UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.	)	
	)	
Building for the Future Through	)	**Docket No. ER26-751-000**
Electric Regional Transmission	)	
Planning and Cost Allocation	)	

ORDER NOS. 1920, 1920-A, AND 1920-B COMPLIANCE FILING OF PJM INTERCONNECTION, L.L.C. AND REQUEST FOR EXTENSION OF COMMENT PERIOD

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In compliance with Order Nos. 1920, 1920-A, and 1920-B issued by the Federal Energy Regulatory Commission ("Commission" or "FERC"),[1] PJM Interconnection, L.L.C. ("PJM") hereby submits proposed revisions to the Amended and Restated Operating Agreement of PJM ("Operating Agreement")[2] to: (i) incorporate PJM's newly-proposed long-term regional transmission planning process, i.e., the Long-Term Regional Transmission Planning Protocol ("LTRTP Protocol");[3] and (ii) revise PJM's existing regional transmission planning process, i.e., the Regional Transmission Expansion Planning Protocol ("RTEP Protocol"),[4] to address other requirements of the Final Rule.

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[1] *See Building for the Future Through Elec. Reg'l Transmission Planning and Cost Allocation*, Order No. 1920, 187 FERC ¶ 61,068, *order on reh'g and clarification*, Order No. 1920-A, 189 FERC ¶ 61,126 (2024), *order on reh'g and clarification*, Order No. 1920-B, 191 FERC ¶ 61,026 (2025), *appeals pending sub nom.*, *Appalachian Voices, et al. v. FERC*, Case Nos. 24-1650, et al. (4th Cir.). For purposes of this compliance filing, PJM refers to Order No. 1920, as modified by Order Nos. 1920-A and 1920-B, as the "Final Rule."

[2] All capitalized terms that are not otherwise defined herein have the meaning as set forth in the Final Rule, or as defined in the Operating Agreement, the PJM Open Access Transmission Tariff ("Tariff") or Reliability Assurance Agreement among Load Serving Entities in the PJM Region ("Reliability Assurance Agreement"). The Operating Agreement, Tariff, and Reliability Assurance Agreement are collectively referred to in this filing as the "Governing Documents."

[3] *See* proposed Operating Agreement, Schedule 6-C. In this letter, PJM refers to the long-term regional transmission planning process set forth in the proposed LTRTP Protocol as the "LTRTP Protocol process."

[4] *See* proposed Operating Agreement, Schedule 6, sections 1.5.8(c)(1) and 1.5.8(q). PJM's existing, Order No. 1000-compliant, regional transmission planning process set forth in the RTEP Protocol is referred to herein as the "RTEP Protocol process."

The general framework of PJM's approach is supported by the Relevant State Entities of the 14 jurisdictions that comprise the PJM Region, which collectively are the PJM Area Relevant State Entities Committee ("PARSEC").[5]

Given the scope and detail of PJM's compliance filing, PJM respectfully requests that the Commission provide an extended comment period of 40 days and establish a comment deadline of **January 21, 2026**.

In addition, PJM respectfully requests that the Commission set an effective date of 12/31/9998 for the proposed Operating Agreement revisions.[6] Setting a future effective date with notice to the Commission and stakeholders is necessary because PJM and stakeholders will require time to develop the implementation details for the LTRTP Protocol as approved by the Commission. Further, as discussed below in section I.E (The Scope Of This Compliance Filing Is Informed by the Allocation of Filing Rights Between PJM and the PJM Transmission Owners), due to the allocation of filing rights between PJM and the PJM Transmission Owners,[7] PJM will submit those aspects of PJM's LTRTP

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[5] The Final Rule requires transmission providers to afford Relevant State Entities the opportunity to participate in several aspects of long-term regional transmission planning. *See infra* sections I.C.5 (PJM's LTRTP Protocol ensures robust stakeholder engagement), I.D (PJM extensively engaged with Stakeholders in developing this filing), II.B.4 (Consultation with PARSEC and stakeholders to develop Long-Term Scenario assumptions), II.F (Evaluation of proposals, including PARSEC-requested criteria and evaluation of benefits and costs), and V (Stakeholder participation and transparency provisions and compliance with transmission planning principles). The Relevant State Entities in the PJM Region formed the "PJM Area Relevant State Entities Committee," or "PARSEC," which is defined as the voluntary, independent committee consisting of any state entity responsible for electric utility regulation or siting electric transmission facilities within the state or portion of a state located in the PJM Region, including any state entity as may be designated for that purpose by the law of such state. PARSEC was established by the Organization of PJM States, Inc. in 2024, and shall include any succeeding committee.

[6] PJM understands that the PJM Transmission Owners are, contemporaneous with this filing, submitting a filing to revise Tariff, Attachment M-3 and add Tariff, Attachment M-5, in compliance with the Final Rule's requirements related to reforms to local planning, and specifically the requirements to (i) enhance the transparency of the local transmission planning process; and (ii) evaluate whether transmission facilities that need replacing can be "right-sized" to more efficiently or cost-effectively address Long-Term Transmission Needs identified in the LTRTP Protocol.

[7] The PJM Transmission Owners have the exclusive and unilateral right to make Federal Power Act ("FPA") section 205 filings regarding the establishment and recovery of the Transmission Owners' transmission

Protocol that are inextricably intertwined with cost allocation on June 12, 2026, concurrent with the PJM Transmission Owners' submittal of the cost allocation rules for projects selected through the LTRTP Protocol.[8]

While PJM intends to start working with stakeholders in January 2026 to develop PJM Manual language to implement the proposal as submitted, the final implementation timeline will be developed once PJM receives a Commission order on the LTRTP Protocol and PJM evaluates any Commission-directed changes to the proposal.

I. INTRODUCTION AND OVERVIEW

A. Overview of PJM's Proposed LTRTP Protocol Process

PJM is facing potential future reliability challenges due to the energy transition's effects on the PJM Region.[9] First, the growth rate of electricity demand is likely to continue

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revenue requirements and the transmission rate design under the PJM Tariff. *See Pennsylvania-New Jersey-Maryland Interconnection*, 105 FERC ¶ 61,294 (2003) (approving settlement agreement). The settlement provisions were memorialized in Tariff, Part I, sections 9.1(a) ("The Transmission Owners shall have the exclusive and unilateral rights to file pursuant to Section 205 of the Federal Power Act and the FERC's rules and regulations thereunder for any changes in or relating to the establishment and recovery of the Transmission Owners' transmission revenue requirements or the transmission rate design under the PJM Tariff, and such filing rights shall also encompass any provisions of the PJM Tariff governing the recovery of transmission-related costs incurred by the Transmission Owners.") & 9.1(d) ("Transmission Owners' exclusive and unilateral rights to make Section 205 filings" includes "Section 34; Schedule 1A; Schedule 7 (except as to transmission congestion charges under Attachment K to the PJM Tariff or any successor thereto); Schedule 8 (except as to transmission congestion charges under Attachment K to the PJM Tariff or any successor thereto); Schedule 11; Schedule 12; Attachment H-A; Attachment J; and Attachment R."). *See also* Consolidated Transmission Owners Agreement ("CTOA"), Rate Schedule FERC No. 42, sections 7.3.1, 7.3.4 (addressing the same filing rights with almost identical language). These filings rights have also been reiterated by Commission and appellate precedent. *See Atlantic City Elec. Co. v. FERC*, 295 F.3d 1 (D.C. Cir. 2002), *order on remand*, *Pennsylvania–New Jersey–Maryland Interconnection*, 101 FERC ¶ 61,318 (2002), *order granting petition for enforcement and aff'd remand*, *Atlantic City Elec. Co. v. FERC* 329 F.3d 856 (D.C. Cir. 2003) (listing the PJM Tariff provisions that are "within the Transmission Owners' exclusive and unilateral rights to make Section 205 filings"). *See also PJM Interconnection, L.L.C.*, 172 FERC ¶ 61,136 (2020), *reh'g denied*, 173 FERC ¶ 61,225 (2020) (describing the filing rights retained by the PJM Transmission Owners with respect to local planning issues).

[8] *See infra* section I.E (The Scope Of This Compliance Filing Is Informed By The Allocation Of Filing Rights Between PJM and the PJM Transmission Owners).

[9] *See* Susan McGill, *Scenario Analysis Supporting Large Load CIFP Problem Statement*, PJM Interconnection, L.L.C. (Sep. 15, 2025), https://www.pjm.com/-/media/DotCom/committees-groups/cifp-lla/2025/20250915/20250915-item-05---cifp-scenario-analysis---presentation.pdf ("Scenario Analysis").

to increase due to electrification coupled with the proliferation of high-demand data centers in the PJM Region.[10] Second, thermal generators had been retiring at an accelerating pace due to various public policy objectives, private sector policies, and other economic reasons, leading to a depletion of the 24-hour availability of the overall fleet.[11] Third, resource retirements in PJM are at risk of outpacing the construction of new resources, due to a combination of industry forces, including siting and supply chain issues, whose long-term impacts are not fully known.[12] Consistent with the Commission's important findings in the Final Rule, a long-term regional transmission planning process will provide guidance on how these factors interact, including how and when the associated transmission expansion needs materialize, leading to more efficient transmission expansion plans.

Against this backdrop, PJM strongly agrees with the Final Rule's goals to transition transmission planning processes towards a more proactive long-term planning approach that:

- anticipates future changes to the resource mix and demand;
- reflects the impacts of public policies;
- avoids siloed solutions that account for specific drivers; and
- ensures that transmission is built when it provides the greatest overall benefit.

Additionally, PJM strongly supports and, as detailed herein, has embraced the Final Rule's findings that increased collaboration with Relevant State Entities – including during the

[10] *See* PJM Resource Adequacy Planning Department, *PJM Load Forecast Report*, PJM Interconnection, L.L.C., 6 (Jan. 24, 2025), https://www.pjm.com/-/media/DotCom/library/reports-notices/load-forecast/2025-load-report.pdf. In addition to the retirements, PJM's long-term load forecast shows summer peak demand growth of 3.1% per year for the PJM footprint over the next 10 years and winter peak demand growth of 3.8% per year for PJM over the next 10 years.

[11] *See* Scenario Analysis at 12.

[12] *See* Scenario Analysis at 16-18.

development of the assumptions and scenarios that will be used to identify long-term transmission needs and potential transmission solutions – will help identify a set of transmission facilities that will maintain transmission system reliability, provide economic benefits, and advance public policy objectives.[13]

With these challenges and fundamental goals in mind, PJM worked extensively with PARSEC – the Relevant State Entities tasked by the Commission to consult with PJM to develop a long-term planning approach for the PJM Region – as well as other stakeholders, including the PJM Transmission Owners, to develop the process set forth in the proposed LTRTP Protocol.[14] As a result of these engagements, PJM has developed a proposed long-term planning process which achieves the goals described above and meets or exceeds the requirements of the Final Rule.[15] And, importantly, the general framework of PJM's proposal is supported by PARSEC.[16] Specifically, as described below, PJM has developed, with the support of PARSEC, a proposed LTRTP Protocol process that allows PJM to holistically plan for Long-Term Transmission Needs, while taking into

[13] PJM appreciates the Commission's recognition that existing Order No. 1000 regional transmission planning processes, in coordination with long-term regional transmission planning, are needed to support the reliable operation of the transmission system. As required by the Final Rule, PJM discusses the interrelationship between the proposed LTRTP Protocol and RTEP Protocol processes *infra* section I.C (Relationship Between the Proposed LTRTP Protocol and Existing PJM RTEP Protocol).

[14] *See infra* sections I.B (The Basic Framework of PJM's Proposed Approach to Developing the Long-Term Regional Transmission Plan Reflects a Careful Balance Among PJM's 14 Jurisdictions and Has Been Supported by PARSEC), I.E (The Scope of This Compliance Filing Is Informed by the Allocation of Filing Rights Between PJM and the PJM Transmission Owners).

[15] As described herein, PJM believes that its proposed LTRTP Protocol is compliant with the Final Rule; to the extent that the Commission determines any aspect of this compliance filing deviates from the requirements of the Final Rule, PJM respectfully requests that the Commission find that those elements of PJM's proposed LTRTP Protocol are "consistent with or superior" to the Final Rule's requirements for the reasons set forth herein. *See, e.g.*, *infra* sections II.C.2 (Identifying Long-Term Transmission Needs), II.F.2 (Evaluation of costs and benefits), and II.G.6 (Timing of project selection).

[16] *See infra* section II.B (The Basic Framework of PJM's Proposed Approach to Developing the Long-Term Regional Transmission Plan Reflects a Careful Balance Among PJM's 14 Jurisdictions and Has Been Supported by PARSEC) (describing PJM's engagement with PARSEC in developing this compliance filing and PARSEC's support of the proposed LTRTP Protocol process).

consideration that PJM is responsible for reliably planning the transmission system while balancing the diverse policy objectives of its 14 jurisdictions.

Further supporting the Final Rule's objectives regarding coordinated and efficient regional transmission planning, PJM is also proposing revisions to both (i) better coordinate regional transmission planning processes with PJM's interconnection process[17] and (ii) require transmission developers to affirmatively demonstrate that they have considered alternative transmission technologies when proposing solutions to address identified transmission needs.[18] In compliance with the Final Rule, these proposed revisions are designed to ensure that PJM will avoid both upgrading the transmission system in a piecemeal fashion and unnecessary deferral of cost-effective upgrades.

1. High level summary of PJM's proposed LTRTP Protocol process

As explained below, PJM's proposed LTRTP Protocol process complies with the requirements of the Final Rule, in that PJM will be required to:

- conduct the LTRTP Protocol process in an open and transparent manner, with more than a dozen points during the LTRTP Protocol process at which PJM will post data, solicit information, or otherwise engage with PARSEC and stakeholders in conducting the LTRTP Protocol;[19]

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[17] *See infra* section III (Coordination of the LTRTP Protocol Process with the RTEP Protocol and Interconnection Processes).

[18] *See infra* section II.E.3 (Consideration of alternative transmission technologies).

[19] *See, e.g.*, *infra* sections II.B.2 (PJM will use best available data inputs, including data gathered in conjunction with PARSEC and other stakeholders regarding the Final Rule's Factor Categories) and II.F. (Evaluation of Proposals, Including PARSEC-Requested Criteria and Evaluation of Benefits and Costs).

- develop the Long-Term Regional Transmission Plan using a five-year planning cycle[20] and based on a 20-year planning horizon;[21]

- develop at least three plausible and diverse Long-Term Scenarios,[22] each of which will be based on the best available data inputs, and which must account for factors within each of the seven Final Rule-defined Factor Categories.[23] PJM will determine, in collaboration with PARSEC and other stakeholders, those factors that are likely to affect Long-Term Transmission Needs,[24] without discounting factors in the first three categories (related to public policies, state-approved IRPs, and expected LSE supply obligations);[25]

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[20] As used in this compliance filing, a Long-Term Regional Transmission Plan cycle refers to the five-year period during which PJM will conduct its proposed Long-Term Protocol process, from the commencement of the process, as defined in proposed Operating Agreement, Schedule 6-C, section 1.4.1 through the approval of the recommended Long-Term Regional Transmission Plan by the PJM Board in proposed Operating Agreement, Schedule 6-C, section 1.17. *See infra* section I.C.1 (High level overview of the development of the Regional Transmission Expansion Plan to address nearer-term and Long-Term Transmission Needs); proposed Operating Agreement, Schedule 6-C, section 1.6.

[21] *See infra* section I.C.1 (High level overview of the development of Regional Transmission Expansion Plan to address nearer-term and Long-Term Transmission Needs); proposed Operating Agreement, Schedule 6-C, section 1.6.

[22] *See infra* section II.B.4 (Developing Long-Term Scenarios); proposed Operating Agreement, Schedule 6-C, section 1.5(a). As discussed further below, PJM intends to employ industry best practices to develop the Long-Term Scenarios, including using a capacity expansion modeling process to develop a projection of the future, longer-term, resource mix resulting from the identified scenario assumptions. The purpose of the capacity expansion modeling process is to identify a least-cost projected mix of generation resources, taking into account influencing factors such as cost, availability of fuel resources, enabling infrastructure, economics and public policy mandates or laws to meet future electricity demand.

[23] The seven specific Factor Categories of factors that PJM will consider include: (1) Federal, federally-recognized Tribal, state and local laws affecting the resource mix and demand; (2) Federal, federally-recognized Tribal, state and local laws on decarbonization and electrification; (3) state-approved integrated resource plans ("IRPs") and expected supply obligations for load-serving entities ("LSEs"); (4) trends in fuel costs and in the cost, performance and availability of generation, electric storage resources, and building and transportation electrification technologies; (5) resource retirements; (6) generator interconnection requests and withdrawals; and (7) utility and corporate commitments and Federal, federally-recognized Tribal, state and local policy goals that affect Long-Term Needs. *See* Order No. 1920 at P 409. *See also infra* section II.B.2.a (The Final Rule's requirements regarding "best available data inputs"); proposed Operating Agreement, Schedule 6-C, section 1.4.2.

[24] *See infra* section II.B.2.b (PJM's Long-Term Scenarios will be based on "best available data inputs"); proposed Operating Agreement, Schedule 6-C, section 1.4.2.

[25] *See infra* section II.B.4 (Developing Long-Term Scenarios); proposed Operating Agreement, Schedule 6-C, section 1.4.2(a), 1.5(a).

