

Preliminary Questions for the PJM TEAC Meeting, Oct. 31, 2023 (Version 1.0)

Submitted by the Maryland Office of People's Counsel (OPC)

Questions are keyed to the identified presentations posted to the TEAC website for review during the Oct. 31, 2023, meeting of the PJM TEAC.

The Maryland Office of People's Counsel (OPC) requests that PJM post these questions (as well as those from other stakeholders) to the PJM website along with PJM's written answers to allow for public and transparent review of PJM's review, analysis and decisions and of the transmission projects subject to PJM's TEAC review implicated by OPC's questions. OPC asks that these questions and comments be formally considered and included in PJM's further review and deliberations regarding the projects under consideration by PJM and the TEAC.

In an instance where a response to a question impinges on limitations or restrictions that PJM has in providing a response, please identify the question (or question sub-part) and the basis for the limitation or restriction. If the information is CEII restricted, please identify the scope of the restriction, and OPC and its consultants will submit a CEII disclosure request to allow for disclosure. Subject to the foregoing, if PJM has developed or prepared written analysis or documentation supporting or related to its response (and not already publicly disclosed through the TEAC meeting materials' filings), OPC requests that such written documentation be provided.

OPC reserves the right to propound additional questions to PJM. OPC requests timely responses to these questions to allow for informed participation prior to and during the second read of the TEAC project selections; or, failing that, an extension of the period for the submittal of questions by the public, PJM responses and disclosure and public comment, prior to the second read.

The Brandon Shores and Wagner units' deactivations, the solutions to address the resulting grid violations and the 2022 RTEP Window 3 solutions selections entail very significant policy/technical decisions, comprising \$5-6 billion in transmission related capital expenditures, construction of major infrastructure facilities across Maryland (generally) and Virginia (for the 2022 RTEP Window 3 projects), and, in the case of the 2022 RTEP Window 3 projects, facilities to address unprecedented increases in electric load (equivalent to the existing load of the metropolitan area of Baltimore) in a very focused area. OPC's questions and the requested disclosures of PJM are fully justified in this extraordinary context.

1. Generator Deactivation Notification Update

"PJM's preliminary assessment indicates reliability violations with Wagner's requested deactivation. The assessment assumed Brandon Shores continues to be in operation." Presentation, p. 4.

- 1.1. **Has Talen (the owner of both the Brandon Shores and Wagner power plants) agreed to an RMR arrangement for the operation of the Brandon Shores power plant through 2028? What is the status of that discussion?**

Response: Continued operation of Brandon Shores is required to maintain reliability until the necessary transmission upgrades are in service. PJM has actively engaged in discussions with Talen regarding the reliability impacts of the Brandon Shores deactivation and the need for Brandon Shores to continue operations. PJM has and will continue to provide status updates to stakeholders via the Transmission Expansion Advisory Committee (TEAC).

1.2. Is PJM aware that Talen’s CEO stated last week the following:

"Given our ample free cash flow and limited need for go-forward growth capex, we believe implementing a shareholder return program is an appropriate part of our overall capital allocation plan," said Mac McFarland, President and Chief Executive Officer. "This share repurchase program demonstrates our commitment to disciplined capital allocation, including prioritizing the return of capital to our shareholders." Talen News Release, Oct. 23, 2023.

Response: While such news release is public information, a company’s stock repurchasing program is not a component of PJM’s tariffed evaluation of transmission system needs related to a generator’s notice to deactivate.

1.3. If Talen is refusing to agree to (an) RMR arrangement(s) for its Maryland plants due to asserted deficient financial resources to cover possible capex required to keep the Brandon Shores and/or Wagner power plants in operation beyond the noticed deactivation dates, how is that squared with Talen’s CEO’s statement about “limited need for go-forward growth capex”?

Response: In addition to PJM’s response to Question No. 1.2, PJM has no insights or opinions regarding the statements by Talen’s CEO as cited above.

1.4. What is PJM’s procedure for Talen’s response to a request for an RMR from PJM if PJM deems continued operation of one or more of the Wagner units are required?

Response: If PJM determines that continued operations of one or more of the Wagner generation resources are required to maintain reliability, PJM will work with Talen and update stakeholders through the TEAC once a path forward is determined.

