FRR is a zero-sum game from a PJM-wide point of view; it behooves us to ensure that we are not on the higher cost side of that game.

In addition, the situation in Maryland seems more complex than in Illinois. Unlike ComEd, Maryland is in at least four different capacity zones: Delmarva, Pepco, BGE, and Allegheny. BGE is one of the highest-priced capacity zones in PJM, but the others are all in lower-priced capacity zones. Also, since Maryland is such a large net importer of generation, it is not clear whether Maryland has sufficient installed capacity to meet FRR requirements without having to import capacity from PJM. That could result in even higher capacity prices within a Maryland

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FRR, while lowering capacity prices further for the rest of PJM. *In that case, exercising the FRR option could result in a perverse cost-shifting onto Maryland consumers, effectively mitigating the cost of MOPR for the rest of PJM by raising the cost of procuring capacity in Maryland.*

It is also possible that an FRR would benefit dirty resources that are now part of Maryland’s RPS. Further, in Maryland, we are not currently subsidizing Calvert Cliffs, so the MOPR would not apply to Calvert Cliffs.

Given these considerations, we have the time to consider the rule carefully without putting Maryland’s planning in the hands of Exelon-owned utilities even as PJM jurisdiction continues. The evidence so far points to high risks and low rewards for an FRR.

**Considering the opportunity for a more resilient, democratic, electricity system**

A resilient and democratized electricity system in Maryland that also protects climate and creates good jobs must rely fundamentally on distributed resources as a complement to development of offshore wind. The primary distributed renewable energy resource is solar. With a focus on residential, commercial, and community solar in a much larger way than at present, Maryland could create a democratized electricity system, especially if it meaningfully expands low- and moderate-income households’ access. Since all this renewable generation would be in the distribution system, it would be outside the capacity market and independent of it. The FERC Order provides a rare opportunity for Maryland to take control of its energy future.

Distributed storage and demand response, including aggregated demand response, are critical complements to distributed solar. Aggregated demand response can be a critical resource; the size of this resource can grow to match central station resource capacity if vehicle-to-grid infrastructure is built on a significant scale. For instance, if all light duty vehicles were electric, the capacity of full long-term parking lots at BWI airport would be roughly comparable to the Calvert Cliffs nuclear power plant.

Distributed resources will also provide the opportunity to create microgrids and more resilient and secure communities.

Efficiency is an essential counterpart to the above resources because it minimizes the total amount of electricity required and the generation capacity needed to meet those requirements.

A distributed, democratized system will require different utility business models. The investment in the distribution side of the system would grow and both utilities and non-utility actors could prosper. But it will require basic changes in ratemaking structure to enable the levels of energy efficiency and wind and solar generation that are necessary to meet our economic, resilience, and climate goals. It has also become clear that such reforms are necessary to ensure all Marylanders have equitable and affordable access to renewable energy, and to
reduce inequitable and unsustainable energy cost burdens that hundreds of thousands of households face throughout the state.

Conclusions

**Conclusion 1:** We believe that the impact of the FERC order on Maryland renewables and the state’s RPS in the next few years will likely be minimal, or at most modest. In any case it is not so significant that it warrants rushed steps to pull the state out of the capacity market, especially since that would strengthen Exelon, which is already far too large a presence in the state, since it acquired the biggest distribution utilities.

**Conclusion 2:** It is better for Maryland to stay within the PJM capacity market rather than rushing into an FRR process; we have at least a year or two to consider options carefully.

**Conclusion 3:** An FRR approach would strengthen Exelon and the various ways it could push for maintaining a large role for legacy resources. This could be a significant setback for renewables, especially distributed solar.

**Conclusion 4:** The problem of the overall impact of the FERC order on legacy resources is complex. The quantitative impacts on Maryland are unclear but it appears possible (even likely?) that an FRR would increase costs for Marylanders, who would then be subsidizing others in PJM. A conclusion that an FRR is a better alternative than staying in the PJM capacity market is very premature, at best; at worst it could be counterproductive in more ways than one.