- apply a sensitivity to each of the required Long-Term Scenarios to ensure that the Long-Term Regional Transmission Plan[26] accounts for extreme weather-related events;[27]

- identify, based on the Long-Term Scenarios, a comprehensive set of Long-Term Transmission Needs across the PJM Region, inclusive of reliability, public policy, market efficiency, generation deactivations, and interconnection-related drivers;[28]

- conduct competitive solicitation windows using PJM's Order No. 1000-compliant sponsorship model[29] to identify Long-Term Transmission Needs in a manner that is very similar to the way PJM conducts competitive solicitation windows pursuant to its current RTEP Protocol process;[30]

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[26] The Long-Term Regional Transmission Plan is the "regional transmission plan developed on a sufficiently long-term, forward-looking, and comprehensive basis that identifies Long-Term Transmission Needs, identifies Long-Term Transmission Projects that meet such needs, measures the benefits of those Transmission Facilities, and evaluates those Transmission Facilities for potential selection in the regional transmission plan for purposes of cost allocation as the more efficient or cost-effective regional Transmission Facilities to meet Long-Term Transmission Needs with consideration of benefits to consumers relative to costs without over-building." Proposed Operating Agreement, Definitions I-L.

[27] *See infra* section II.B.4 (Developing Long-Term Scenarios); proposed Operating Agreement, Schedule 6-C, section 1.6(b).

[28] *See infra* section II.C.2. (Identifying Long-Term Transmission Needs); proposed Operating Agreement, Schedule 6-C, section 1.6(b).

[29] Order No. 1000 describes a sponsorship model as a mechanism that "allow[s] the sponsor of a transmission project selected in the regional transmission plan for purposes of cost allocation to use the regional cost allocation method associated with the transmission project." However, the Commission also explained that if the sponsorship model is used, "the regional transmission planning process would also need to have a fair and not unduly discriminatory mechanism to grant to an incumbent transmission provider or nonincumbent transmission developer the right to use the regional cost allocation method for unsponsored transmission facilities selected in the regional plan for purposes of cost allocation." Order No. 1000 at P 336. The Commission accepted PJM's sponsorship model. *See PJM Interconnection, L.L.C.*, 142 FERC ¶ 61,214, at PP 193, 243-45 (2013) ("First Order No. 1000 Compliance Order"), *order on reh'g and compliance*, 147 FERC ¶ 61,128, at P 146 (2014) ("Second Order No. 1000 Compliance Order"); *order on reh'g and compliance*, 150 FERC ¶ 61,038, *order on reh'g and compliance*, 151 FERC ¶ 61,250 (2015) (accepting section 1.5.8 of Schedule 6, which contains a sponsorship model). *See also* Second Order No. 1000 Compliance Order, 147 FERC ¶ 61,128, at P 162 (denying rehearing of the Commission's conclusion that PJM's sponsorship model procedures for determining whether a project is "unsponsored" complies with Order No. 1000 because "Order No. 1000 does not prohibit PJM from designating the incumbent transmission owner to develop a transmission project" that PJM proposes where "none of the proposed solutions is the more efficient or cost-effective solution")); *N.Y. Indep. Sys. Operator, Inc.*, 178 FERC ¶ 61,179, at P 14 n.36 (2022) ("PJM and NYISO both have a sponsorship model in their Order No. 1000 processes."); *NextEra Energy Transmission MidAtlantic, LLC*, 161 FERC ¶ 61,141, at P 3 nn.12 & 13 (2017) ("The Commission noted that, although not mandatory, public utility transmission providers in a transmission planning region could use, for example, a sponsorship model as one method to comply with the requirements of Order No. 1000. In response to the requirements of Order No. 1000, PJM established Order No. 1000 transmission planning processes.").

[30] *See infra* section II.E (Consistent with its Current Order No. 1000-Compliant Regional Transmission Planning Process, PJM Will Administer a Competitive Solicitation for Project Proposals and Will Require That Proposals Demonstrate Consideration of Alternative Transmission Technologies); proposed Operating

- mandate that all developers proposing transmission solutions in competitive windows (in both the LTRTP Protocol and RTEP Protocol processes) affirmatively demonstrate that they have considered each of the four alternative transmission technologies[31] identified in the Final Rule;[32]

- evaluate regional transmission facilities to address interconnection-related transmission needs;[33]

- work with individual PJM Transmission Owners to consider whether replacement transmission facilities could be right-sized to more efficiently or cost-effectively address Long-Term Transmission Needs;[34]

- apply evaluation criteria to assess proposed transmission solutions, including the measurement and quantification of at least the seven benefits required by the Final Rule;[35]

- identify and develop a holistic plan, referred to as the "All-in-One Plan" (summarized further in this Overview section and described in more detail below), of Long-Term Transmission Projects from proposed solutions submitted through the competitive window to holistically meet the Region's Long-Term Transmission

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Agreement, Schedule 6-C, section 1.8(c); Operating Agreement, Schedule 6, section 1.5.8(c) (RTEP proposal window rules).

[31] *See* Order No. 1920 at P 1198 (listing four required alternative transmission technologies for consideration). *See also infra* section II.E.3 (Consideration of alternative transmission technologies); proposed Operating Agreement, Schedule 6-C, section 1.8(c)(2) ("[E]ach proposal must detail how the project sponsor considered the following alternative transmission technologies in addressing the Long-Term Transmission Need(s) to be addressed by the proposal: (i) dynamic line ratings; (ii) advanced power flow control devices; (iii) advanced conductors; and (iv) transmission switching.").

[32] *See infra* section II.E.3 (Consideration of alternative transmission technologies); proposed Operating Agreement, Schedule 6-C, section 1.8(c)(2).

[33] *See infra* section III (Coordination of the LTRTP Protocol Process with RTEP Protocol and Interconnection Processes); proposed Operating Agreement, Schedule 6-C, section 1.6.1.

[34] *See infra* section II.D (PJM Will Evaluate Whether Certain In-Kind Replacement Facilities Can Be 'Right-Sized' to More Efficiently or Cost-Effectively Address a Long-Term Transmission Need); proposed Operating Agreement, Schedule 6-C, section 1.7. As described further below, for any need that PJM determines can be addressed through a right-sized replacement facility, PJM will post such need for informational purposes in the competitive window. Although the need is posted for informational purposes, it may still be addressed through competitive solutions that address that need plus at least one other posted need if PJM determines that the competitive alternative is the more efficient or cost-effective solution to address both needs holistically. Right-sized solutions will be evaluated using the same criteria as any proposal submitted through the window.

[35] *Infra* section II.G.2 (PJM will develop a Core Plan to provide the costs of the needed transmission reinforcements and their drivers); proposed Operating Agreement, Schedule 6-C, section 1.9.

Needs – Core LT Needs[36] and Additional LT Needs[37] combined – so as to maximize benefits to customers relative to costs, without over-building;[38]

- evaluate all projects included in the All-in-One Plan to determine those projects for which selection would be "timely and appropriate,"[39] meaning that PJM will "consider each Long-Term Transmission Project's development and implementation timeline, with particular consideration of whether such timeline must commence prior to the completion of the next Long-Term Regional Transmission Plan cycle," and will preliminarily select certain transmission projects;[40]

- account for the interaction between the nearer-term RTEP Protocol process and the needs and solutions identified through the proposed LTRTP Protocol process. PJM will account for the longer-term identified needs and solutions and scope the needed nearer-term solutions to enhance efficiencies and avoid redundant facilities where applicable;[41]

- give states and third parties the opportunity to voluntarily fund any proposal submitted through the window that was *not* preliminarily selected or for states to "opt-out" of cost allocation for a selected Long-Term Transmission Project, based on a mechanism that is still to be developed;[42]

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[36] Core LT Needs are the "Long-Term Transmission Needs identified by the Office of the Interconnection in accordance with Operating Agreement, Schedule 6-C, section 1.6.2(a)." Proposed Operating Agreement, Definitions C-D.

[37] Additional LT Needs are "the Long-Term Transmission Needs identified by the Office of the Interconnection in accordance with Operating Agreement, Schedule 6-C, section 1.6.2(b)." Proposed Operating Agreement, Definitions A-B.

[38] *See infra* section II.G.3 (Development of the All-in-One Plan); proposed Operating Agreement, Schedule 6-C, section 1.11.

[39] *Infra* section II.G.4 (Posting and review of the Core Plan and the All-in-One Plan); proposed Operating Agreement, Schedule 6-C, section 1.12.

[40] Proposed Operating Agreement, Schedule 6-C, section 1.12(b). *See also* Attachment D, Declaration of Dr. Sami Abdulsalam on Behalf of PJM Interconnection, L.L.C. ("Abdulsalam Declaration"). Dr. Abdulsalam, PJM's Director of Transmission Planning, explains that PJM will make such preliminary selections within three years of commencing the Long-Term Regional Transmission Plan cycle. *See* Abdulsalam Declaration at ¶¶ 9, 14.

[41] *See infra* section II.G.5 (Selection of projects that are timely and appropriate); proposed Operating Agreement, Schedule 6-C, sections 1.9, 1.10(c).

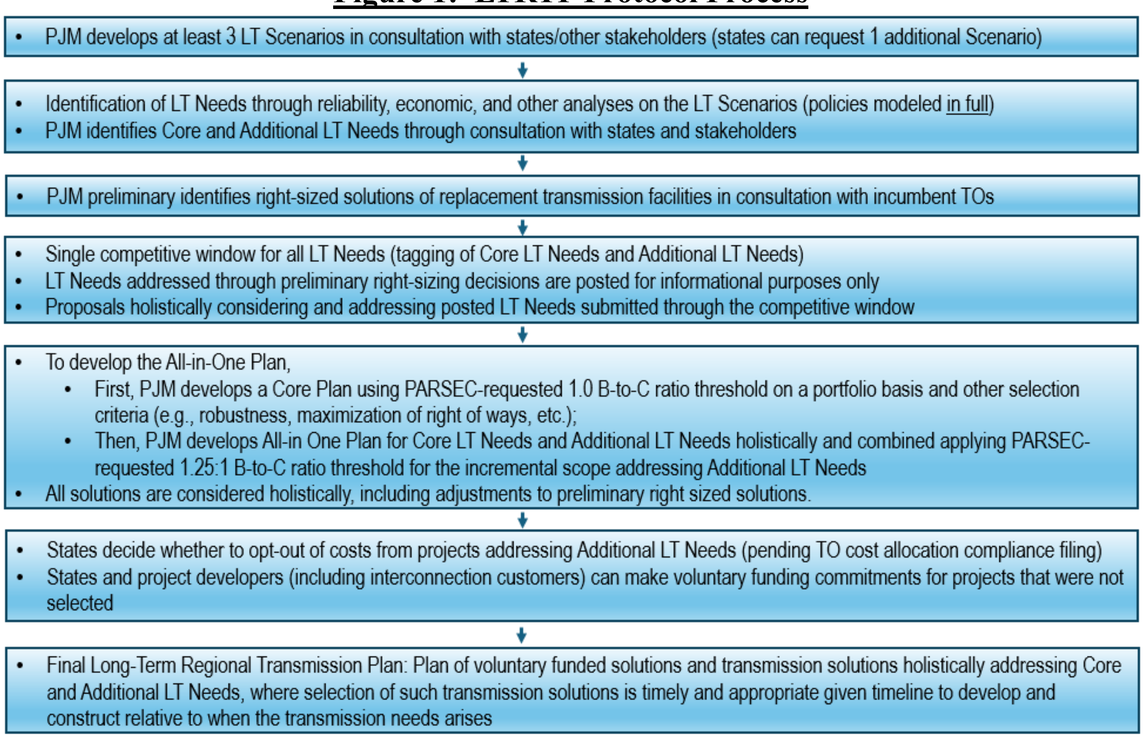
[42] While the specific voluntary funding rules will be developed alongside the PJM Transmission Owners' general cost allocation rules (*see infra* section I.B (The Basic Framework of PJM's Proposed Approach to Developing the Long-Term Regional Transmission Plan Reflects a Careful Balance Among PJM's 14 Jurisdictions and Has Been Supported by PARSEC)), PJM understands that a state will be able to "sponsor" specific developments enabling their policies either individually or in a combined form, without any consideration of a specified benefit-to-cost threshold. Further, as part of the careful balance struck and a condition of PARSEC's support, PJM will provide an opportunity for states to "opt-out" of cost allocation for a selected Long-Term Transmission Project, based on a mechanism that is still to be developed. Additionally, for the reasons described more fully *infra* section II.G.7 (State opt-out mechanism and

- finalize the All-in-One Plan and select projects for inclusion in the recommended Long-Term Regional Transmission Plan, which will be referred to the PJM Board of Managers ("PJM Board") for its review and approval;[43] and

- integrate the Long-Term Transmission Projects in each approved update to the Long-Term Regional Transmission Plan into the Regional Transmission Expansion Plan.[44]

One cycle of PJM's proposed LTRTP Protocol process is illustrated in **Figure 1**, below.

Figure 1: LTRTP Protocol Process



PJM discusses each step described above, as well as additional elements of its LTRTP Protocol process proposed to comply with the Final Rule, more fully in section II (Proposed LTRTP Protocol) of this filing.

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voluntary funding opportunities), PJM will work stakeholders to develop a State Opt-Out mechanism, which will be the subject of a future PJM compliance filing.

[43] *Infra* section II.G.8 (Establishment of Long-Term Regional Transmission Plan); proposed Operating Agreement, Schedule 6-C, sections 1.16, 1.17.

[44] *Infra* section II.G.8 (Establishment of Long-Term Regional Transmission Plan); proposed Operating Agreement, Schedule 6-C, section 1.17.

2. PJM's proposed LTRTP Protocol process will comprehensively and holistically address the Long-Term Transmission Needs of the PJM Region.

PJM emphasizes that it designed the proposed LTRTP Protocol process by taking into consideration the fact that there are 14 jurisdictions within the PJM Region that have diverse public policy goals, requirements, and transmission needs. To that end, the goal of the LTRTP Protocol process is the development of the above-mentioned "All-in-One Plan,"[45] which will allow PJM to develop a holistic plan that includes the more efficient or cost-effective transmission solutions. The development of the All-In-One plan will be informed through the development of an interim, "Core Plan" that serves as a benchmark to inform states and other stakeholders of incremental needs beyond those core needs to maintain system reliability while enabling public policy, furthering economic efficiency, and accounting for benefits, costs and benefit-to-cost ratio threshold evaluations as well as associated selection criteria as requested by PARSEC.

To develop the All-in-One Plan, PJM will first develop a Core Plan of Long-Term Transmission Projects from proposed solutions submitted through the competitive window addressing Core LT Needs to assist with project selection and inform on the costs and scope of projects associated with addressing Additional LT Needs. The Core LT Needs are those needs required to meet PJM system reliability taking into account load and generation forecasts, including capacity expansion requirements to meet applicable resource adequacy criteria, for example, the one-in-10 loss-of-load expectation reliability performance metric.

[45] All-in-One Plan means "a set of Long-Term Transmission Projects addressing Core LT Needs and Additional LT Needs holistically, as determined in accordance with Operating Agreement, Schedule 6-C, section 1.11." Proposed Operating Agreement, Definitions A-B.

The Core Plan will account for reliability, economic and public policy drivers that enable reliability to such threshold.

PJM will consequently identify projects for inclusion in its intermediate Core Plan based on evaluation criteria set forth in the proposed LTRTP Protocol, including the measurement and quantification of the seven benefits required by the Final Rule.[46] The Core Plan will be composed of projects addressing Core LT Needs that—measured as a portfolio—must meet a PARSEC-requested benefit-to-cost ratio threshold of 1:1.[47] PARSEC requested that PJM apply such benefit-to-cost ratio selection criteria, to be measured on a portfolio basis, and this element is part of the careful balance struck by PJM's proposed LTRTP Protocol.

PJM will then build the All-in-One Plan of Long-Term Transmission Projects from proposed solutions submitted through the competitive window to holistically meet the region's needs, simultaneously combining Core LT Needs and Additional LT Needs, so as to maximize benefits and efficiencies relative to costs, without over-building. The All-in-One Plan is informed by the Core Plan and must continue to address at least those same Core LT Needs but also holistically address the Additional LT Needs subject to the application of a PARSEC-requested benefit-to-cost ratio threshold of 1.25:1 for the incremental scope of projects addressing Additional LT Needs.[48] Thus, in contrast to the

[46] *Infra* section II.G.2 (PJM will develop an intermediate-step Core Plan to provide the costs of the needed transmission reinforcements, their benefits, and drivers); proposed Operating Agreement, Schedule 6-C, section 1.9.

[47] *Infra* section II.G.2 (PJM will develop an intermediate-step Core Plan to provide the costs of the needed transmission reinforcements, their benefits, and drivers); proposed Operating Agreement, Schedule 6-C, section 1.10.

[48] *Infra* section II.G.3. (Development of the All-in-One-Plan); proposed Operating Agreement, Schedule 6-C, section 1.11.

development of the Core Plan and at PARSEC's request, PJM will apply a higher benefit-to-cost ratio threshold for this incremental scope projects addressing Additional LT Needs in the All-in-One Plan and apply such threshold on a project-by-project basis. That is, each project, incremental portion of a larger project, or cluster or inter-related proposals that collectively addresses one or more Additional LT Need (possibly in addition to a Core LT Need), must satisfy this individualistic benefit-to-cost threshold.[49] To develop the All-in-One Plan, PJM will seek opportunities for optimizing the All-In-One plan that meets the Core and Additional LT Needs holistically.