When will the resource owner disclose which option it will elect for compensation under the PJM tariff, Part V, secs. 115 – 119 for operation under an RMR arrangement, assuming the resource owner agrees to such an arrangement? What is the “avoidable” cost for the Brandon Shores and Wagner units, respectively, under the PJM Tariff, Part V, sec. 115 (and, if not yet determined, what is the procedure for establishing such cost)? Full and early disclosure of the costs of the RMRs for these units are of significant importance to Maryland ratepayers.

Response: Tariff, Part V, Section 113.1 provides as follows: “Upon receipt of notification from the Transmission Provider that Deactivation of the generating unit would cause reliability concerns, the Generation Owner shall immediately be entitled to file with the Commission a cost of service rate to recover the entire cost of operating the generating unit until such time as the generating unit is deactivated pursuant to this Part V (‘Cost of Service Recovery Rate’). In the alternative, the Generation Owner may elect to receive the Deactivation Avoidable Cost Credit provided for under Tariff, Part V.”

Consistent with Tariff, Part V, Section 115, Avoidable Costs consist of incremental expenses required for operation of a unit proposed for deactivation that would not be incurred if the unit deactivated on its desired deactivation date. The components of Avoidable Costs are described more fully in Section 115, and are based on the 12 months preceding the generation owner’s notice of deactivation. Avoidable Costs are one component of the Deactivation Avoidable Cost Rate.

1.5. Will the grid solutions, if deemed required for the Wagner units’ deactivation, be treated as an “immediate need” project and, if so, how will PJM justify and document this?

Response: PJM’s analysis of the reliability impact as a result of the Wagner units’ notice to deactivate is in progress. If PJM identifies reliability needs arising from the proposed deactivation of the Wagner units, they will be classified as immediate needs, i.e., needed in three years or less, given the proposed deactivation date of June 1, 2025. See *PJM Interconnection, L.L.C.*, [185 FERC ¶ 61,107](#), at PP 27–28 (2023).

1.6. What level of reliability violations arise due to sub-groups of the Wagner units retiring? Which violations are due to thermal overloads, and which are voltage stability related?

Response: PJM’s analysis of the reliability impact of the Wagner units’ proposed deactivation is in progress. PJM will provide an update regarding the results of the analysis to stakeholders at a future TEAC stakeholder meeting.

Wagner (as covered by the deactivation units) consists of 4 units (total 841 MW):

Unit	MWs of capacity	Fuel	Age of Unit
Wagner 1	126	Natural gas	67
Wagner 3	305	Coal	64
Wagner 4	397	Oil	51
Wagner CT 1	13	Diesel	56

1.7. Are the reliability violations (preliminarily determined) independent of and arising after the RTEP Window 3 solutions and/or the Brandon Shores deactivation grid solutions, respectively, are constructed and in service?

Response: Consistent with the deactivation study process, Wagner units’ preliminary deactivation analysis is a 2025 analysis. The preliminary analysis does not include 2022 RTEP Window 3 or Brandon Shores deactivation solutions.

1.8. Assuming the Brandon Shores and Wagner units are deactivated, are there circumstances where 1.15 CETO>CETL for additional nested LDAs (e.g., SWMAAC, MAAC)? When and how will this be determined? Do and when do those LDAs result in a locational price adder for the (newly) identified constrained LDAs for the next (or succeeding BRAs)?

Response: Brandon Shores cannot be deactivated until the required upgrades are in place. CETO and CETL will assume Brandon Shores continued operation. Once the upgrades are in place and the Brandon Shores units deactivate, CETO and CETL for affected LDAs will be updated to reflect the deactivations. Wagner analysis is underway.

- 1.9. **What is the RPM capacity accreditation for each of the Wagner units assuming they were to participate in the PJM RPM, as reformed under the currently pending CIFP package before FERC?**

Response: UCAP values for individual units are treated as member confidential information. PJM is restricted from publicly disclosing such information pursuant to Operating Agreement, section 18.17.

Publicly available information can be accessed at: <https://www.pjm.com/planning/service-requests/gen-deactivations> and <https://pjm.com/-/media/markets-ops/rpm/rpm-auction-info/2024-2025/2024-2025-rpm-resource-model.ashx>.