Recommendations

1. The FRR alternative, whether for one utility or statewide, should not be the preferred alternative of the environmental community, though it would be reasonable to it to be studied and its problems and prospects clarified.

2. We strongly recommend that the environmental community, including the Maryland Climate Coalition, use the occasion of the FERC order to promote a vision of a distributed, democratized, resilient and equitable energy future, focusing initially on the electricity sector. This would enable us to greatly reduce the impact of the present and any future adverse FERC orders and PJM decisions without risking greater reliance on Exelon.

The intervenors in Maryland’s Grid-of-the-Future proceeding and Marylanders for Energy Democracy and Affordability have created a substantial basis for the environmental community to put its advocacy on a strong technical and policy footing even at this initial stage. These efforts are summarized in the Appendix.

**Appendix: Past efforts on energy democracy and grid-of-the-future**

These needs came into sharp focus in 2014-16, when Exelon proposed taking over Pepco, making it the largest utility company in the country and the owner of more than 80% of utility
service in Maryland. Exelon’s track record of opposing renewable energy, of exerting undue influence over utility commissions and legislatures, its conflicts of interest in operating both distribution utilities and massive amounts of baseload nuclear power plants, and other monopolistic practices are anathema to a rapid and affordable transition to renewable energy. The PSC’s decision to approve the Exelon takeover in 2016, made it clear that strong mandates for utility reforms, distributed energy, and grid modernization would be necessary to limit Exelon’s ability to obstruct Maryland’s renewable energy and climate goals.

In its order approving that decision, the PSC included a provision to provide that mitigation: requiring Exelon to petition the PSC to open a grid modernization proceeding. That proceeding was Public Conference 44. Several organizations who had intervened against the Exelon takeover seized on the opportunity to shape the outcome of that proceeding, with a robust strategy for intervening in the PSC proceeding. A team of intervenors (CCAN, IEER, Fuel Fund of Maryland, and Solar United Neighbors) were represented by Earthjustice, with technical support by the Pace Energy and Climate Center. We held two Grid-of-the-Future (GOTF) Summits and formed a statewide alliance, Marylanders for Energy Democracy and Affordability (for which NIRS served as coordinator), to do outreach and education and increase public involvement in the PSC’s grid modernization proceeding (PC 44).

We developed and submitted a detailed proposal to PSC for comprehensive utility reforms and grid modernization planning, as well as energy affordability standards and renewable energy access. See item #14 in PC44. The backbone of the proposal is the creation of a new utility model: a Distributed System Platform (DSP). The DSP would operate the electricity grid much like the internet, as an equal-access network to integrate renewables, storage, energy efficiency, demand response, microgrids, smart EV chargers, etc. Utility business models would become less ownership-based and less monopolistic, under performance-based rates that value the reliability, efficiency, and affordability of renewable and distributed energy resources. We also proposed long-needed consumer protections, including improved energy affordability for low-income households.

Unfortunately, the composition of the PSC changed rapidly in the first year of the Hogan administration, and the hopes that the commission would advance an agenda of clean energy with equity and democracy were ultimately dashed. The commission’s new majority severely curtailed the scope of the proceeding early on in the process, which has resulted in at best incremental (and in some cases inadequate and ineffective) measures, some of which are even less ambitious than what the utilities proposed.

In response, MEDA also developed a legislative agenda to guide and support grid modernization, utility reform, and energy democracy, through a Maryland Energy Bill of Rights. That agenda overlaps with the GOTF proposal in certain areas (energy affordability and equitable access to renewables), and it included reforms to the PSC itself to ensure independence from utility influence and to enable the public to play a greater role in regulating utilities (e.g., providing intervenor funding for the public to engage in rate cases and policy proceedings). The Bill of Rights also includes measures that Climate Coalition members already intend to introduce in 2020 or 2021, such as just transition programs and environmental justice and health impact evaluations.