Through the development of both the Core Plan and the All-in-One Plan, states and stakeholders will be aware of the cost and scope of the transmission expansions and enhancements associated with addressing Core and Additional LT Needs, including the incremental costs and benefits associated with either modifying a project addressing a Core LT Need or replacing such project with a more efficient project(s) that holistically address the Additional LT Need simultaneously with Core LT Needs. PJM understands from its engagement with the states that they want to be able to distinguish those transmission projects associated with addressing Additional LT Needs from those addressing Core LT Needs, and further want to understand how projects addressing Core LT Needs may be modified to optimize the All-in-One Plan while also addressing Additional LT Needs.

Upon the development of the All-in-One Plan, PJM will evaluate all projects included in the plan to determine those projects for which selection would be "timely and

[49] To the extent no proposed project meets the 1.25:1 threshold, the All-in-One Plan, at this stage, will be the same as the Core Plan.

appropriate."[50] This means that PJM will "consider each Long-Term Transmission Project's development and implementation timeline, with particular consideration of whether such timeline must commence prior to the completion of the next Long-Term Regional Transmission Plan cycle," and will preliminarily select those projects that must be started at this time.[51] When making these selections, PJM will look at the evolution of the Long-term Transmission Needs throughout the entire 20-year planning horizon to avoid over-building or building transmission facilities too soon. As Dr. Abdulsalam explains, PJM will make such preliminary selections within three years of commencing the Long-Term Regional Transmission Plan cycle.[52]

The selections are "preliminary" at this stage because, while PJM has generally completed its long-term transmission planning processes, states and third parties will then be afforded the opportunity to voluntarily fund any proposal submitted through the window that was *not* preliminarily selected.[53] While the specific voluntary funding rules will be developed alongside the general cost allocation rules, PJM understands that a state will be able to "sponsor" specific developments enabling their policies either individually or in a combined form, without any consideration of a specified benefit-to-cost threshold. Further, as part of the careful balance struck and a condition of PARSEC's support, PJM will

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[50] *Infra* section II.G.4 (Posting and review of the Core Plan and the All-in-One Plan); proposed Operating Agreement, Schedule 6-C, section 1.12.

[51] Proposed Operating Agreement, Schedule 6-C, section 1.12(b).

[52] *Infra* section II.G.6 (Timing of project selection); proposed Operating Agreement, Schedule 6-C, section 1.12; Abdulsalam Declaration ¶¶ 8-9, 14, 61-63.

[53] PJM's voluntary funding proposal cannot be finalized until the PJM Transmission Owners finalize their proposed cost allocation methodology(ies) applicable to Long-Term Transmission Projects. Additionally, for the reasons described more fully *infra* section II.G.7 (State opt-out mechanism and voluntary funding opportunities), PJM will work stakeholders to develop a state opt-out mechanism, which will be the subject of a future PJM compliance filing.

provide an opportunity for states to "opt-out" of cost allocation for a preliminarily selected Long-Term Transmission Project addressing an Additional LT Need, based on a mechanism that is still being developed as part of the process to develop the PJM Transmission Owners' cost allocation-related compliance filing.[54]

Because transmission projects interact with one another and the addition or removal of a project may necessitate modification to other aspects of the Long-Term Regional Transmission Plan, PJM must know the outcomes of these two processes before PJM can finalize the All-in-One Plan and select projects for inclusion in the recommended Long-Term Regional Transmission Plan that the PJM Board will review and approve.[55] This optionality in the process was deemed both critical and helpful for PJM as a multi-state organization where states can have varying policy priorities that yet need to be met through a holistic and efficient regional transmission planning process.

PARSEC supports PJM's development of a Core Plan as a precursor to the development of the All-in-One Plan, and requested that PJM utilize different benefit-to-cost ratio thresholds for addressing Core and Additional LT Needs within PJM's proposed LTRTP Protocol process. The Core Plan is intended to help ensure that the proposed process identifies a portfolio of projects that maximizes consumer benefits, gives states the tools and information they need to support projects that optimize solutions to a broader set of needs, while also allowing PJM to more efficiently or cost-effectively solve important long-term reliability needs.

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[54] *Infra* section II.G.7. (State opt-out mechanism and voluntary funding opportunities); proposed Operating Agreement, Schedule 6-C, section 1.13.

[55] *Infra* section II.G.8 (Establishment of Long-Term Regional Transmission Plan); proposed Operating Agreement, Schedule 6-C, section 1.16.

3. *PJM's proposed LTRTP Protocol process relies on extensive engagement with states to identify Long-Term Transmission Needs and Long-Term Transmission Projects.*

In recognition of the facts that states have the authority to make resource choices, approve siting of transmission facilities, and implement public policies – in addition to bearing rate impacts associated with building out the transmission system – in Order No. 1920-A, the Commission significantly expanded the role of states with respect to both long-term regional transmission planning and cost allocation processes.[56] Specifically, and as relevant to this filing, transmission providers are required to consider the input of Relevant State Entities about how to account for the impact of state public policies on transmission needs, and to provide greater transparency into the benefits derived by each state within the region from a given transmission facility.[57]

Consistent with these Commission findings, another critical component of PJM's proposed LTRTP Protocol process is thorough engagement with PARSEC throughout all stages of a Long-Term Regional Transmission Plan cycle.[58] Specifically, in section V (Stakeholder Participation and Transparency Provisions and Compliance with Transmission Planning Principles), below, PJM describes how the LTRTP Protocol process requires PJM to engage with PARSEC throughout the development of the Long-Term Regional Transmission Plan. While not an exhaustive list, the LTRTP Protocol specifies

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[56] *See* Order No. 1920-A at PP 452-460, 635-662.

[57] *See* Order 1920-A at PP 162, 193.

[58] Consistent with the requirements of the Final Rule and PJM's current RTEP Protocol process, the proposed LTRTP Protocol process also recognizes the importance of engaging with all PJM stakeholders in the development of the Long-Term Regional Transmission Plan. PJM describes the open and transparent ways it proposes to engage with stakeholders. *Infra* section II.B.2 (PJM will use best available data inputs, including data gathered in conjunction with PARSEC and other stakeholders regarding the Final Rule's Factor Categories) and II.F. (Evaluation of Proposals, Including PARSEC-Requested Criteria and Evaluation of Benefits and Costs).

that PJM will hold periodic meetings with PARSEC to provide updates on the development of the Long-Term Regional Transmission Plan and, at a minimum, discuss:

- the state public policies and other assumptions to be used in developing Long-Term Scenarios, in compliance with the Final Rule's directive to consult states in the scenario development process;[59]

- the state public policies, including legislative and regulatory initiatives, to consider including in planning analyses, in compliance with the Final Rule's directive to consult states about the policies that will impact the scenario analyses;[60]

- the impacts of state regulatory actions, projected changes in load growth, demand response resources, energy efficiency programs, generating capacity, market efficiency and other trends in the industry, under the Final Rule directive described in (ii), above;[61]

- alternative sensitivity studies, modeling assumptions, and scenario analyses proposed by PARSEC, in compliance with the Final Rule's directive to consider additional scenarios proposed by states;[62]

- the classification of needs as either Core LT Needs or Additional LT Needs;[63] and

- the All-in-One Plan and the intermediate step Core Plan as discussed in section II.G (Development of Plans to Address PJM Region's Long-Term Transmission Needs in a Holistic Manner), and voluntary funding opportunities, in compliance with the Final Rule's directive to consult states about selection criteria and voluntary funding.[64]

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[59] Order No. 1920 at PP 528-532; Order No. 1920-A at PP 193, 241-242. *See also* Order No. 1920-A at P 275. For example, as needed to inform long-term planning assumptions, PJM will discuss with the states that have integrated resource planning processes with more than one resource portfolio, their preferred portfolio, including both the supply and demand side resource trajectory as appropriate, in each Long-Term Scenario, or include different state-preferred resource portfolios in different Long-Term Scenarios." Order No. 1920-A at P 275. The details implementing this requirement will be set forth in the PJM Manuals.

[60] Order No. 1920 at PP 528-532; Order No. 1920-A at PP 193, 241-242. *See also id.* at P 275.

[61] Order No. 1920 at PP 528-532; Order No. 1920-A at PP 193, 241-242.

[62] Order No. 1920-A at PP 14, 17.

[63] *See* Order No. 1920 at PP 39, 299 (defining Long-Term Transmission Needs as "transmission needs identified through Long-Term Regional Transmission Planning by, among other things . . . , running scenarios and considering the enumerated categories of factors.").

[64] Order No. 1920 at PP 994-1002 (state consultation about selection criteria), PP 1012-1013 (voluntary funding requirements); Order No. 1920-A at 462.

In short, the states in the PJM Region will have the opportunity to be informed about and provide input into identifying relevant Long-Term Transmission Needs and the appropriate Long-Term Transmission Projects to address those needs. PJM views these state engagement opportunities set forth in the proposed LTRTP Protocol process as an important element of ensuring that the Long-Term Regional Transmission Plan will include transmission enhancements or expansions necessary to maintain transmission system reliability, provide economic benefits, achieve public policy objectives, and meet rising demand at reasonable costs, as well as having enhanced and streamlined siting and permitting application processes.

B. The Basic Framework of PJM's Proposed Approach to Developing the Long-Term Regional Transmission Plan Reflects a Careful Balance Among PJM's 14 Jurisdictions and Has Been Supported by PARSEC

To develop a long-term regional transmission planning process compliant with the Final Rule's directives and requirements, and to ensure the process addresses the needs of PJM's multi-state region, PJM engaged extensively with PARSEC and other stakeholders.[65] To develop its proposal, PJM formally met with PARSEC on 19 separate occasions, beginning in September 2024. PJM also met with the Organization of PJM States, Inc. to discuss PJM's engagement with the Relevant State Entities prior to PARSEC's formation.[66] PJM's meetings with PARSEC served to outline PJM's proposal, obtain state feedback, and address opportunities to account for incongruent and, in some

[65] *See supra* n.5 ("PJM Area Relevant State Entities Committee" or "PARSEC" shall mean "the voluntary, independent committee consisting of any state entity responsible for electric utility regulation or siting electric transmission facilities within the state or portion of a state located in the PJM Region, including any state entity as may be designated for that purpose by the law of such state. The term PJM Area Relevant State Entities Committee shall mean the committee established through the Organization of PJM States, Inc. in 2024 or any succeeding committee.").

[66] To date, PJM also has met with PARSEC and the PJM Transmission Owners jointly on 12 occasions.

cases, opposing state interests. To support the states' understanding of PARSEC's role in developing a Long-Term Regional Transmission Plan, PJM also prepared a Whitepaper[67] outlining much of the proposal in detail and subsequently met with PARSEC to address further questions and incorporate feedback on the Whitepaper into the proposal. As such, PJM has more than satisfied the Final Rule requirement to demonstrate a "good faith effort" was made to consult with the region's Relevant State Entities.[68]

The enclosed LTRTP Protocol is the result of that outreach. Through extensive review and discussion with PARSEC, PJM arrived at a workable proposal that carefully balances the interests of the 14 diverse and independent jurisdictions in PJM. In fact, PARSEC supports the proposal's general framework, and the proposal includes several elements specifically requested by PARSEC, including specific benefit-to-cost ratios set forth in the LTRTP Protocol for use as selection criteria and a mechanism to allow states to opt out of cost allocation for projects addressing a certain type of transmission needs. The result is a singular LTRTP Protocol to holistically address the PJM Region's transmission needs.

In particular, PARSEC supports:

- Offering robust PARSEC engagement at almost every stage of the process, including multiple opportunities for states to weigh in on how their laws, regulations, and policies should be interpreted and applied in developing the Long-Term Scenarios;

[67] *See supra* n.20. PJM Interconnection, L.L.C., *PJM's Order 1920 Compliance Approach for Long-Term Regional Transmission Planning (Order 1920 – Section III)* (Sep. 5, 2025), https://www.pjm.com/-/media/DotCom/committees-groups/committees/teac/2025/20250905-special/pjm-whitepaper-on-order-1920-compliance-approach.pdf ("September 2025 Whitepaper"). The September 2025 Whitepaper focused on "Section III"—Long-Term Regional Transmission Planning of Order No. 1920's compliance requirements, which include the development of Long-Term Scenarios, analysis of Long-Term Scenarios to identify long-term transmission needs; movement of identified needs into a competitive window and the evaluation and selection of projects addressing Long-Term Transmission Needs. *Id*. at 1.

[68] Order No. 1920 at P 995; Order No. 1920-A at P 452.

- Distinguishing, for purposes of project selection, the identified Long-Term Transmission Needs as either "Core LT Needs" or "Additional LT Needs" and applying different PARSEC-requested benefit-to-cost thresholds for selecting solutions to meet each type of need;

- Developing a holistic "All-in-One Plan" of projects that ensures selected Long-Term Transmission Projects provide benefits to consumers equal or greater than their cost, by:

    - First, developing a Core Plan for use in developing the All-in-One Plan, solely addressing Core LT Needs that as a portfolio satisfies a PARSEC-requested 1:1 benefit-to-cost ratio, and

    - Second, using that Core Plan to inform the development of the All-in-One Plan, which holistically addresses Core LT Needs and those Additional LT Needs with solutions that satisfy a PARSEC-requested incremental 1.25:1 benefit-to-cost ratio;

- Offering states the opportunity to "opt out" of cost allocation for the solutions in the All-in-One Plan addressing Additional LT Needs;

- Offering states and others the opportunity to voluntarily fund projects not selected through the All-in-One Plan; and

- Optimizing the All-in-One Plan for review and approval by the PJM Board to account for the outcome of the state opt-out and voluntary funding opportunity decisions.

In addition to direct engagement with PARSEC, at the request of PARSEC and the PJM Transmission Owners, PJM participated in numerous meetings in furtherance of the Final Rule's requirement that transmission providers engage with Relevant State Entities regarding the cost allocation methodology(ies) to be applied to Long-Term Regional Transmission Projects.[69] These efforts remain ongoing, and will help inform the PJM Transmission Owners' June 2026 compliance filing.

[69] Order No. 1920 at P 1354; Order No. 1920-A at P 635.

C. Relationship Between the Proposed LTRTP Protocol and Existing PJM RTEP Protocol

The Final Rule requires each transmission provider to explain on compliance: (i) how the transmission planning cycles for long-term regional transmission planning and existing regional transmission planning processes will interact, including how these processes will inform each other; (ii) how the initial timing sequence for its proposed long-term regional transmission planning process interacts with its existing regional transmission planning process; and (iii) whether and, if so, how regional transmission facilities selected pursuant to the existing regional transmission planning process could be displaced by selected pursuant to the long-term transmission planning process.[70] The Commission provided flexibility "to integrate the existing regional transmission planning processes with Long-Term Regional Transmission Planning in a manner that mitigates the potential for disruption of the existing regional transmission planning processes."[71]

PJM addresses these required components below, following a brief summary of the development of PJM's currently effective regional transmission planning process, as proposed to be modified by the Operating Agreement revisions included in this filing.

1. High level overview of the development of the Regional Transmission Expansion Plan to address nearer-term and long-term transmission needs

At the outset, PJM emphasizes that in the PJM Region, there will be one regional transmission plan – the Regional Transmission Expansion Plan – to address all identified transmission needs in both the nearer- and long-term (as those concepts are explained below).

[70] Order No. 1920 at P 1071.

[71] Order No. 1920 at P 1072.

Currently, the Regional Transmission Expansion Plan is developed pursuant to the RTEP Protocol set forth in Operating Agreement, Schedule 6. The Regional Transmission Expansion Plan is comprised of the complete set of transmission enhancements or expansions that, consistent with the requirements of the RTEP Protocol, PJM has identified as necessary to preserve nearer-term[72] grid reliability, meet public policies,[73] and provide economic efficiency to load and customers in all of the jurisdictions in the PJM Region. The regional planning process set forth in the RTEP Protocol encompasses two 18-month study cycles for reliability that overlap by six months, and one 24-month cycle for market efficiency studies. All transmission enhancements or expansions that are identified pursuant to the RTEP Protocol are incorporated into the Regional Transmission Expansion Plan.

PJM has more recently engaged in transmission planning designed to optimize transmission solutions to address multiple transmission needs[74] and to identify more robust and scalable solutions to address needs in anticipation of rapid changes in the resource mix

[72] For purposes of this compliance filing, PJM refers to "nearer-term" needs as those identified pursuant to the RTEP Protocol based on models projecting system needs within the five to seven/eight-year planning horizon. Under the existing process, PJM accounts for transmission system needs in years six through 15 by analyzing the aggregate effects of many system trends including long-term load growth, impacts of generation deactivation, and broader generation development patterns, including renewable resources and storage technologies that may be under development.