- 1.10. **What is the current “headroom” for interconnection of new generation resources at points of interconnection (“POIs”) located within the Baltimore Gas & Electric (BGE) LDA? What will it be following the completion of the grid solutions for the Brandon Shores deactivation and the pending Wagner deactivation, respectively? What would be the effect on headroom for interconnection to the POIs within the BGE LDA if the CIRs associated with the Brandon Shores and Wagner units were available and treated as headroom in the BGE LDA?**

Response: For the currently available “headroom” at the various BGE POIs, please refer to PJM’s [Queue Scope tool](#).

Future headroom at the POI located within the BGE LDA is determined by the study of new interconnection requests in the interconnection queues. If the generation owner of the Brandon Shores and Wagner units do not transfer the units’ CIR megawatts within one year following the units’ actual deactivation date(s), the capacity held by those units will become available to generators in the interconnection queue once: (i) the transmission upgrades are incorporated into the RTEP base case used for interconnection requests; OR (ii) PJM-recommended baselines approved by the PJM Board for inclusion in the RTEP obviate the need for a network upgrade identified in our cluster studies.

- 1.11. **Is PJM also studying the impacts of Wagner without Brandon Shores online?**

Response: Yes.

- 1.12. **Will PJM be revisiting the transmission solution proposed to address the Brandon Shores’ retirement to see if it could be adjusted to also facilitate Wagner’s retirement?**

Response: PJM’s analysis of the reliability impact of the Wagner units’ proposed deactivation is in progress. PJM will provide an update regarding the results of the analysis to stakeholders at a future TEAC stakeholder meeting.

- 1.13. **How many CIRs does Talen have arising from the Brandon Shores and Wagner plants, respectively? What is Talen doing regarding the usage of the CIRs associated with the Brandon Shores and Wagner plants? Has it transferred them (or filed to transfer them) to other projects in the interconnection queue for utilization following the deactivation of its existing plants? If so, which projects, what capacity will be connected and utilizing what power source?**

Response: The amount of CIR megawatts granted to a generation unit is memorialized in the Interconnection Service Agreement, Specifications, Section 2.1. Questions with respect to CIR transfers should be directed to the generation owner who holds the CIRs.

1.14. Do the Wagner units currently provide reactive supply and voltage control service under PJM Tariff, Schedule 2?

Response: H.A. Wagner LLC currently has a reactive revenue requirement on file with the Federal Energy Regulatory Commission (FERC), which is publicly available under its "[Tariff Database](#)" eTariff title.

2. Reliability Analysis Update (2022 RTEP Window 3 Projects Selection)

2.1. What state and local permits will be required for each of the selected project segments [p. 71]?

Response: The routes proposed for the 2022 RTEP Window 3 projects are preliminary and are subject to revision during the actual siting process. The entities designated responsibility for constructing the project are responsible for determining the applicable federal, state and local permits, as well as acquiring these permits for their final route selections, which will involve their outreach to the appropriate federal, state and local regulatory authorities. PJM's constructability evaluations considered the permitting risks for the projects' preliminary routes, and potential impacts on the projects' feasibility, cost and schedule. However, this evaluation was not intended to identify all required permits for the selected projects. The results of PJM's constructability evaluations including permitting risk assessments are provided in PJM's 2022 RTEP Window 3 Constructability & Financial Analysis Report.

2.2. Has PJM identified a backup or default project segment to the selected project segments, if any one of them is rejected or deemed not feasible in the future for some reason (e.g., due to failure to acquire a regulatory permit)? When and how will PJM determine in the future that a project segment in the award group is not feasible and how will it then adjust its project selection?

Response: For the 2022 RTEP Window 3, PJM identified a set of short-listed scenarios where proposals could address the needs identified. The 2022 RTEP Window 3 "selected proposals" are those identified by PJM as the more efficient or cost-effective solution to meet system needs. PJM deems all its selected proposals for 2022 RTEP Window 3 to be both constructable and feasible. In case a selected proposal is found to be or becomes infeasible, PJM will take appropriate steps to develop replacement solutions at that time and will follow its tariffed processes in the context of its open and transparent stakeholder processes.

2.3. How was (is) the modeling of the 2022 RTEP Window 3 "need" sequenced with the "need" triggered by the Brandon Shores and Wagner retirements? Were the Brandon Shores retirement grid solutions assumed completed in the baseline for the RTEP window, so that the incremental need for 2022 RTEP Window 3 assumed (and benefitted from) completion of the Brandon Shores retirement grid solutions? What is the justification for the sequencing of the modeling? What are its implications for cost allocation to load of the selected transmission projects?

