



Before the Federal Energy Regulatory Commission

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Panel 3:

Interconnection of Offshore Wind via Generator and Merchant Transmission Interconnection Processes

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I am Kenneth Seiler, Vice President of Planning at PJM Interconnection, L.L.C. (PJM). In this role, I am responsible for resource adequacy planning, market efficiency, generation interconnection, and interregional and transmission planning for the development of the Regional Transmission Expansion Plan. Previously, I served PJM in various management roles in system operations, planning and information technology.

On behalf of PJM, it is a pleasure to participate on this panel and share PJM's perspective on the interconnection of offshore wind in its thirteen-state region through the generator and merchant transmission interconnection processes.

Offshore wind integration is a pressing issue of critical importance to PJM, its states and many of its other stakeholders. To put the issue in context, PJM's coastal states have offshore wind targets totaling more than 14,250 MW in new generation, and there are more than two dozen offshore wind projects (totaling over 13,500 MW) in PJM's current interconnection queue. PJM remains committed to partnering with its states and stakeholders to pursue efficient ways to interconnect offshore wind generation, and enhance the onshore grid, to make offshore wind generation deliverable in the PJM region.

Some early successes with offshore wind integration have been achieved in the PJM region. Just last month, in September 2020, Dominion Energy's 12 MW Coastal Virginia Offshore Wind pilot project became the first offshore wind project in federal water to reach commercial operation in PJM's footprint. This marks an important first step in Dominion's current plan to introduce 2.6 GW of offshore wind generation over the next five to six years. Off the coast of Delaware, there is another approximately 250 MW offshore wind project with an executed Interconnection Service Agreement. This project is in the engineering procurement phase of construction.

PJM looks forward to working with its states and stakeholders to accomplish their offshore wind objectives through the use of several available tariffed tools: (1) the interconnection queue process; (2) merchant transmission development; and (3) the State Agreement Approach, which is a means by which a state can choose to implement its public policy requirements utilizing PJM's planning processes. Although offshore wind interconnection and integration may pose some challenges, PJM is working to address those challenges in collaboration with its states and other stakeholders. On the issue of merchant transmission in particular, PJM remains interested in pursuing merchant transmission constructs to facilitate the development of collector lines, although there are complexities that will need to be addressed to realize the potential benefits of this construct in building collector lines and grid improvements to serve future, uncertain generation facilities.

Below is a review of the processes noted above, including a mention of some challenges PJM anticipates relating to each.

1. The interconnection queue has been useful to date in facilitating the integration of offshore wind.

The offshore wind targets of certain PJM states would substantially increase the amount of generation remote from the integrated grid. In turn, this offshore development may require substantial onshore transmission buildout to achieve the goals. To date, PJM's existing interconnection queue process has provided a useful tool for helping begin to achieve the states' renewable targets through onshore renewables, and provide a path for some offshore projects.

However, PJM anticipates that as the scale of offshore wind projects increases – and the scope of the transmission upgrades necessary to integrate offshore wind generation grows in complexity and cost – the traditional interconnection queue construct may not be sufficient, and PJM may need to develop alternative mechanisms to accomplish the required transmission buildout. Examples of such challenges include limited points of entry from the ocean and limited transfer capability to reach load centers. In addition, customers in the queue are often impacted by whether projects ahead of them in the queue are (or are not) moving forward in meeting specific development milestones. The goal should be to accomplish the interconnection and integration of offshore wind in the most efficient and economic manner reasonably possible.

2. Merchant transmission offers additional opportunities to integrate offshore wind into the PJM region, although more work remains to be done to make this possible.

Merchant transmission development is an additional tool that may be available to facilitate the integration of offshore wind generation into PJM's footprint. However, there would need to be refinements to this construct to make it suitable for utilization for the interconnection and integration of offshore wind.

PJM's current merchant transmission process contemplates creating new ties between PJM and its neighbors. Merchants seeking to connect two regional transmission organizations (RTOs) may be eligible for interconnection rights to enable the flow of energy from existing generation between them. But, in the case of a radial merchant line that simply extends the PJM grid without connecting to another RTO or an identified generation project, such projects are not eligible today to receive interconnection rights under PJM's Tariff.

PJM has explored with its stakeholders alternative approaches to merchant transmission focused on the development of one or more transmission lines to "platforms" in the ocean. Under such a scenario, the merchant transmission owner would be responsible for the costs of the transmission buildout and, in return, sell valuable interconnection and transmission rights to individual generators on the platform. Ultimately, the stakeholders did not reach a resolution of these issues.

In addition, there are timing and interdependency concerns. Under a merchant transmission model for a radial line for future offshore wind generators, the merchant transmission provider's queue position and associated interconnection/transfer capacity would essentially be reserved pending the subscription of willing offshore wind generators that do not yet exist. A challenge arises, because the *measures of progress* in a merchant transmission project moving forward are notably different than between a merchant developer seeking to sell interconnection rights and a traditional generator demonstrating movement on the development of a specific physical generating asset.

A merchant transmission platform proposal was presented by Anbaric Development Partners, LLC to the Commission through a Section 206 Complaint, and it was rejected by the Commission on the grounds that PJM's Tariff is not unjust and unreasonable and preferential.¹ Nevertheless, PJM remains open to further consideration of alternative merchant transmission models through the work of this Technical Conference and in collaboration with its stakeholders.

3. The State Agreement Approach is another tool by which PJM's states can engage PJM's planning process to achieve offshore wind goals and other state public policy requirements.

Another alternative means of integrating offshore wind generation under PJM's tariffed processes is the State Agreement Approach. PJM is a multi-state RTO with different renewable portfolio standards within its footprint. The State Agreement Approach allows a state or states to come forth with state-initiated offshore wind projects that could potentially realize state public policy requirements so long as the state(s) agrees to pay all costs of the state-selected buildout.²

With significantly greater amounts of state-initiated renewable generation anticipated to be located offshore in the coming years, there will very likely be a need for more substantial upgrades to the PJM system as well as new greenfield facilities needed on and offshore. A potential path to facilitate this transmission buildout is the State Agreement Approach. PJM anticipates that any such agreements would be subject to review and acceptance by the Commission, and such agreements provide an avenue for dealing with any complexities.

¹ *Anbaric Development Partners, LLC v. PJM Interconnection, L.L.C.*, Docket No. EL20-10 ("Anbaric proceeding").

² See Operating Agreement, Schedule 6, section 1.5.9(a) ("State governmental entities authorized by their respective states, individually or jointly, may agree voluntarily to be responsible for the allocation of all costs of a proposed transmission expansion or enhancement that addresses state Public Policy Requirements identified or accepted by the state(s) in the PJM Region. . . . All costs . . . shall be recovered from customers in a state(s) in the PJM Region that agrees to be responsible for the projects. . . .").

Complexities associated with the State Agreement Approach may include preservation of onshore transmission system capacity, competition among offshore wind projects to access any State Agreement Approach collector line or system capacity, and even competition among the states and developers for available transmission capacity. Regardless of these challenges, PJM looks forward to working collaboratively with those states in its region that have an interest in exercising the State Agreement Approach to plan and construct transmission facilities to facilitate the development, interconnection and integration of offshore wind.