[73] Consistent with the requirements of Order No. 1000, the RTEP Protocol requires PJM to consider public policy needs in developing solutions to nearer-term transmission needs. *See* Operating Agreement, Schedule 6, sections 1.5.3, 1.5.6, 1.5.8. Additionally, PJM's State Agreement Approach process is a mechanism pursuant to which a state or group of states can agree to pay for their own public policy-driven transmission projects. *See, e.g.*, *PJM Interconnection, L.L.C.*, 179 FERC ¶ 61,024, at P 2 (2022). The State Agreement Approach was proposed by PJM as a supplement to its Order No. 1000 compliance filing and its use was approved by the Commission in 2013. *See* , 142 FERC 61,214, at PP 142-43; Second Order No. 1000 Compliance Order, 147 FERC ¶ 61,128, at P 92. Transmission enhancements or expansions identified pursuant to the State Agreement Approach are also incorporated into the Regional Transmission Expansion Plan.

[74] For instance, PJM has recently identified multi-driver projects in two separate competitive solicitation window processes. Multi-driver projects are transmission enhancements or expansions that address a combination of reliability, market efficiency and public policy objectives.

and demand. Historically, however, the RTEP Protocol's competitive windows to address reliability and market efficiency needs have been conducted on parallel paths.[75] PJM conducts windows for each of the 18- and 24-month study cycles to identify transmission solutions. As such, PJM identifies updates to the Regional Transmission Expansion Plan to address nearer-term needs on an annual basis.

In compliance with the Final Rule, PJM is seeking to expand upon its existing RTEP Protocol in order to incorporate solutions to address longer-term transmission needs into the Regional Transmission Expansion Plan. Specifically, as explained throughout this transmittal letter, PJM is proposing the LTRTP Protocol to be set forth in proposed Operating Agreement, Schedule 6-C, to develop a Long-Term Regional Transmission Plan of transmission enhancements or expansions that holistically account for Long-Term Transmission Needs, taking into account transmission needs identified over a 20-year planning horizon. The proposed LTRTP Protocol contemplates a five-year Long-Term Regional Transmission Plan cycle,[76] looking out over a 20-year planning horizon. Through this process, PJM will develop a holistic "All-in-One Plan" to identify all Long-Term Transmission Needs and solicit Long-Term Transmission Projects to address such needs. PJM will identify the more efficient or cost-effective solutions to Long-Term Transmission

[75] Although the windows have proceeded on parallel paths, the models used to identify needs in the separate windows are the same, meaning that the separate windows inform each other. For example, the RTEP Protocol's reliability and market efficiency processes account for the needs being identified, and also ensure that no redundant facilities are selected without consideration of the facilities being considered in the separate process. That is, PJM planning staff coordinates to check and evaluate whether solutions being developed and right-sized in one window can be sufficient to address the combined needs more holistically.

[76] A Long-Term Regional Transmission Plan cycle refers to the five-year period during which PJM will conduct its proposed LTRTP Protocol, from the commencement of the process, as defined in proposed Operating Agreement, Schedule 6-C, section 1.4.1 through the approval of the recommended Long-Term Regional Transmission Plan by the PJM Board in proposed Operating Agreement, Schedule 6-C, section 1.17.

Needs, and ultimately identify a comprehensive set of transmission enhancements or expansions to recommend to the PJM Board.[77]

In doing so, PJM designed the LTRTP Protocol process to identify all Long-Term Transmission Needs across the PJM Region, regardless of whether they are influenced by reliability, policy, market efficiency, generation deactivations, or interconnection-related drivers. This process is aided by the development of an intermediate "Core Plan" that identifies the needs and potential solutions sufficient to address the reliability-based needs within the 20-year long-term planning horizon, and then from there develop a holistic, right-sized "All-in-One Plan" that accounts for the Long-Term Transmission Needs within the PJM Region. PJM's proposed LTRTP Protocol will inform states and other PJM stakeholders of Long-Term Transmission Needs, how they may be addressed, and associated benefits. PJM's LTRTP Protocol also offers a preview of how the needs are influenced by specific drivers, allowing for an informed decision-making process related to state sponsorship, voluntary funding, cost allocation, and a potential state opt-out mechanism.

Once approved by the PJM Board, all transmission enhancements or expansions that are identified pursuant to the LTRTP Protocol (i.e., Long-Term Transmission Projects) will be incorporated into the Long-Term Regional Transmission Plan, which, in turn, will be incorporated into the Regional Transmission Expansion Plan. As such, the Regional Transmission Expansion Plan will be updated to address Long-Term Transmission Needs at least every five years. The nearer-term Regional Transmission Expansion Plan will

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[77] *Infra* section II.G (Development of Plans to Address PJM Region's Long-Term Transmission Needs in a Holistic Manner).

continue to be informed by the active (last approved) Long-Term Regional Transmission Plan, providing directional guidance supporting how PJM may right-size and account for Long-Term Transmission Needs reflected in the Long-Term Regional Transmission Plan when addressing the nearer-term needs in the more efficient or cost-effective manner.

In short, as stated above, PJM will have one plan – the Regional Transmission Expansion Plan – that will holistically address: (i) nearer-term needs identified pursuant to the requirements of the existing RTEP Protocol that are compliant with and proactively account for Long-Term Transmission Needs and (ii) Long-Term Transmission Needs identified pursuant to the requirements of the proposed LTRTP Protocol that proactively accounts for all Long-Term Transmission Needs. In compliance with the Final Rule, PJM explains below how the processes required by the RTEP Protocol and LTRTP Protocol will interact with and inform one another.

2. Interaction between Transmission Planning cycles, including initial timing sequence

As indicated, PJM has designed its proposed LTRTP Protocol so that the Long-Term Regional Transmission Plan (developed pursuant to the proposed LTRTP Protocol) will be integrated into the Regional Transmission Expansion Plan (developed pursuant to the currently-effective RTEP Protocol).[78] The proposed LTRTP Protocol contains the discrete process that identifies Long-Term Transmission Needs and the process for identifying and selecting solutions addressing such needs. Because the Long-Term Regional Transmission Plan is incorporated into the Regional Transmission Expansion

[78] *See* Proposed Operating Agreement, Schedule 6-C, section 1.1 ("The Long-Term Regional Transmission Plan will be incorporated into the Regional Transmission Expansion Plan developed in accordance with Operating Agreement, Schedule 6.").

Plan,[79] all selected Long-Term Transmission Projects are a subset of the transmission enhancements or expansions included in PJM's Regional Transmission Expansion Plan,[80] consistent with the Final Rule.[81] Specifically, as discussed below in section II.G (Development of Plans to Address PJM Region's Long-Term Transmission Needs in a Holistic Manner), each update to the Long-Term Regional Transmission Plan will be reviewed and approved by the PJM Board and incorporated into the Regional Transmission Expansion Plan.[82]

As a result, PJM's actions to develop the Long-Term Regional Transmission Plan pursuant to the LTRTP Protocol will inform and affect its actions to develop the Regional Transmission Expansion Plan pursuant to the RTEP Protocol, and vice versa, in several ways.[83]

First, the assumptions and inputs underlying the development of the Regional Transmission Expansion Plan and the resulting set of selected projects will inform the assumptions and inputs underlying the development of the Long-Term Regional

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[79] *See* proposed Operating Agreement, Schedule 6-C, section 1.16(a) ("[T]he Office of the Interconnection shall develop a recommended Long-Term Regional Transmission Plan for incorporation into the Regional Transmission Expansion Plan and approval by the PJM Board.").

[80] Long-Term Transmission Projects are not to be conflated with Long-lead Projects (as the term is used in Operating Agreement, Schedule 6, section 1.5.8). Long-Term Transmission Projects address Long-Term Transmission Needs in the LTRTP Protocol (proposed Operating Agreement, Schedule 6-C). By contrast, Long-lead Projects address reliability violations with a long lead time in the RTEP Protocol (Operating Agreement, Schedule 6).

[81] Order No. 1920 at P 251 ("Long-Term Regional Transmission Facilities are a subset of regional transmission facilities as defined in Order No. 1000."); Order No. 1920-A at P 493 ("Long-Term Regional Transmission Planning is a form of regional transmission planning.").

[82] Proposed Operating Agreement, Schedule 6-C, sections 1.16, 1.17.

[83] Order No. 1920 at P 1072 ("[W]e understand that it will likely be useful to align in some manner the Long-Term Regional Transmission Planning cycle with existing transmission planning cycles."); Order No. 1920-A at P 509 ("[T]here may be overlap in the time horizons for these processes, and transmission providers should have the flexibility to integrate the existing regional transmission planning process with Long-Term Regional Transmission Planning in a manner that mitigates the potential for disruption of the existing regional transmission planning process.").

Transmission Plan and Long-Term Transmission Project selection. That is, the Long-Term Regional Transmission Plan "shall reflect transmission enhancements and expansions included in the Regional Transmission Expansion Plan; load forecasts; and projected changes in the resource mix, including projected generation retirements."[84]

Second, the assessment of Long-Term Transmission Needs and evaluation of proposals to address those needs, as well as selected Long-Term Transmission Projects, will all inform the decisions for enhancements or expansions to address the transmission needs identified pursuant to the RTEP Protocol. Thus, there will be a seamless and bidirectional interaction between the two regional transmission planning processes.

For example, if the initial Long-Term Regional Transmission Plan cycle commences in June 2027,[85] the assumptions, inputs, and selected transmission projects will be aligned with those that will be used for the RTEP Protocol's 18- and 24-month reliability and market efficiency planning cycles beginning later that year. Also, if the initial Long-Term Regional Transmission Plan cycle concludes in June 2031, then the recommended Long-Term Regional Transmission Plan for the initial Long-Term Regional Transmission Plan cycle will be used to inform transmission project selection in the RTEP Protocol's subsequent 18- and 24-month cycles, and PJM will look for opportunities to inform transmission project selection even earlier whenever it makes sense to do so.

In each cycle beyond the first Long-Term Regional Transmission Plan cycle, PJM will gather data, assumptions, and inputs used to develop prior updates to the Regional

[84] Proposed Operating Agreement, Schedule 6-C, section 1.3(b).

[85] PJM will commence the initial Long-Term Regional Transmission Plan cycle consistent with the implementation timeline discussed in section IV (Implementation Schedule and Effective Date of Operating Agreement Revisions) and ultimate effective date of proposed Operating Agreement, Schedule 6-C.

Transmission Expansion Plan (including the Long-Term Regional Transmission Plan) prior to the start of the subsequent cycle,[86] which is defined to commence at the initial assumptions meeting for Long-Term Scenario development.[87] This approach is consistent with the Final Rule, which clarified that transmission providers may include previously selected Long-Term Regional Transmission Projects "in the updated base or reference cases" in subsequent cycles and that doing so will "improve the accuracy of Long-Term Regional Transmission Planning."[88]

3. *Possible displacement of transmission enhancements or expansions developed pursuant to the RTEP Protocol by transmission enhancements or expansions developed pursuant to the LTRTP Protocol*

Although PJM's existing RTEP Protocol will not change (except to reflect certain requirements of the Final Rule as described in section III (Coordination of the LTRTP Protocol Process with the RTEP Protocol and Interconnection Processes), PJM's Long-Term Regional Transmission Plan will enhance this existing regional planning process.[89] As discussed below, there will be opportunities for projects identified pursuant to the LTRTP Protocol to be referred to the Regional Expansion Transmission Plan if it is a better

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[86] *See* Proposed Operating Agreement, Schedule 6-C, section 1.4.1 ("The data gathering and consultation process may begin before the commencement of a Long-Term Regional Transmission Plan study process.").

[87] *See* Proposed Operating Agreement, Schedule 6-C, section 1.4.1 ("Except for the first Long-Term Regional Transmission Plan study process conducted pursuant to this Schedule 6-C, a Long-Term Regional Transmission Plan study process commences with the initial assumptions meeting of the Transmission Expansion Advisory Committee for a given cycle").

[88] Order No. 1920 at P 382, Order No. 1920-A at P 262.

[89] Order No. 1920 at P 241 ("We expect Long-Term Regional Transmission Planning to enhance the existing regional transmission planning and cost allocation processes required by Order No. 1000. Except as set forth in this final rule, we do not require that any transmission provider replace or otherwise make changes to its existing Order No. 1000-compliant regional transmission planning processes that plan for reliability or economic transmission needs, or the associated Order No. 1000-compliant regional cost allocation method(s). Transmission providers may continue to rely on their existing regional transmission planning and cost allocation processes to comply with Order No. 1000's requirements related to transmission needs driven by reliability concerns or economic considerations.").

fit in that regional process.[90] For example, if, during the evaluation and selection process to address a Core LT Need that shares either needs or potential solutions that are identified in the nearer-term RTEP Protocol process, PJM determines that the inputs or factors affecting the nature or timing of the need and associated solution are still fluid and subject to change within a narrower time frame (most likely the case for more localized needs affected by load or generation pocket developments), PJM may decide to address such smaller needs more efficiently or cost-effectively through the annual RTEP Protocol process, in alignment with the overall long term expansion plan envisioned by the LTRTP.[91] Additionally, the holistic set of analyses and projects developed pursuant to the LTRTP Protocol will also provide guidance to the RTEP Protocol process as to how the PJM Transmission System may evolve, taking into account the system's longer-term needs.

Moreover, it is conceivable that, to the extent that Long-Term Transmission Projects can more efficiently or cost-effectively address transmission needs identified pursuant to the RTEP Protocol in a timely manner, a Long-Term Transmission Project may displace a transmission facility in the Regional Transmission Expansion Plan and address both the nearer-term and Long-Term Transmission Need. For example, a Long-Term Transmission Project may involve a scope expansion of a nearer-term regional project,

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[90] In the Final Rule, the Commission directed transmission providers to explain how the long-term regional transmission planning process could result in "possible displacement of regional transmission facilities from the existing regional transmission planning processes." Order No. 1920 at P 1071.

[91] Proposed Operating Agreement, Schedule 6-C, section 1.10(c) ("In evaluating proposals to address a Core LT Need, to the extent the Office of the Interconnection determines that the more efficient or cost-effective solution to address such need may be a Short-term Project either proposed pursuant to section 1.8 above or developed through the Regional Transmission Expansion Plan Protocol in Operating Agreement, Schedule 6, the Office of the Interconnection may address such transmission need through the Regional Transmission Expansion Plan process in Operating Agreement, Schedule 6.").

Right-Sized Replacement Facility, or an entirely new greenfield project that could address both a nearer-term need and a Long-Term Transmission Need. To the extent practical and economical, PJM would, alternatively or additionally, accelerate all or parts of such Long-Term Transmission Project and/or employ interim procedures to address the nearer-term need and avoid having to construct redundant solutions planned separately to address the nearer-term and the Long-Term Transmission Needs. PJM's proposal specifically considers these possibilities in its evaluation of benefits of proposed solutions.[92] In practice, however, PJM believes that the displacement of regional transmission facilities from the Regional Transmission Expansion Plan generally will only be feasible if the lead time of the relevant Long-Term Transmission Project is short enough to address the nearer-term need.

4. *Most elements of the RTEP Protocol will be unaffected by the revisions proposed in this filing*

As previewed above, PJM's RTEP Protocol is unaffected except as directed by the Final Rule.[93] Importantly, PJM is not proposing any changes to its existing approaches to (1) consider transmission-related needs driven by public policy[94] or (2) develop transmission solutions to address a state(s)' Public Policy Requirements via the State

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[92] *See* proposed Operating Agreement, Schedule 6-C, section 1.9(b)(i) (considering the benefit of "the avoidance or deferral of any transmission facilities and/or replacement of aging transmission infrastructure, including cost savings associated with accelerating the development of a Long-Term Transmission Project start date in lieu of implementing a Short-term Project or replacement facility").

[93] *See* Order No. 1920 at 241. As discussed further below, PJM has made changes to Operating Agreement Schedule 6 to include a requirement to consider alternative transmission technologies and Final Rule provisions about (1) alternative transmission technologies (proposed Operating Agreement, Schedule 6, section 1.5.8(c)(1)), and (2) interconnection-related transmission enhancements or expansions requiring network upgrades (proposed Operating Agreement, Schedule 6, section 1.5.8(q)).

[94] *See* Operating Agreement, Schedule 6, sections 1.5.3, 1.5.6, and 1.5.8. The Commission explained that it would not alter its existing Order No. 1000 requirement to consider transmission needs driven by Public Policy Requirements, but that transmission providers would be deemed in compliance with this existing requirement by implementing its Long-Term Regional Transmission Plan in accordance with the Final Rule. Order No. 1920 at P 242.

Agreement Approach.[95] As the Final Rule explained, transmission providers "that wish to continue to use some or all of their existing regional transmission plan and cost allocation processes to consider transmission needs driven by Public Policy Requirements" must make a demonstration that those processes do not interfere with or undermine the Long Term Regional Transmission Plan.[96] PJM's proposal to retain its approaches to identify public policy-driven transmission solutions intact under the RTEP Protocol does not interfere with its proposed LTRTP Protocol. The scenario development, evaluation, and selection processes used to develop each plan are developed in accordance with two separate processes, under different timelines, and therefore they provide PJM and its states with more options, and on annual basis, to advance integrated sets of transmission enhancements or expansions to support public policies with different timeframes and requirements.[97]

5. PJM's LTRTP Protocol ensures robust stakeholder engagement.

PJM considered the integration with its existing, Order No. 1000-compliant RTEP Protocol as a starting point for the development of its LTRTP Protocol.[98] The proposed

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[95] As discussed above, PJM's State Agreement Approach process is a mechanism by which states can voluntarily agree to pay 100% of the costs associated with their own public policy-driven transmission projects. *See supra* n.73. The Final Rule expressly confirmed that PJM is permitted to retain its existing State Agreement Approach process. *See* Order No. 1920-A at PP 210, 213.