Response: The 2022 RTEP Window 3 was opened prior to PJM receiving the Brandon Shores notice to deactivate. Following receipt of the Brandon Shores notice to deactivate, 2022 RTEP Window 3 was

supplemented by an additional 2027/28 base case to capture, among other key changes, the retirement of the Brandon Shores units.

On July 12, 2023, the PJM Board approved Brandon Shores Immediate-Need transmission solutions, which are required to address the deactivation of the Brandon Shores units. These transmission solutions were not modeled as part of either 2022 RTEP Window 3 base cases.

PJM accordingly evaluated all proposals, including those submitted by the incumbent Transmission Owner (Exelon) addressing the needs related to the deactivation of the Brandon Shores units. PJM consequently, and as shared during the Oct. 3 and Oct. 31 TEAC meetings, identified that the Exelon-proposed solutions submitted through 2022 RTEP Window 3, which included the approved deactivation reinforcements as a subset, collectively meet the needs of the window in the more efficient and cost-effective manner. The deactivation solution was assessed against all proposals submitted through 2022 RTEP Window 3, including those submitted by NextEra and PSEG, whose proposals also attempted to address the Brandon Shores deactivation needs as part of the window.

The 2022 RTEP Window 3 opening, proposal submissions and evaluations occurred prior to PJM receiving the Wagner deactivation notifications on Oct. 16, 2023.

Cost allocation associated with reliability projects are defined within Schedule 12 of the PJM Tariff.

2.4. Did PJM do (or does PJM contemplate doing) an analysis of an optimization of the aggregate costs of the Brandon Shores grid solutions, the pending Wagner deactivation grid solutions and the 2022 RTEP Window 3 selected projects? If such an analysis was done, what were the results?

Response: PJM has confirmed that the proposals selected as part of its 2022 RTEP Window 3 are the more cost-effective, efficient and robust solutions that ensure the needed reliability to the BGE zone under decreased generation (and hence higher load imports) to address the deactivation of the Brandon Shores units. However, the analysis did not specifically assume the deactivation of the Wagner units (since Wagner's notice to deactivate was received by PJM following selection of the short-listed scenarios to 2022 RTEP Window 3). Consistent with Part V of the PJM Tariff, PJM is currently conducting its analysis to determine whether the deactivation of the Wagner unit would adversely impact the reliability of the transmission system. PJM will identify whether any transmission upgrades are needed to alleviate the reliability impact and, if so, PJM will evaluate opportunities for optimization or further reinforcements.

2.5. What amount of "headroom" (and in which location) for entry of new non-wires resources will be created by the 2022 RTEP Window 3 selected projects? Are there transmission upgrade costs previously identified for a resource in PJM's interconnection queue (in a feasibility study, system impact study or interconnection service agreement) which will be duplicative of the costs of the 2022 RTEP Window 3 selected projects? If so, in what amounts and for which points of interconnection?

Response: PJM did not receive any proposals for non-wires solutions as part of the competitive solicitation for 2022 RTEP Window 3. PJM does not calculate part of its RTEP process headroom on the system at a nodal or zonal level. Developers and interested stakeholders can conduct their own analysis

using the PJM RTEP cases. PJM can make available the 2028 RTEP base case suite, following its established data request process.

PJM's transmission and interconnection planning processes work in tandem to define a set of network upgrades that are the least amount necessary in order to keep the system reliable and assigns the costs appropriately.

2.6. What amount of new non-wire resources were assumed to be operating and over what periods in the 2022 RTEP Window 3 analysis? What were the criteria for their inclusion or exclusion?

Response: PJM included generators with signed ISAs in the 2022 RTEP Window 3 cases. PJM did not receive any proposals for non-wire solutions as part of the competitive solicitation for the window. PJM factors into its load forecasts future adoption of behind-the-meter solar as well as actualized Price Responsive Demand values from retail demand response mass market programs operated by Baltimore Gas & Electric and PEPCO. Those values are reflected in PJM's reliability analyses. See [PJM Load Forecast Report \(January 2023\)](#), Table B7 at P48.

2.7. The 2022 RTEP Window 3 selected transmission project components show completion dates out to the end of 2030. How does that comport and match the 2027, 2028 load cases used to model the "need" for the projects? There is a reference to "layering" or creating some measure of incremental capacity to address future load growth? How much additional transfer capacity (or other latent ability to meet reliability violations) in excess of the load cases was incorporated into/exists in the selected projects?