[96] Order No. 1920 at P 243, Order No. 1920-A at P 210.

[97] As noted above, the Long-Term Regional Transmission Plan will be incorporated into the Regional Transmission Expansion Plan. *See also* proposed Operating Agreement, Schedule 6-C, section 1.17(c) ("Following PJM Board approval, the recommended Long-Term Regional Transmission Plan will be incorporated into the Regional Transmission Expansion Plan.").

[98] *See* First Order No. 1000 Compliance Order, 142 FERC ¶ 61,214, at P 37 (explaining that the "[Regional Transmission Expansion Plan] process has continually evolved since the Commission accepted PJM's RTEP Protocol in 1997."). In its First Order No. 1000 Compliance Order, the Commission affirmed PJM's planning process as compliant with Order Nos. 890 and 1000, with the exception of the "comparability principle," *id.* at PP 52-53, which was later accepted in PJM's second Order No. 1000 compliance filing. Second Order No. 1000 Compliance Order, 147 FERC ¶ 61,128, at P 38 (accepting proposed revisions as complying with comparability principle).

LTRTP Protocol is built on the same framework underlying PJM's RTEP Protocol, including PJM's Order No. 1000-approved sponsorship model pursuant to which transmission developers propose solutions to address PJM-identified transmission needs, and the current processes by which PJM engages with stakeholders to identify such transmission needs and the more efficient or cost-effective solutions to address those identified needs. As such, the proposed LTRTP Protocol meets Order No. 890's and Order No. 1000's planning principles[99] of: (1) coordination; (2) openness; (3) transparency; (4) information exchange; (5) comparability; and (6) dispute resolution.[100]

PJM and its stakeholders have extensive and successful experience with the Order No. 1000 competitive window process upon which the competitive windows contemplated by the proposed LTRTP Protocol are based. Since commencement of the Order No. 1000 competitive proposal windows, PJM convened a total of 34 Order No. 1000 competitive proposal windows consisting of: (i) 26 windows to address reliability and operational performance needs; (ii) six long-term market efficiency windows; (iii) one Multi-Driver Project window; and (iv) one window to address a state's implementation of the State Agreement Approach process under Schedule 6, section 1.5.9 of the PJM Operating Agreement.[101]

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[99] *See Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 118 FERC ¶ 61,119, at P 440 *et seq.*, *order on reh'g*, Order No. 890-A, 121 FERC ¶ 61,297 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228, *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009); Order No. 1000 at PP 146 *et seq*. PJM's stakeholder processes were found by the Commission to satisfy its Order No. 890 and Order No. 1000 openness principles through PJM's open and transparent planning committees. *See PJM Interconnection, L.L.C.*, 123 FERC ¶ 61,163, at P 28 (2008) ("First Order No. 890 Compliance Order"), *order on compliance*, 127 FERC ¶ 61,166 (2009) ("Second Order No. 890 Compliance Order" and collectively, "Order No. 890 Compliance Orders"); First Order No. 1000 Compliance Order, 142 FERC ¶ 61,214, at P 52.

[100] *See* Proposed Operating Agreement, Schedule 6-C, section 1.1.

[101] *See* PJM Interconnection, L.L.C., *PJM Competitive Planning Process*, https://www.pjm.com/planning/competitive-planning-process.aspx (last visited Dec. 8, 2025).

By building on the same framework and using a similar competitive window process key to PJM's existing RTEP Protocol, PJM is proposing a long-term planning approach that is familiar to stakeholders—which will maintain the existing competitive processes' transparency and openness, reduce barriers to participation, and facilitate PJM's ability to develop plans holistically to address the PJM Region's needs.

D. PJM Extensively Engaged with Stakeholders in Developing This Filing

As contemplated by the Final Rule,[102] PJM has extensively engaged with stakeholders from all sectors in developing PJM's proposal, as well as the Operating Agreement language proposed in this filing. Over the course of developing the proposal, PJM convened sixteen special meetings of the Transmission Expansion Advisory Committee ("TEAC")[103] to discuss issues specific to implementing the Final Rule. Eight of the Special TEAC meetings were dedicated exclusively to working with stakeholders to develop PJM's proposal to comply with the Final Rule. Following these meetings, PJM solicited feedback and provided opportunities for stakeholders to make recommendations regarding its proposal. PJM also made its Order No. 1920 Whitepaper publicly available on its website for stakeholders to review,[104] along with meeting presentations and other

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[102] *See* Order No. 1920-A at P 923 (requiring consultation with stakeholders to develop compliance filings, in addition to the requirements discussed above with respect to engagement regarding cost allocation methods).

[103] TEAC is an advisory-only, open PJM stakeholder committee, which holds regular (at least monthly) public meetings to review regional transmission planning activities, analyses, and proposed transmission solutions, and to provide advice to PJM regarding the preparation of the PJM Regional Transmission Expansion Plan for review and approval by the PJM Board. TEAC activities are at the core of stakeholder input in the Regional Transmission Expansion Plan process. As explained throughout this filing, PJM proposes to expand the role of TEAC to also encompass activities related to the development of the Long-Term Regional Transmission Plan.

[104] *See supra* n.67 (discussing September 2025 Whitepaper and providing URL).

materials.[105] Finally, PJM posted, solicited, and incorporated feedback on the Operating Agreement language proposed in this compliance filing. This compliance filing is thus the reflects feedback from PARSEC and stakeholders, including the PJM Transmission Owners.

These efforts have ensured that PJM's LTRTP Protocol captures the diverse needs of thirteen states and the District of Columbia, while also tailoring the framework to the unique features of the PJM Region.

E. The Scope of This Compliance Filing Is Informed by the Allocation of Filing Rights Between PJM and the PJM Transmission Owners

As discussed in this filing, PJM's proposed LTRTP Protocol sets forth an approach that complies with and implements the directives of the Final Rule to facilitate holistic long-term regional transmission planning in the PJM Region.

While the enclosed LTRTP Protocol faithfully implements the Final Rule, it does not represent the full scope of changes needed to ensure compliance with every aspect of the Final Rule. Rather, due to the division of filing rights between PJM and the PJM Transmission Owners,[106] PJM does not have the authority to submit revisions to Tariff provisions governing local planning and cost allocation. As such, PJM's proposal is limited to the regional transmission planning aspects of compliance with the Final Rule that are unrelated to cost allocation.

PJM understands that the PJM Transmission Owners are concurrently submitting a compliance filing proposing new Attachment M-5 to the PJM Tariff to add rules and

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[105] PJM Interconnection, L.L.C., Transmission Expansion Advisory Committee, available at https://www.pjm.com/committees-and-groups/committees/teac (last visited December 1, 2025) (PJM's TEAC information page).

[106] *See supra* n.7 (detailing the allocation of filing rights between PJM and the PJM Transmission Owners).

associated defined terms governing the development of the list of anticipated replacement needs over the ten years from the start of each Long-Term Regional Transmission Plan cycle.[107] Pursuant to the rules in proposed Attachment M-5, each Transmission Owner will develop and submit to PJM its respective list of anticipated replacement facility needs, and then, under PJM's complementary rules, PJM will evaluate opportunities for right-sizing replacement facilities to meet Long-Term Transmission Needs.[108]

Regarding cost allocation, the PJM Transmission Owners and PARSEC jointly requested to extend the deadline for submitting the compliance filing related to cost allocation until June 12, 2026 to provide "additional time to continue their work to develop a cost allocation proposal."[109] Therefore, the cost allocation rules for Long-Term Transmission Projects selected in the Long-Term Regional Transmission Plan are not final and will be filed at a later date. There are two features of PJM's compliance filing that are inextricably intertwined with the cost allocation rules: the state opt-out mechanism[110] and voluntary funding opportunities. Given that additional time is needed for the development of the cost allocation rules, additional time is also needed for the development of the rules for the state opt-out mechanism and any voluntary funding opportunities. PJM will submit

[107] PJM understands that the PJM Transmission Owners are also submitting revisions to Tariff, Attachment M-3 in compliance with the Final Rule's requirements related to enhancing the transparency of the local transmission planning process.

[108] Proposed Operating Agreement, Schedule 6-C, section 1.7.

[109] *Building for the Future Through Electric Regional Transmission Planning and Cost Allocation*, Joint Motion for Extension of Time of PARSEC and PJM Transmission Owners, at 5, Docket No. RM21-17-000 (Sep. 12, 2025). The Commission granted PARSEC's requested extension to April 7, 2026, and PJM Transmission Owners' requested extension to June 12, 2026. *Building for the Future Through Electric Regional Transmission Planning and Cost Allocation*, Notice of Extension of Time, Docket No. RM21-17-000 (Oct. 17, 2025).

[110] As discussed above, while the state opt-out mechanism is still in development, as envisioned, it provides a means for a state to "opt out" of funding a project that would meet PJM's selection criteria, including the applicable benefit-to-cost ratio.

those rules and complete its compliance obligation with respect to long-term regional transmission planning, concurrent with the Transmission Owners' compliance filing related to cost allocation, by no later than June 12, 2026.[111]

While PJM believes this division of its compliance filing is compliant with the Commission's extension of the deadline for submittal of the PJM Transmission Owners' filing to comply with the cost allocation requirements of the Final Rule, should the Commission determine that any waivers are required to facilitate this approach, PJM respectfully requests that the Commission grant such waivers as may be necessary.[112] In addition, to the extent necessary, PJM respectfully requests an extension of time for these aspects of PJM's LTRTP Protocol to allow them to be properly developed alongside the cost allocation approach(es).[113]

Finally, the Final Rule envisioned that a transmission provider's compliance filing addressing the interregional transmission coordination requirements of Order No. 1920 would be filed separately from the filings to comply with the regional long-term transmission planning requirements.[114] Consistent with the Final Rule, and the Commission's May 23, 2025 notice of extension ("Notice"),[115] this filing does not include

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[111] *See Building for the Future Through Electric Regional Transmission Planning and Cost Allocation*, Notice of Extension of Time, Docket No. RM21-17-000 (Oct. 17, 2025).

[112] *See PJM Interconnection, L.L.C.*, 164 FERC ¶ 61,004, at PP 5, 14 (2018) (granting requested waivers to defer party's integration into PJM subject to a compliance filing when the integration effective date was uncertain); *PJM Interconnection, L.L.C.*, 127 FERC ¶ 61,016, at P 30 (2009) (granting requested waivers of PJM Tariff requirement to file cost responsibility assignments within 30 days in the 2009 RTEP filing subject to the outcome in another proceeding); *PJM Interconnection, L.L.C.*, 121 FERC ¶ 61,034, at P 34 (2007) (granting requested waivers of PJM Tariff requirement to file cost responsibility assignments within 30 days in the RTEP filing subject to the outcome in another proceeding).

[113] 18 C.F.R. § 385.2008.

[114] Order No. 1920 at PP 12-13, 1770; Order 1920-A at P 904.

[115] *Building for the Future Through Electric Regional Transmission Planning and Cost Allocation*, Docket No. RM21-17-000, Notice of Extension of Time (May 23, 2025) (granting PJM extensions of time to submit its compliance filings to demonstrate that it meets the interregional transmission coordination requirements

any revisions to address the interregional coordinate requirements of Order No. 1920. PJM will submit separate filings to address these requirements consistent with the dates established in the Notice.

II. PROPOSED LTRTP PROTOCOL

A. PJM Will Implement a New Process to Develop PJM's Long-Term Regional Transmission Plan in Compliance with Order No. 1920.

This section of the transmittal letter (1) provides an overview of proposed changes to the Operating Agreement, including key definitions to implement the requirements of the Final Rule; (2) explains how the proposed LTRTP Protocol will interact with existing regional planning processes; and (3) summarizes how PJM will coordinate with TEAC and PARSEC during the implementation of the activities required by the LTRTP Protocol.

1. Overview of proposed Operating Agreement revisions, key definitions, and contents of the LTRTP Protocol

PJM will establish new Operating Agreement Schedule 6-C, the "Long-Term Regional Transmission Planning Protocol,"[116] which comprises the majority of the substantive Operating Agreement changes to implement the new long-term regional transmission planning process. In response to the Final Rule's directives, PJM also proposes changes to other sections of the Operating Agreement to implement requirements of the Final Rule.[117]

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of Order No. 1920 interregional transmission coordination with: (i) Southeastern Regional Transmission Planning Jurisdictional Sponsors and Midcontinent Independent System Operator, Inc. by 16 months, from August 12, 2025 to December 12, 2026; and (ii) ISO New England Inc. and New York Independent System Operator by 22 months, from August 12, 2025, to June 14, 2027).

[116] Proposed Operating Agreement, Schedule 6-C.

[117] Specifically, PJM is revising proposed Operating Agreement, Schedule 6, sections 1.5.8(c)(1), 1.5.8(*l*), and 1.5.8(q), to incorporate the Final Rule's directives regarding interconnection-related transmission enhancements or expansions requiring network upgrades and alternative transmission technologies, respectively.

Proposed Operating Agreement, Schedule 6-C sets forth the rules for developing the "Long-Term Regional Transmission Plan," i.e., "a regional transmission plan developed on a sufficiently long-term, forward-looking, and comprehensive basis that identifies Long-Term Transmission Needs, identifies Long-Term Transmission Projects that meet such needs, measures the benefits of those transmission facilities, and evaluates those transmission facilities for potential selection in the Regional Transmission Expansion Plan for purposes of cost allocation as the more efficient or cost-effective regional transmission facilities to meet Long-Term Transmission Needs with consideration of benefits to consumers relative to costs without over-building."[118] This definition is wholly compliant with the Final Rule's directive that PJM establish a long-term planning process.[119] As the proposed Operating Agreement, Schedule 6-C requires, the Long-Term Regional Transmission Plan, which will be developed by PJM through an open and collaborative process,[120] will "holistically address reliability, economic, and public policy needs of the PJM Region over the planning horizon, with full consideration of federal, Tribal, state, and local policies."[121]

To implement the proposed LTRTP Protocol, PJM also proposes to define several other terms. While those newly-defined terms are addressed throughout this transmittal letter, the following are central to PJM's proposed LTRTP Protocol:

- "Long-Term Transmission Need" shall mean "transmission needs identified by the Office of the Interconnection pursuant to Operating Agreement,

[118] Proposed Operating Agreement, Definitions I-L (defining Long-Term Regional Transmission Plan).

[119] Order No. 1920 at P 224; Order No. 1920-A at PP 210-217.

[120] See *infra* section V (Stakeholder and Transparency Provisions and Compliance with Transmission Planning Principles).

[121] Proposed Operating Agreement, Schedule 6-C, section 1.1.

Schedule 6-C, resolution of which may require a Long-Term Transmission Project."[122]

- "Long-Term Transmission Project" shall mean "one or more enhancement(s) or expansion(s) of the Transmission System identified through the Long-Term Regional Transmission Plan process that, on an aggregate basis of all components, addresses a Long-Term Transmission Need or common set of Long-Term Transmission Needs."[123]

Proposed Operating Agreement, Schedule 6-C, section 1.3 provides a high-level overview of the contents of the Long-Term Regional Transmission Plan, which "shall consolidate the Long-Term Transmission Projects that holistically address Long-Term Transmission Needs of the PJM Region into a single plan by (i) maintaining the reliability of the PJM Region in an economically efficient manner; (ii) enhancing the efficiency and operational performance of wholesale electric service markets; (iii) advancing federal, Tribal, state, and local public policies; and (iv) facilitating the efficient long-term integration of generation resources."[124] At a minimum, the Long-Term Regional Transmission Plan will include a designation of the Transmission Owners and/or Nonincumbent Developers that will construct, own, and/or finance each selected Long-Term Transmission Facility,[125] and identify how costs will be recovered.[126]

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[122] Proposed Operating Agreement, Definitions I-L (defining Long-Term Transmission Need). PJM also proposes definitions for two subsets of Long-Term Transmission Needs: Core LT Needs and Additional LT Needs.

[123] Proposed Operating Agreement, Definitions I-L (defining Long-Term Transmission Project).

[124] Proposed Operating Agreement, Schedule 6-C, section 1.3(b).

[125] *See* Proposed Operating Agreement, Schedule 6-C, section 1.3(c).

[126] *See* proposed Operating Agreement, Schedule 6-C, section 1.17(a) ("In accordance with Operating Agreement, Schedule 6, sections 1.6 and 1.7, as part of approving the recommended Long-Term Regional Transmission Plan and incorporating it into the Regional Transmission Expansion Plan, the PJM Board shall approve the cost allocations for the selected Long-Term Transmission Projects consistent with Tariff, Schedule 12.").

Additionally, the Long-Term Regional Transmission Plan "shall conform at a minimum to the applicable reliability principles, guidelines and standards of [North American Electric Reliability Corporation], ReliabilityFirst Corporation, and SERC [Reliability Corporation], and other Applicable Regional Entities in accordance with the planning and operating criteria and other procedures detailed in the PJM Manuals."[127]

Finally, Operating Agreement, Schedule 6-C, section 1.20 describes the LTRTP Protocol's relationship with the PJM Tariff. That provision clarifies that nothing in Operating Agreement, Schedule 6-C "shall modify the rights and obligations of an Eligible Customer or a Transmission Customer with respect to required studies and completion of necessary enhancements or expansions."[128]

2. Coordination with TEAC and PARSEC

As explained throughout this transmittal letter and detailed in section V (Stakeholder Participation and Transparency Provisions and Compliance with Transmission Planning Principles) below, PJM will consult with states and stakeholders at every stage of the process. As with PJM's currently effective RTEP Protocol, PJM intends to consult with stakeholders through regular TEAC meetings to develop the Long-Term Regional Transmission Plan. Additionally, in compliance with the Final Rule, PJM also will consult with PARSEC throughout the development of the Long-Term Regional Transmission Plan. Upon implementation of the LTRTP Protocol, PJM will continue to consult and engage with PARSEC or any successor organization.

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[127] Proposed Operating Agreement, Schedule 6-C, section 1.1.

[128] Proposed Operating Agreement, Schedule 6-C, section 1.20.

Proposed Operating Agreement, Schedule 6-C, section 1.2 sets forth coordination procedures between both PJM and TEAC, and PJM and PARSEC, during the development of the Long-Term Regional Transmission Plan. Consistent with proposed Operating Agreement, Schedule 6-C, section 1.2(a), PJM will hold periodic meetings with TEAC,[129] and TEAC will provide "advice and recommendations" to PJM about the development of the Long-Term Regional Transmission Plan. Such meetings will include, among other topics, the development of Long-Term Scenarios and sensitivity analyses, projects to be included in the Long-Term Regional Transmission Plan, interregional long-term planning issues, among other topics. PJM will also make available to TEAC "reasonably required information and data to develop the Long-Term Regional Transmission Plan," subject to established procedures to maintain the protection of Critical Energy Infrastructure Information and other confidential information.[130] The full extent of PJM's consultation with TEAC is detailed in sections II, III, and V of this transmittal letter, and summarized in Table 1 (General Stages of the LTRTP Protocol) in section V below.

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[129] TEAC is a technical stakeholder group that was established as a means for PJM and stakeholders to consult on regional transmission planning. *See* Operating Agreement, Schedule 6, section 1.3(b). *See also supra* n.105185. Under proposed Operating Agreement, Schedule 6-C, section 1.2(a), "the Transmission Expansion Advisory Committee shall be open to participation by: (i) all Transmission Customers and applicants for transmission service; (ii) any other entity proposing to develop Transmission Facilities to be integrated into the PJM Region; (iii) all Members; (iv) the electric utility regulatory agencies within the States in the PJM Region, the PJM Area Relevant States Entities Committee, and the Independent State Agencies Committee; and (v) any other interested entities or persons."

[130] Proposed Operating Agreement, Schedule 6-C, section 1.2(a). Confidential information will be treated pursuant to Operating Agreement, section 18.17.

Separately, under proposed section 1.2(b), PJM will hold periodic meetings with PARSEC to provide updates on the development of the Long-Term Regional Transmission Plan and, at a minimum, discuss:

(i) the state public policies and other assumptions to be used in developing Long-Term Scenarios, in compliance with Final Rule's directive to consult states in the Long-Term Scenario development process; [131]

(ii) the state public policies, including legislative and regulatory initiatives, to consider including in planning analyses, in compliance with the Final Rule's directive to consult states about the policies that will impact the Long-Term Scenario analysis;[132]

(iii) the impacts of state regulatory actions, projected changes in load growth, demand response resources, energy efficiency programs, generating capacity, market efficiency and other trends in the industry, under the Final Rule's directive described in (ii), above;[133]

(iv) alternative sensitivity studies, modeling assumptions, and Long-Term Scenario analyses proposed by PARSEC, in compliance with the Final Rule's directive to provide an opportunity for states to provide meaningful input on the development of Long-Term Scenarios;[134] and

(v) the All-in-One Plan and the intermediate step Core Plan and as discussed in section II.G (Development of Plans to Address PJM Region's Long-Term Transmission Needs in a Holistic Manner), and voluntary funding opportunities, in compliance with the Final Rule's directive to consult states about selection criteria and voluntary funding.[135]

While the foregoing is not an exhaustive list of PJM's continued engagement with PARSEC, these provisions go above and beyond the requirements of the Final Rule, which

[131] *See* Order No. 1920 at PP 528-532; Order No. 1920-A at PP 193, 241-242. *See also* Order No. 1920-A at P 275 (clarifying the requirement for transmission providers to consult with and consider the positions of state entities when incorporating planning for states' laws, policies, and regulations into the development of each Long-Term Scenario). The details implementing this requirement will be set forth in the PJM Manuals.

[132] *See* Order No. 1920 at PP 528-532; Order No. 1920-A at PP 193, 241-242.

[133] *See* Order No. 1920 at PP 528-532; Order No. 1920-A at PP 193, 241-242.

[134] *See* Order No. 1920 at P 305.

[135] *See* Order No. 1920 at PP 994-1002 (state consultation about selection criteria); PP 1012-1013 (voluntary funding requirements); Order No. 1920-A at 462 (voluntary funding requirements).

"decline[d] to adopt the NOPR proposal to require transmission providers to include in their [tariff] a process for coordinating with Relevant State Entities."[136] PJM may also meet with individual states as needed to better understand assumptions made concerning their specific state policies.

PARSEC may request that PJM schedule additional meetings as necessary.[137] In compliance with the strong role of the states envisioned in the Final Rule,[138] PJM will endeavor to inform TEAC of PARSEC's input at these meetings, and "*shall* consider such input in developing the Long-Term Regional Transmission Plan, and *shall* explain its determinations to the PJM Area Relevant State Entities Committee upon request."[139]

B. Development of Long-Term Scenarios

1. Compliance directive

The Final Rule requires PJM to "(1) develop and use Long-Term Scenarios as part of Long-Term Regional Transmission Planning and (2) use those Long-Term Scenarios to identify and evaluate Long-Term Regional Transmission Facilities needed to meet Long-Term Transmission Needs."[140]

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[136] Order No. 1920 at P 995.

[137] Proposed Operating Agreement, Schedule 6-C, section 1.2(b).

[138] *See* Order No. 1920 at P 994 (requiring transmission owners "to consult with and seek support from Relevant State Entities" and "demonstrate on compliance that they made good faith efforts to consult with and seek support from Relevant State Entities . . . when developing the evaluation process and selection criteria . . ."); Order No. 1920-A at P 639 (describing required state engagement as "robust").

[139] Proposed Operating Agreement, Schedule 6-C, section 1.2(b) (emphasis added). The Commission does "not require transmission owners to obtain [Relevant State Entities'] support, before proposing an evaluation process and selection criteria on compliance," because "transmission planning is the tariff obligation of each transmission provider and transmission providers retain ultimate responsibility for regional transmission planning, including Long-Term Regional Transmission Planning." Order No. 1920 at P 996.

[140] Order No. 1920 at P 298. The Commission defines Long-Term Scenarios as "scenarios that incorporate various assumptions using best available data inputs about the future electric power system over a sufficiently long-term, forward-looking transmission planning horizon to identify Long-Term Transmission Needs and enable the identification and evaluation of transmission facilities to meet such transmission needs." Order No. 1920 at P 302. PJM's proposed definition of Long-Term Scenarios uses this language and is therefore

The Final Rule also details certain compliance requirements for such Long-Term Scenarios,[141] including that transmission providers must (1) "make transparent the methodology, criteria, assumptions, and data used to develop each Long-Term Scenario" and (2) "provide meaningful opportunity for stakeholder input, including from state and local regulators, as well as non-jurisdictional entities, into the factors used to develop Long-Term Scenarios."[142]

Specifically, the Final Rule requires transmission providers to develop at least three "plausible and diverse" Long-Term Scenarios (as defined in the Final Rule)[143] "based upon best available data" so as to "allow transmission providers to better understand how certain [Order No. 1920-defined] categories of factors will give rise to Long-Term Transmission Needs, and requires transmission providers to update their assumptions periodically."[144] The Final Rule defined seven Factor Categories of data to inform Long-Term Scenario development, and required that three categories may not be "discounted."[145] Each Long-Term Scenario must use "a transmission planning horizon of no less than 20 years,"[146] as measured from the "beginning of the Long-Term Regional Transmission Planning

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compliant with this definition. Proposed Operating Agreement, Definitions I-L (defining Long-Term Scenario).

[141] *See* Order No. 1920 at P 248 (listing six requirements in implementing Long-Term Regional Transmission Planning).

[142] Order No. 1920 at P 305.

[143] *See* Order No. 1920 at P 575 ("We adopt the NOPR proposal to require transmission providers in each transmission planning region to develop a plausible and diverse set of at least three Long-Term Scenarios."). As the Commission explained "(1) plausible [means] that each scenario must itself be reasonably probable, and collectively that the set of plausible scenarios must reasonably capture probable future outcomes, and (2) diverse [means] that transmission providers can distinguish distinct transmission facilities or distinct benefits of similar transmission facilities in each Long-Term Scenario." Order No. 1920 at P 575.

[144] Order No. 1920 at P 231.

[145] Order No. 1920 at P 507.

[146] Order No. 1920 at P 344.

cycle."[147] In addition, the Final Rule requires transmission providers to "develop a sensitivity for each of the Long-Term Scenarios"[148] that is "specific to extreme weather events."[149]

Finally, the Final Rule requires transmission providers to develop additional Long-Term Scenarios at the request of the region's Relevant State Entities for use in the LTRTP Protocol process—primarily for cost allocation purposes.[150] The Final Rule clarifies that such a Long-Term Scenario use will only be allowed to identify Long-Term Transmission Needs to the extent the requested Long-Term Scenario meets the Final Rule's requirements of a compliant Long-Term Scenario.[151]

As discussed below, PJM's compliance filing fulfills these directives.

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[147] Order No. 1920 at P 347.

[148] Order No. 1920 at P 594.

[149] Order No. 1920 at P 597.

[150] *See* Order No. 1920-A at PP 364-366.

[151] *See* Order No. 1920-A at P 673 (requiring transmission providers to "include, in the transmittal or as an attachment to their compliance filings, any Long-Term Regional Transmission Cost Allocation and/or State Agreement Process agreed to by Relevant State Entities"). *See also* Order No. 1920-A at PP 364-366 (clarifying (i) "that transmission providers may develop additional scenarios, beyond the three Long-Term Scenarios that Order No. 1920 requires, to provide Relevant State Entities with information that they can use to inform the application of Long-Term Regional Cost Allocation Method(s) or the development of cost allocation methods through the State Agreement Process(es);" (ii) "when developing these additional analyses or scenarios used to inform cost allocation, transmission providers have the flexibility to depart from Order No. 1920's requirements related to the development of Long-Term Scenarios;" and (3) "[w]hile transmission providers may conduct [] additional analyses [as requested by Relevant State Entities], additional analyses that do not meet Order No. 1920's Long-Term Scenario requirements are not considered Long-Term Scenarios as defined in Order No. 1920.").

2. *PJM will use best available data inputs, including data gathered in conjunction with PARSEC and other stakeholders regarding the Final Rule's Factor Categories.*

a. <u>The Final Rule's requirements regarding "best available data inputs"</u>

The basic building blocks of any transmission planning process are the collection of data that will be used to assess transmission needs and identify transmission solutions to address those needs. The Final Rule recognized this fact and directed that Long-Term Scenarios be developed using the "best available data inputs."[152] The Commission clarified that "best available" refers to the use of data inputs that are "timely, developed using best practices and diverse and expert perspectives;" are "adopted via a process that satisfies the transmission planning principles of Order Nos. 890 and 1000;" and are reflective of the seven specific categories of "factors."[153] Specifically, the Commission directed that transmission providers must incorporate in the development of Long-Term Scenarios the following seven "Factor Categories:"

<u>**Final Rule Factor Categories**</u>

(1) federal, federally-recognized Tribal, state, and local laws and regulations affecting the resource mix and demand;

(2) federal, federally-recognized Tribal, state, and local laws and regulations on decarbonization and electrification; [154]

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[152] *See, e.g.*, Order No. 1920 at P 40 ("Long-Term Scenarios are scenarios that incorporate various assumptions using best available data inputs . . . .").

[153] Order No. 1920 at P 633.

[154] Order No. 1920 at P 440 (requiring that when a certain law or regulation may fit in both Factor Category One and Two, "transmission providers must account for the law or regulation in one of the two categories, not both, to avoid double-counting of that factor's anticipated effect on Long-Term Transmission Needs."). *See also* Order No. 1920-A at P 273 ("where factors may have overlapping effects on the planning assumptions, transmission providers must avoid double counting the effect that those factors have on assumptions used to develop Long-Term Scenarios. Specifically, where there is overlap between factors in Factor Categories One through Three . . ."). Implementation details in PJM's Manuals will explain how PJM will compute and account for each factor category's anticipated effect while preventing double counting.

(3) state-approved integrated resource plans and expected supply obligations for load-serving entities;
(4) trends in fuel costs and in the cost, performance, and availability of generation, electric storage resources, and building and transportation electrification technologies;
(5) resource retirements;
(6) generator interconnection requests and withdrawals; and
(7) utility commitments and federal, federally-recognized Tribal, state, and local policy goals that affect Long-Term Transmission Needs.

Thus, the Final Rule requires that the best available data inputs "reflect the [foregoing] list of factors that transmission providers must incorporate into Long-Term Scenarios."[155] Importantly, however, "transmission providers in a transmission planning region need not account for a factor, stakeholder-identified or otherwise, if they determine that factor is unlikely to affect Long-Term Transmission Needs."[156] PJM's proposal complies with this requirement because these Factor Categories, including each component within those categories, are explicitly incorporated into Schedule 6-C, sections 1.4.2(a) and (b). And, pursuant to those sections, PJM would collect data and inputs that fall within those factor categories, subject to PJM's discretion to determine the factors likely to affect Long-Term Transmission Needs.[157] Recognizing that, under the Final Rule, not all factors will be accounted for,[158] PJM will engage with stakeholders to identify the factors that are likely to affect Long-Term Transmission Needs. PJM's factor categories correspond to the Final Rule's Factor Categories as shown below:

[155] Order No. 1920 at P 603.

[156] Order No. 1920 at PP 415, 417; Order No. 1920-A at PP 147-148.

[157] Proposed Operating Agreement, Schedule 6-C, sections 1.4.2(a) and (b).

[158] Order No. 1920 at PP 415, 417; Order No. 1920-A at PP 147-148.

Final Rule's Factor Categories[159]	PJM's Corresponding Proposed Factor Categories in Proposed Operating Agreement, Schedule 6-C
(1) federal, federally-recognized Tribal state, and local laws and regulations affecting the resource mix and demand[160]	Section 1.4.2(a)(1): "federal, Tribal, state, and local laws and regulations that may affect the mix of resources that are projected to qualify to provide capacity and the demand for capacity;"[161]
(2) federal, federally-recognized Tribal, state, and local laws and regulations on decarbonization and electrification[162]	Section 1.4.2(a)(2): "federal, Tribal, state, and local laws and regulations that relate to decarbonization and electrification;"
(3) state-approved integrated resource plans and expected supply obligations for load-serving entities[163]	Section 1.4.2(a)(3): "integrated resource plans that have been approved by relevant state agencies, cooperative boards, and municipal utility authorities and expected supply obligation for Load Serving Entities;"

[159] Order No. 1920 at P 409 (footnotes omitted). In Order No. 1920-A, the Commission "exclude[d] corporate commitments from Factor Category Seven" and explained transmission providers are not required to "separately identify corporate commitments as a factor in their development of Long-Term Scenarios." Order No. 1920-A at P 934.

[160] *See* Order No. 1920 at PP 409, 432-37.

[161] PJM is clarifying that the resource supply mix and demand relevant to the Long-Term Regional Transmission Plan is the supply capable of providing capacity – i.e., the supply that can meet the region's reliability needs over the long-term, and the demand for that supply. Energy-only resources cannot be relied on to meet the region's reliability and energy needs. *See Shanker v. PJM Interconnection, L.L.C.*, 187 FERC ¶ 61,209, at P 36 n.83 (2024) ("energy-only resources . . . have no obligation to provide capacity and therefore cannot be relied on to meet reliability needs" (citing to PJM's Updated Effective Load Carrying Capability Construct Filing, Docket No. ER21-2043, at 25-26 n.52 (June 1, 2021))). Thus, given that the fundamental purpose of long-term planning is to plan for the PJM Region's Long-Term Transmission Needs, PJM's clarification here is reasonable.

[162] Order No. 1920 at PP 409, 440-42.

[163] Order No. 1920 at PP 409, 447-49.

(4) trends in fuel costs and in the cost, performance, and availability of generation, electric storage resources, and building and transportation electrification technologies[164]	Section 1.4.2(b)(1): "trends in fuel costs and in the cost, performance, and availability of different types of Capacity Resources, as well as trends in electrification technologies (e.g., transportation and building);"
(5) resource retirements[165]	Section 1.4.2(b)(2): "retirements of resources;"[166]
(6) generator interconnection requests and withdrawals[167]	Section 1.4.2(b)(3): "generator interconnection requests and withdrawals;"
(7) utility commitments and federal, federally-recognized Tribal, state, and local policy goals that affect Long-Term Transmission Needs[168]	Sections 1.4.2(a)(4) and (b)(4): "public utility policy goals and federal, Tribal, state, and local policy goals."[169]

As the Final Rule clarifies, "incorporating each category of factors" into Long-Term Scenarios "means that transmission providers must use factors in the category, for each factor individually or collectively, to determine the assumptions that will be used in

[164] Order No. 1920 at PP 409, 456-58.