Response: There is a difference between an identified RTEP need date and the date by which the required transmission reinforcements are expected to be in service. As shared by PJM at the Oct. 3 and Oct. 31 TEAC meetings, PJM will continue to work with Transmission Owners to advance the projects' in-service dates to address the immediate and emerging reliability needs as soon as possible. For example, per the Oct. 3 TEAC meeting, the following projects have been accelerated by one year:

- Install New Conastone Capacitor (B3780.10)
- Burches Hill Capacitor (B3780.12)
- Batavia Road to Riverside 230kV reconductor (B3780.13)

In addition, the 2022 RTEP Window 3 advanced the scope of the New Jersey offshore wind State Agreement Approach project, North Delta development, from its original in-service date of 2029 to late 2027 to efficiently address the needs identified in the BGE and PEPCO areas, enhance efficiencies and avoid duplication of transmission assets.

The 2022 RTEP Window 3 recommended transmission solutions will not solve identified needs at 100% of the appropriate facility rating. Recommended solutions will provide additional headroom; however, PJM does not calculate the additional transfer capability associated with such headroom.

2.8. What is the cost allocation for recovery in rates to load serving entities (LSEs) resulting from the selected projects? When will this analysis be done and reported publicly?

Response: PJM applies its FERC-approved cost allocation methodologies as set forth in Tariff, Schedule 12, to all Board-approved projects included in the RTEP. Consistent with its established practice, PJM plans to share the cost allocation results published as part of the related PJM white paper following PJM Board approval of the projects included in the RTEP. The PJM Board is scheduled to consider the RTEP update for approval on Dec. 11, 2023. Consistent with Schedule 12, section (b)(viii), within 30 days of the PJM Board approving the projects to be included in the RTEP, PJM files with FERC revisions to Tariff, Schedule 12-Appendix A (and summary report) that include (for each baseline upgrade ID) the cost responsibility assignments as determined pursuant to Tariff, Schedule 12, cost allocation methodology.

- 2.9. **Page 71 shows capex (“cost”) by the selected project component, project proponent and per an independent review conducted by PJM. There are significant variances in certain cases between the project proponent’s cost and the independent cost. Which selected project segment(s) was/were accompanied by cost control or cost cap commitments by the project proponent(s), if any, and how defined? [Specifically, the NextEra Woodside-Aspen 500 kV line, substation and STATCOM, project 853, p. 71 – project proponent cost – \$632MM vs. PJM “independent cost” of \$1.078B].**

Response: For the Recommended Solution, components proposed by Exelon, PPL, PSEG and NextEra were accompanied by varying cost containment mechanisms. Specifically, the NextEra proposal 853 “502 Junction to Aspen 500 kV” was accompanied by a cost-containment mechanism, applicable only to NextEra’s scope for the project, that limits their return on equity (ROE) for costs exceeding their cost estimate for the project. In addition, the NextEra proposal provided a limited schedule guarantee that reduces the project ROE for delays past the proposed in-service date. The selected proposals by PJM, in combination, are the most cost-effective and efficient solutions compared to all other submitted solution combinations by individual project proponents.

- 2.10. **Is PJM’s load forecast used to plan the 2022 RTEP Window 3 selected projects, consistent with the Virginia State Corporation Commission’s (SCC’s) approved forecasts for load growth within the Dominion service territory, resulting from Dominion’s integrated resource plan (IRP) filings? Please explain any differences, if any, between the two forecasts.**

Response: Yes. The 2022 RTEP Window 3 utilized the [2023 PJM Load Forecast](#) Report.

Dominion filed their 2023 IRP with the VA SCC in May 2023. This filing also used the 2023 PJM Load Forecast.

Second Set of Questions and Comments for the PJM TEAC Meeting, Oct. 31, 2023

Maryland Office of People’s Counsel (OPC)

OPC submits the following second set of questions and comments to the PJM TEAC for consideration and response by PJM. These questions and their anticipated responses are subject to the conditions set forth in the preamble to OPC’s first set of questions previously transmitted on Oct. 30, 2023.