[165] Order No. 1920 at PP 409, 463-66.

[166] The Final Rule requires that transmission providers account for "likely resource retirements beyond those that have been publicly announced." Order No. 1920 at P 464. *See also id.* at P 465 (providing examples for how to account for expected retirements). PJM will include resource retirements as part of its capacity expansion model and— for accuracy and in compliance with Order No. 1920—will include retirements not publicly announced. Implementing details about the capacity expansion model will be in PJM's Manuals. *See also infra* n.240 (discussing deactivations, including associated with different types of policies).

[167] Order No. 1920 at PP 409, 472-73.

[168] Order No. 1920 at PP 409, 481-84; Order No. 1920-A at PP 14, 18, 31, 296, 303 (removing corporate commitments).

[169] This factor is separated into section 1.4.2(a)(4) (data source will be the states) and section 1.4.2(b)(4) (data source will be other stakeholders) in Proposed Operating Agreement, Schedule 6-C. PJM will ensure that overlapping information from these two sources does not lead to double counting, as required by the Final Rule. Order No. 1920-A at P 273.

the development of Long-Term Scenarios."[170] In response to this directive, PJM proposes to "us[e] the data and information collected" for those factors to, "in consultation with the PJM Area Relevant States Committee, develop the Long-Term Scenario assumptions for use in the Long-Term Regional Transmission Plan study process."[171] PJM will thus directly be using this data to develop assumptions, as discussed further below.[172]

b. PJM's Long-Term Scenarios will be based on "best available data inputs"

PJM's proposed LTRTP Protocol embraces the Final Rule's desire to develop a long-term plan analyzing the seven Factor Categories set forth in the Final Rule. Through the procedures detailed below and in compliance with the Final Rule,[173] PJM will collect the best available data inputs likely to affect Long-Term Transmission Needs. As such, the data will be timely (not stale) and be examined and refined through an open and

[170] Order No. 1920 at P 413.

[171] Proposed Operating Agreement, Schedule 6-C, section 1.4.2(c).

[172] PJM's implementation of its proposed LTRTP Protocol will follow the Commission's expectations about how these factors are calculated and whether any have an additive effect. *See, e.g.*, Order No. 1920 at P 413 ("[W]e expect that similar factors (or groups of factors) affecting a single assumption used in the development of Long-Term Scenarios will have an additive effect on that assumption."). A description of how these factors are quantified and incorporated into the planning assumptions will appropriately be located in PJM's Manuals. The Commission understands that "study assumptions and parameters are likely to change over time as planners gain experience in implementing the new planning procedures. Thus, rigid specifications or formulas set out in the Tariff would likely lead to less reliable assessments due to the inability of planners to adapt to changing circumstances." *Sw. Power Pool, Inc.*, 136 FERC ¶ 61,050, at P 37; *see also Midcontinent Indep. Sys. Operator, Inc.*, 190 FERC ¶ 61,147, at P 23 (2025) ("it is beneficial for MISO to retain discretion—within Tariff boundaries—to improve study assumptions and parameters over time as it gains experience and learns from stakeholders. Rigid specification would hamper this discretion.").

[173] *See* Order No. 1920 at P 634 ("[W]e also adopt the NOPR proposal to require transmission providers in each transmission planning region to give stakeholders an opportunity to provide timely and meaningful input during each Long-Term Regional Transmission Planning cycle concerning which data inputs to use in Long-Term Scenarios."); *id.* at P 529 ("[O]pportunity to propose factors, provide information and identify sources of best available data, propose how a factor may affect Long-Term Transmission Needs, and explain how that factor could be reflected in the development of Long-Term Scenarios, including the extent to which it is appropriate to discount the effects of certain factors on Long-Term Transmission Needs."). The specific list of items that encompass meaningful input will be in the PJM Manuals. Stakeholders will be free to provide this feedback through TEAC meetings on initial assumptions, or earlier during the data gathering process under Proposed Operating Agreement, Schedule 6-C, section 1.4.2(b).

transparent stakeholder process, allowing for a diverse set of viewpoints and various expert perspectives to affect the ultimate data set used in developing the Long-Term Scenarios.

PJM embraces working with PARSEC and other stakeholders in gathering the data likely to affect Long-Term Transmission Needs. Accordingly, proposed Operating Agreement, Schedule 6-C, section 1.4.2 provides that PJM will collect and gather data in each of the Final Rule's seven Factor Categories. Proposed Operating Agreement, Schedule 6-C, section 1.4.2(a) requires PJM to "engage with [PARSEC], relevant Tribal authorities and local governmental bodies, Transmission Owners, and other relevant entities" to gather all information and data related to FERC-defined Factor Categories 1, 2, 3, and 7.[174] PJM will establish an "online portal or other suitable means" to provide additional channels for federal, Tribal, state, and local governmental bodies to send PJM any and all relevant information.[175] Through a portal or other suitable means, PJM will also post the items required by the Final Rule[176] after stakeholders and states have had the

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[174] As the Final Rule clarified, "factors in Factor Categories One, Two, Three, and Seven arise from stakeholder decision-making and legal processes that generally are external to the transmission provider and are therefore suitable for identification by the states and other stakeholders that govern or have authority over those processes." Order No. 1920-A at P 349.

[175] Proposed Operating Agreement, Schedule 6-C, section 1.4.2(a) ("Such engagement will include the ability for applicable federal, Tribal, state, and local bodies to send information to the Office of the Interconnection via an online portal or other suitable means as may be determined by the Office of the Interconnection. The Office of the Interconnection will also receive identification of the foregoing from any other interested stakeholder.").

[176] Order No. 1920 at P 528 (requiring posting of "(1) the list of the factors in each of the seven required categories of factors that they will account for in their Long-Term Scenarios; (2) a description of each factor that they will account for in their Long-Term Scenarios; (3) a general statement explaining how they will account for each of those factors in their Long-Term Scenarios; (4) a description of the extent to which they will discount any factors in Factor Categories Four through Seven in each Long-Term Scenario; and (5) a list of the factors that they considered but did not incorporate in their Long-Term Scenarios").

PJM's Manuals will specify the content of the postings, but these requirements are all encompassed in PJM's Proposed Operating Agreement, Schedule 6-C. For example, sections 1.4.2(c) and 1.4.4 address the stakeholder process and cover these topics. *See also* Proposed Operating Agreement, Schedule 6-C, section 1.5(a) ("Based on the feedback received in the processes set forth in sections 1.4.3 and 1.4.4 and its own analyses and engineering judgment, the Office of the Interconnection may accord different considerations of such data and information in each scenario, but may not discount any data inputs relating to the factors set forth in section 1.4.2(a)(1) through (3) above. The Office of the Interconnection shall publish a general opportunity to propose potential factors and provide input on how to account for specific factors, in compliance with the Final Rule.[177]

PJM's outreach to state and other governmental entities regarding these factor categories is reasonable and appropriate, and compliant with the Final Rule. As the Commission explained in the Final Rule, PJM is not independently obligated to gather all the data in the "first three categories of factors, which will include numerous federal, federally-recognized Tribal, state, and local laws and regulations, as well as integrated resource plans and expected supply obligations for load-serving entities," because that "would be unduly burdensome and potentially impractical."[178] Further, the Commission clarified in the Final Rule that "transmission providers should rely on the state in determining *how* to account for such a state-related factor when developing Long-Term Scenarios."[179]

With regard to the other Factor Categories, Operating Agreement, Schedule 6-C, proposed section 1.4.2(b) provides that PJM will "engage with" stakeholders "to gather other necessary data to develop the Long-Term Regional Transmission Plan, including but not limited to" the information required by Final Rule-defined Factor Categories 4, 5, 6, and 7. Gathering data related to these factors from non-governmental entities is reasonable, as the topics are not grounded in state actions but rather reflective of, among other things,

statement explaining how it will account for such data in the development of Long-Term Scenarios, including the extent to which it will discount any data inputs relating to the factors set forth in section 1.4.2(b)(1) through (4) above in each Long-Term Scenario, and list of the data input it considered but did not incorporate in the Long-Term Scenario development.").

[177] *See* Order No. 1920 at P 533 ("Transmission providers must post this information after stakeholders, including states, have had the meaningful opportunity to propose potential factors and to provide input on how to account for specific factors in the development of Long-Term Scenarios.").

[178] Order No. 1920 at P 508.

[179] Order No. 1920-A at P 345.

market trends in fuel, generator interconnections and retirements, and public utility policy goals. Notably, PJM will gather data on FERC-defined Factor Category 7 from both governmental entities and all other stakeholders, as this factor encompasses policy objectives of governments and utilities. Consistent with PJM's practice of transparency, PJM will provide such information and data "upon request, as necessary, pursuant to the appropriate protection of confidentiality provisions and [PJM's] Critical Energy Infrastructure Information process."[180]

All of these above processes comply with the Final Rule's requirement that transmission providers "provide an open and transparent process in their [Tariff] that provides stakeholders, including load-serving entities, with a meaningful opportunity to propose potential factors and to provide input on how to account for specific factors in the development of Long-Term Scenarios."[181]

However, PJM is not limiting its data collection to just the seven Factor Categories set forth in the Final Rule. Consistent with proposed Operating Agreement, Schedule 6-C, section 1.4.3(b), PJM "shall solicit" "information required by, or anticipated to be useful to" PJM in "preparation of the Long-Term Regional Transmission Plan study, including laws, policies, and other information regarding potential sensitivity studies, modeling assumption variations, scenario analyses, and other information for consideration."[182] Thus, PJM "may also gather other data and information that may be used in the development of the Long-Term Regional Transmission Plan. Such engagement may be

[180] Proposed Operating Agreement, Schedule 6-C, section 1.4.2(b).

[181] Order No. 1920 at PP 449, 528.

[182] Proposed Operating Agreement, Schedule 6-C, section 1.4.3(b).

informal and/or in accordance with TEAC stakeholder process."[183] As such, PJM will have the flexibility to use additional data and information beyond the data that falls within the Factor Categories defined in the Final Rule, and will do so in an open and transparent manner, consistent with its RTEP Protocol.[184]

3. *Consultation with PARSEC and stakeholders to develop Long-Term Scenario assumptions*

Once data and other relevant information are gathered in accordance with proposed Operating Agreement, Schedule 6-C, sections 1.4.2 and 1.4.3, PJM will set to work on developing the assumptions to be used in developing the Long-Term Scenarios.

PJM will not develop assumptions in isolation. Rather, consistent with its Order No. 1000-compliant RTEP Protocol, PJM will convene at least one (and more as needed) "initial assumptions meeting to be scheduled at the commencement of the Long-Term Regional Transmission Plan study process" with TEAC.[185] In addition, given the important role played by states in the development of the Long-Term Regional Transmission Plan,

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[183] Proposed Operating Agreement, Schedule 6-C, section 1.4.2(b).

[184] *See* Order No. 1920-A at P 331; Operating Agreement, Schedule 6, section 1.5.4(c) (RTEP Protocol provision allowing PJM to solicit "information required by, or anticipated to be useful to, the Office of the Interconnection in its preparation of the enhancement and expansion study"). In ruling on PJM's Order No. 890 compliance filings, the Commission found that PJM's RTEP Protocol met the order's "openness" and "transparency" principles. First Order No. 890 Compliance Order, 123 FERC ¶ 61,163, at P 28 (PJM "fulfilled the requirements of [the openness] principle by allowing for all affected parties to participate in the transmission planning process."); "Consistent with Order No. 890, PJM discloses to all customers and other stakeholders the basic criteria, assumptions, and data that underlie its transmission system plans" including its RTEP process plans. *Id*. at P 39. The Commission affirmed these principles in its Order No. 1000 compliance orders. First Order No. 1000 Compliance Order, 142 FERC ¶ 61,214, at PP 52-55 (finding the "openness" and "transparency" principles continued to be met in Order No. 1000). As discussed *infra* in section II.D (PJM will evaluate whether certain In-Kind Replacement Facilities can be "right-sized" to more efficiently or cost-effectively address a Long-Term Transmission Need.), additional data will include anticipated In-Kind Replacement Facility Needs as identified by each PJM Transmission Owner's Candidate In-Kind Facility Replacement Needs List.

[185] Proposed Operating Agreement, Schedule 6-C, section 1.4.4(a); *compare* Operating Agreement, Schedule 6, section 1.5.6(b) ("The Transmission Expansion Advisory Committee and the Subregional RTEP Committees shall each facilitate a minimum of one initial assumptions meeting to be scheduled at the commencement of the Regional Transmission Expansion Plan process.").

PJM will also meet with PARSEC,[186] including about the specific topics for consultation enumerated in the Final Rule.[187] Again, this engagement complies with the Final Rule's expectation that "transmission providers . . . work with states to ensure the way those state laws and regulations are incorporated into Long-Term Scenarios reflects states' preferred implementation of those laws and regulations."[188] Further, PJM's robust stakeholder process for developing the scenario assumptions is wholly compliant with the Final Rule's direction that "consistent with Order No. 890's transmission planning principles, we require transmission providers to give stakeholders a meaningful opportunity to provide timely input on how and what information to incorporate in Long-Term Scenarios, including how to account for a specific factor in terms of how the factor may affect Long-Term Transmission Needs."[189]

Indeed, as memorialized in the proposed LTRTP Protocol, the purpose of these "assumptions meetings [is] to provide an open forum to discuss inputs and methods to be used in the development of scenarios and sensitivities."[190] Such discussions with stakeholders and/or PARSEC may be broadened to "include other updates relevant to the

[186] Proposed Operating Agreement, Schedule 6-C, section 1.4.4(b).

[187] *See* Order No. 1920-A at P 344 ("[T]ransmission providers shall consult with Relevant State Entities and any other authorized entities as to whether a specific state policy must be accounted for as a factor within each category (i.e., if the specific state policy will likely affect Long-Term Transmission Needs), how to account for the specific state policy in the development of Long-Term Scenarios (e.g., the method and data used to forecast generation resources added because of a specific state policy), and how to adjust the treatment of the specific state policy across Long-Term Scenarios (e.g., assume certain policy-related outcomes materialize in some but not all Long-Term Scenarios).").

[188] Order No. 1920-A at P 299. *See also id.* at P 306 (requiring transmission providers to take states' "preferences" into account); *id.* at P 345 ("[T]ransmission providers should rely on the state in determining *how* to account for such a state-related factor. . . .").

[189] Order No. 1920 at P 529.

[190] Proposed Operating Agreement, Schedule 6-C, section 1.4.4(a).

development of the Long-Term Regional Transmission Plan."[191] Together, these processes comply with Final Rule's requirement to "publicly disclose . . . information and data inputs [used] to create each Long-Term Scenario" and "provide stakeholders an opportunity to provide timely and meaningful input into how Long-Term Scenarios are developed."[192] Any dispute resolution sought by the parties could be addressed under existing processes.[193]

Only after such meetings are held with TEAC and PARSEC, and in "consider[ation of] the advice and recommendations" received, will PJM "determine the range of assumptions to be used in the scenarios and studies."[194] Furthering its commitment to an open, transparent, and collaborative process, PJM will "document and publicly post its determination" regarding the assumptions used for the Long-Term Scenarios.[195]

4. Developing Long-Term Scenarios

With the foundational assumptions determined, PJM will "develop at least three Long-Term Scenarios," which will: "(1) be plausible and diverse; (2) utilize a 20-year transmission planning horizon; (3) reasonably represent probable future system needs; and (4) be based on best available data inputs."[196] The Final Rule also requires PJM to "develop

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[191] Proposed Operating Agreement, Schedule 6-C, sections 1.4.4(a) and (b) (same language).

[192] Order No. 1920 at P 560. *See also* Order No. 1920 at P 634 ("[W]e also adopt the NOPR proposal to require transmission providers in each transmission planning region to give stakeholders an opportunity to provide timely and meaningful input during each Long-Term Regional Transmission Planning cycle concerning which data inputs to use in Long-Term Scenarios.").

[193] *See* Order No. 1920 at P 634 ("[W]e clarify that the right to challenge data inputs via dispute resolution as discussed in Order No. 890 is available for interested parties with respect to data inputs that transmission providers develop for Long-Term Regional Transmission Planning."). Operating Agreement, section 16.5 (cross-referencing PJM Dispute Resolution Procedures in Operating Agreement, Schedule 5); Operating Agreement, Schedule 5.

[194] Proposed Operating Agreement, Schedule 6-C, section 1.4.4(c).

[195] Proposed Operating Agreement, Schedule 6-C, section 1.4.4(c).