- 1. Do the solutions PJM is recommending from the 2022 RTEP Window 3 procurement address the retirement of the Wagner facility in 2025?**

If not, please respond to the following:

- a) **PJM is required to adhere to certain NERC criteria (e.g., N-1-1, etc.) Has PJM designed beyond these criteria in selecting the proposed projects? If so, explain. Whether it did or didn't, what is the probability range of any of the criteria actually occurring? (1 in XXX)**
- b) **What would be the worst-case consequences if a failure associated with any one of these criteria violations were to occur? Please address in terms of dropped MWs, duration and location.**
- c) **If the plants' owner (of the Wagner and Brandon Shores plants) does not agree to RMR arrangements (for either or both of the plants) and DOE declines a 202(c) order to require the plants to continue to operate, what will PJM do to keep the grid reliable?**

Response: PJM's analysis of the reliability impact of the Wagner units' proposed deactivation is in progress. PJM will provide an update regarding the results of the analysis to stakeholders at a future TEAC stakeholder meeting. The following sub-questions are best addressed after this analysis is complete.

2. **The transmission projects recommended for award from the 2022 RTEP Window 3 procurement will presumably supply generation from across the grid to serve anticipated load growth in specific locations and to address overall grid reliability. How confident is PJM that the supply resources that this transmission is intended to reach will actually be around (not deactivated or derated) in the next five years – especially since generators are only required to give PJM 90-day notice that they will deactivate?**

Response: PJM conducts the PJM RTEP consistent with the PJM Operating Agreement Schedule 6 (Regional Transmission Expansion Planning Protocol) and PJM Manual 14B (PJM Region Transmission Planning Process). PJM utilizes best available data to build PJM RTEP base cases and conducts such analysis as part of an open and transparent TEAC stakeholder process. The 2022 RTEP Window 3 recommended transmission solutions are required to maintain reliability for the state of Maryland and surrounding areas.

3. **Please perform a cost allocation calculation for all PJM zones for this entire project.**

Response: This will be completed and shared by PJM following PJM Board approval of the 2022 RTEP Window 3 recommended projects. Please refer to PJM's response to Question 2.8 above.

4. **The slides indicate that over \$1B of transmission related to this study has been postponed until sufficient generation develops in the area that the proposed transmission would be extended to. Based on load growth projections, when would sufficient generation need to be developed in that area before PJM expects reliability violations to occur? At what reduced level of demand from the data centers would this additional transmission project no longer be needed?**

Response: It is unclear which proposal this question is referring to.

5. **OPC maintains its request for responses to its first set of questions/comments. To assist PJM in preparing the responses regarding the planning in specifically response to the Brandon Shores and Wagner plants' deactivation, OPC prioritizes those questions as follows:**

- 5.1. **What level of reliability violations arise due to sub-groups of the Wagner units retiring? Could certain units retire without triggering a need for grid upgrades?**

Response: Please refer to answers from the first question set.

- 5.2. **What is the timing for the grid upgrades for Wagner? Specifically, if the Wagner related upgrades are projected to take three years or more, wouldn't it be reasonable to examine the need for such upgrades after the Grid Solutions Package (for Brandon Shores) is in place and Brandon Shore has been deactivated. This way, any grid issue that could be addressed or mitigated by the Grid Solutions Package seemingly would not trigger additional (unnecessary) investment. Even in the case that the Wagner related upgrades can be delivered prior to the deactivation of Brandon Shores, a comprehensive analysis should still look into the need for upgrades under both cases:**

a) Assuming Brandon Shores operates

b) Assuming Brandon Shores is deactivated, and the Grid Solutions Package is online

Response: Please refer to answers from the first question set.

- 5.3. **What is the PJM process should Talen refuse to keep either of the plants as RMR?**

Response: PJM will consider all options, including the DOE 202c process.

- 5.4. **Will any grid upgrades associated with the deactivation of Wagner be considered immediate need and what is the basis for this?**

Response: Please refer to answers from the first question set.

- 5.5. **Is PJM examining any alternatives including projects in the interconnection queue (even if they lack ISAs)?**

Response: PJM's planning process considers future generation projects with executed ISAs in its planning model. Generation projects active in the interconnection queue that do not have an executed ISA (pre-ISA resources) have higher commercial development uncertainty and do not hold a contractual obligation to construct required network upgrades identified; therefore, counting on such resources is reasonably foreseeable to put the reliability of the system at risk. Even the generation with executed ISAs are not getting built at a reasonable pace, PJM currently has 40 GW with executed ISAs and only 6 GW reached commercial operation in 2022 and 2023 combined.