[196] Proposed Operating Agreement, Schedule 6-C, section 1.5(a). As the Final Rule clarified, transmission providers "must plan for the entire duration of the 20-year transmission planning horizon," starting "at the

at least one extreme weather sensitivity and apply it to at least three Long-Term Scenarios."[197] Other sensitivities may be developed as well, as encouraged by the Final Rule.[198] Thus, PJM's LTRTP Protocol is structurally designed to produce at least three plausible and diverse Long-Term Scenarios, each of which is compliant with the Final Rule's directives.[199] Further, in each Long-Term Scenario, no one type of driver will be implemented in isolation; rather, all data and inputs will interact such that the Long-Term Scenarios, and their corresponding modeling and reliability and economic simulations, will reflect a combination of conditions and the resulting Long-Term Transmission Needs will be identified and addressed holistically based on all the information used to develop the Long-Term Scenarios.

To develop such compliant Long-Term Scenarios, proposed Operating Agreement, Schedule 6-C allows PJM to "utilize scenarios developed in prior near-term and long-term regional transmission plan study processes."[200] To do so, PJM must update such previously developed scenarios "with new data inputs, as necessary."[201] This is compliant with the Final Rule's finding that "transmission providers may develop the new Long-Term

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beginning of the Long-Term Regional Transmission Planning cycle" and ending "20 years from that date." Order No. 1920 at PP 346-347.

[197] Proposed Operating Agreement, Schedule 6-C, section 1.5(a). To be clear, this allows PJM to build a different sensitivity for each scenario. *See* Order No. 1920 at P 593 (requiring transmission providers "develop at least one sensitivity, applied to each Long-Term Scenario, to account for uncertain operational outcomes that determine the benefits of and/or need for transmission facilities during multiple concurrent and sustained generation and/or transmission outages due to an extreme weather event across a wide area").

[198] Proposed Operating Agreement, Schedule 6-C, section 1.2(b) (coordination with PARSEC will include "alternative sensitivity studies"); section 1.6 (PJM may use "sensitivity studies" in evaluating and identifying Long-Term Transmission Needs). *See* Order No. 1920 at P 597 ("We encourage transmission providers to assess the need to develop other sensitivities as part of Long-Term Regional Transmission Planning.").

[199] *See, e.g.*, Order No. 1920 at PP 507, 577; Order No. 1920-A at PP 3, 138-148, 224, 296, 303 (affirming seven categories), *id*. at P 296, but setting aside requirement to "incorporate corporate commitments in Factor Category Seven when developing Long-Term Scenarios," *id*. at P 303).

[200] Proposed Operating Agreement, Schedule 6-C, section 1.5(a).

[201] Proposed Operating Agreement, Schedule 6-C, section 1.5(a).

Scenarios either by crafting entirely new Long-Term Scenarios, or by updating the data inputs and factors of previously developed Long-Term Scenarios,"[202] and the requirement that transmission providers "update, as necessary, all data inputs each time they reassess and revise their Long-Term Scenarios."[203]

Regardless, when developing Long-Term Scenarios at the start of a Long-Term Regional Transmission Plan study cycle, PJM cannot simply rely on previously developed Long-Term Scenarios, but rather PJM will gather the best available data (as discussed above) and update any stale data and assumptions to reflect changes since the prior study was produced.[204] Such exercise necessarily involves reassessing the prior scenarios and/or studies and revising them based on updated data and information,[205] as the Commission allows.[206] In addition, PJM will need to review and ensure Long-Term Scenarios are developed taking into account the processes for coordinated regional transmission planning

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[202] Order No. 1920 at P 377.

[203] Order No. 1920 at P 633. *See also id.* at P 643 ("[W]e require transmission providers to update their data inputs at least once at the outset of each Long-Term Regional Transmission Planning cycle."). *See* Order No. 1920-A at P 256 ("We sustain the requirement that transmission providers in each transmission planning region reassess and revise the Long-Term Scenarios that they use in Long-Term Regional Transmission Planning at least once every five years.").

[204] Proposed Operating Agreement, Schedule 6-C, section 1.5(a) ("In developing Long-Term Scenarios, the Office of the Interconnection may utilize scenarios developed in prior near-term and long-term regional transmission plan study processes, updated with new data inputs, as necessary.").

[205] *See* Order No. 1920 at P 377 (requiring "transmission providers in each transmission planning region to reassess and revise the Long-Term Scenarios that they use in Long-Term Regional Transmission Planning at least once every five years"). In compliance with this requirement, PJM will "initiate a new Long-Term Regional Transmission Plan study process at least once every five years . . . ." Proposed Operating Agreement, Schedule 6-C, section 1.4.1. To clarify, PJM will reassess and revise Long-Term Scenarios once every 5 years by initiating a new study process at least once every 5 years.

[206] Order No. 1920 at P 380 ("[N]othing in this final rule prohibits transmission providers from updating the inputs used to inform Long-Term Scenarios during a Long-Term Regional Transmission Planning cycle.").

with PJM's neighbors,[207] just as PJM does in developing the Regional Transmission Expansion Plan.[208]

As previously stated, none of the data or information falling within the Final Rule's Factor Categories 1, 2, and 3 (i.e., section 1.4.2(a)(1) through (3)) will be discounted in developing each Long-Term Scenario.[209] That said, the Final Rule recognized that transmission providers (i) should have discretion to weigh one source of information more heavily over another,[210] and (ii) may rely on their expert judgment, with due justifications, and information provided to them through the process they establish to develop the Long-Term Scenarios,[211] under proposed Operating Agreement, Schedule 6-C, section 1.5(a). Thus, compliant with the Final Rule, PJM would be permitted to exercise its own engineering judgment, based on analyses and stakeholder feedback, to "accord different considerations of such data inputs in each scenario,"[212] even though no discounting of these Factor Categories in any of scenarios has been made.[213] PJM will publicly explain how it

[207] Proposed Operating Agreement, Schedule 6-C, section 1.4.5(b).

[208] *See* Operating Agreement, Schedule 6, section 1.5.5. While PJM's interregional long-term transmission planning compliance filings are not due until December 12, 2026, for SERTP coordination and June 14, 2027, for ISO-NE and NYISO coordination, it is reasonable and appropriate for PJM to account for the regional transmission planning processes in place in developing the Long-Term Regional Transmission Plan, as the interaction with neighboring systems affects the operation of PJM's transmission system and could affect Long-Term Transmission Needs. *See Building for the Future Through Electric Regional Transmission Planning and Cost Allocation*, Docket No. RM21-17-000, Notice of Extension of Time (May 23, 2025).

[209] *See* Order No. 1920 at P 440 ("[T]ransmission providers must account for and be consistent with, and not discount, factors in the first three categories of factors"); *id.* at P 507 ("[W]e require that each Long-Term Scenario account for and be consistent with, and not discount, factors in the first three categories of factors once the transmission providers have determined that such a factor is likely to affect Long-Term Transmission Needs.").

[210] Order No. 1920 at P 306.

[211] Order No. 1920-A at P 311.

[212] Proposed Operating Agreement, Schedule 6-C, section 1.5(a).

[213] Proposed Operating Agreement, Schedule 6-C, section 1.5(a) ("Based on the feedback received in the processes set forth in sections 1.4.3 and 1.4.4 and its own analyses and engineering judgment, the Office of the Interconnection may accord different considerations of such data inputs in each scenario, but may not discount any data inputs relating to the factors set forth in section 1.4.2(a)(1) through (3) above."). As the

will treat and account for data in the development of the Long-Term Scenarios, including "the extent to which it will discount any data inputs relating to the factors set forth in [Factor Categories 4, 5, 6, and 7] in each Long-Term Scenario, and list of the data inputs it considered but did not incorporate in the Long-Term Scenario development,"[214] in compliance with the Final Rule.[215]

Using the data gathered, PJM will employ industry best practices to develop the Long-Term Scenarios. One of the key best practices PJM intends to utilize is capacity expansion modeling to complement the PJM generation interconnection queue information. Capacity expansion modeling is an industry benchmark tool used to identify an anticipated least-cost mix of resources based on inputted assumptions of, among other things, cost, future demand, fuel prices, technology cost and performance, and governmental policies and regulations. Thus, through such modeling, PJM will identify the most economic resource mix, which "is the mix that minimizes system costs, i.e., the sum of investments and productions costs."[216]

As with the other tools used to develop Long-Term Scenarios, PJM will describe in the PJM Manuals how PJM will conduct capacity expansion modeling for each Long-Term

division between 1.4.2(a) and (b) envisions, state feedback will be particularly important. *See, e.g.*, Order No. 1920 at P 561 ("We strongly encourage states to participate actively in the development of Long-Term Scenarios, as well as in all other aspects of Long-Term Regional Transmission Planning.").

[214] Proposed Operating Agreement, Schedule 6-C, section 1.5(a).

[215] *See, e.g.*, Order No. 1920 at P 531 ("[T]ransmission providers must include a general statement explaining how they will account for each factor in their Long-Term Scenarios on the public portion of an OASIS or other public website."); *id.* at P 535 ("[W]e require transmission providers to publish on the public portion of an OASIS or other public website the factors that were considered but not accounted for in the development of Long-Term Scenarios.").

[216] September 2025 Whitepaper at 7. As noted, PJM understands that capacity expansion modeling is utilized by other Commission-regulated regional transmission planners, including MISO, ISO-NE, NYISO, and CAISO. Such widespread adoption is understandable given that the model is designed to examine the effects of energy policies (e.g., renewable portfolio standards) on the generation resource mix over the long-term.

Regional Transmission Plan cycle. Such details will implement the principles and framework of any Commission-accepted LTRTP Protocol for the PJM Region, consistent with the rule of reason.[217]

PJM illustrated in the September 2025 Whitepaper its proposed approach to using capacity expansion modeling to build the models PJM will use to develop Long-Term Scenarios.[218] At a high-level, PJM will use differing assumptions in the modeling process based on the assumptions underlying the Long-Term Scenario for which the modeling process applies. For example, if a scenario is based on a "low demand" assumption, the associated capacity expansion modeling would also employ a low demand assumption and its potentially associated factors.[219]

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[217] *See Sw. Power Pool*, 136 FERC ¶ 61,050, at PP 28, 34, 37 (clarifying "how SPP's ITP proposal meets the rule of reason" because the Tariff addresses "when and how cost-effectiveness will be conducted, leaving only the implementation details of the calculations to the ITP Manual." Thus, FERC found "the Tariff provides sufficient guidance on how the cost-effectiveness analysis will be conducted to satisfy the rule of the reason and that the implementation details of the cost-effectiveness analysis are properly included in the ITP Manual instead of the Tariff" because "some of the details are not 'realistically susceptible of specification[,]' such as the reliability benefits . . . ." *Id*. at PP 34, 37. Also, the Commission explained "study assumptions and parameters are likely to change over time as planners gain experience in implementing the new planning procedures;" therefore, "rigid specifications or formulas set out in the Tariff would likely lead to less reliable assessments due to the inability of planners to adapt to changing circumstances." *Id*. at P 37. Additionally, the Commission rejected commenters' arguments that the SPP Tariff only contained "broad categories of factors" and found that the proposed "Tariff provides sufficient detail of the factors to be considered in the cost-effectiveness analysis," thus, the "flexibility to develop the details of the cost-effectiveness analysis based on the factors listed in the Tariff as they gain experience with the ITP process does not give SPP unfettered discretion." *Id*. at P 28.); *MISO*, 123 FERC ¶ 61,164 at PP 42-43 (finding that MISO's Attachment FF "makes available the basic methodology, criteria, and processes used to develop transmission plans" because "not all rules and practices related to transmission service, or planning activities in particular, need to be codified in the transmission provider's [tariff]." Instead, "rules, standards and practices that relate to, but do not significantly affect, transmission service may be placed" in manuals; thus, transmission providers may "use a combination of tariff language in their [tariff] and a reference to planning manuals . . . to satisfy their planning obligations"); *MISO*, 190 FERC ¶ 61,147 at P 23 (explaining that while "the rule of reason requires some 'minimum' level of specification," MISO's Tariff revisions, which do not include the Loss-of-Load Expectation (LOLE) model in the Tariff, "exceed that minimum." Instead, permitting MISO's "discretion" as "beneficial" because it allows for the "improve[ment of] study assumptions and parameters over time as it gains experience and learns from stakeholders. Rigid specification would hamper this discretion.").

[218] *See* September 2025 Whitepaper at 7-8.

[219] *See* September 2025 Whitepaper at 7.

The policy and regulation inputs for PJM's modeling process would include those policies identified that fall within Final Rule-defined Factor Categories 1, 2, 3, and 7 (i.e., Operating Agreement, Schedule 6-C, sections 1.4.2(a) and (b)), as well as siting restrictions. PJM will model all information within Final Rule-defined Factor Categories 1, 2, and 3, without discounting, such that the "resulting modeled resource fleet will be fully consistent with those factors and meet the reliability criteria for resource adequacy of having no more than one loss of load event every 10 years due to insufficient capacity."[220] To be clear, however, PJM will not double count within the modeling process a policy that falls within multiple Factor Categories.[221]

Once the parameters for the initial draft Long-Term Scenarios are developed, PJM will post them on the PJM website for review, and they will be available subject to established procedures to maintain the protection of Critical Energy Infrastructure Information and other confidential information.[222] PJM will then review and discuss the scenarios with stakeholders (through TEAC) and with PARSEC. Interested entities "will be afforded the opportunity to provide feedback on the draft scenarios."[223]

5. *State-requested Long-Term Scenarios – not for cost allocation*

In addition to the three required Long-Term Scenarios, PJM may also develop one additional Long-Term Scenario to identify Long-Term Transmission Needs if formally requested to do so by PARSEC, assuming, as described below, such additional Long-Term

[220] *See* September 2025 Whitepaper at 7.

[221] *See* September 2025 Whitepaper at 7.

[222] Proposed Operating Agreement, Schedule 6-C, section 1.5(c).

[223] Proposed Operating Agreement, Schedule 6-C, section 1.5(c).

Scenario complies with the requirements for the development of Long-Term Scenarios.[224] Such requests must be made within 90 days from the initial assumptions meeting,[225] so that any PARSEC-requested and defined Long-Term Scenario can be used in the study process to identify needs and to allow PJM to preliminarily select projects within three years of the start of the cycle, as required by the Final Rule.[226]

PJM will develop such additional Long-Term Scenario using the assumptions specified by PARSEC and following PARSEC's recommendations as to whether and how certain data inputs should be considered differently than in any of the three Long-Term Scenarios developed by PJM.[227] However, proposed Operating Agreement, Schedule 6-C, section 1.5(b) makes clear that "to the extent such consideration of data or other [PARSEC]-specific directive would result in a Long-Term Scenario that does not meet the requirements of this Schedule 6-C, such scenario may not be used in the LTRTP Protocol for the purposes of identifying Long-Term Transmission Needs or selecting Long-Term Transmission Projects."[228] This use restriction is compliant with the Final Rule, which provides that "additional analyses that do not meet Order No. 1920's Long-Term Scenario requirements are not considered Long-Term Scenarios" and may not be used as such.[229]

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[224] Proposed Operating Agreement, Schedule 6-C, section 1.5(b).

[225] Proposed Operating Agreement, Schedule 6-C, section 1.4.4.

[226] To be clear, this additional Long-Term Scenario would be separate and distinct from the additional scenarios the Final Rule authorizes states to request "to inform the application of Long-Term Regional Cost Allocation Method(s) or the development of cost allocation methods through the State Agreement Process(es)." Order No. 1920-A at P 365. Any rules regarding the development of additional scenarios to inform cost allocation will be submitted in the PJM Transmission Owners' forthcoming compliance filing dedicated to cost allocation methods for Long-Term Transmission Projects. *See supra* section I.E (The scope of this compliance filing is informed by the allocation of filing rights between PJM and the PJM Transmission Owners).

[227] Proposed Operating Agreement, Schedule 6-C, section 1.5(b).

[228] Proposed Operating Agreement, Schedule 6-C, section 1.5(b).

[229] Order No. 1920-A at P 366 ("While transmission providers may conduct such additional analyses, additional analyses that do not meet Order No. 1920's Long-Term Scenario requirements are not considered

C. *PJM Will Study Scenarios and Identify Long-Term Transmission Needs*

1. *Developing Long-Term Regional Transmission Plan study models*

Following the development of the Long-Term Scenarios, PJM will develop Long-Term Regional Transmission Plan study models to identify Long-Term Transmission Needs. In order to study the scenarios, PJM will first build power flow, production cost, and other models necessary to analyze the Long-Term Scenarios.[230] These models will incorporate, among others, public policies, economic considerations, and resource adequacy considerations and will support analyses based on reliability, economic, operational performance, and other considerations.[231] The models may need to be modified to support sensitivity studies, modeling assumption variations and scenario analyses.[232]

Based on the long-term transmission planning study procedures (as will be detailed in the PJM Manuals), PJM will analyze these models to identify projected limitations on the Transmission System's physical, economic, and/or operational capability or performance. These identified limitations will then be screened to identify Long-Term Transmission Needs that may potentially require transmission solutions with a long lead time.[233] Identified Long-Term Transmission Needs will be determined based on reliability, economic, public policy, operational, and other screens which may include: (1) the

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Long-Term Scenarios as defined in Order No. 1920. In other words, transmission providers may not use any such additional analyses to identify Long-Term Transmission Needs, identify Long-Term Regional Transmission Facilities, or to meet the requirement that transmission providers estimate the costs and measure the benefits of Long-Term Regional Transmission Facilities for purposes of selection (i.e., to apply the transmission provider's selection criteria).").

[230] Proposed Operating Agreement, Schedule 6-C, section 1.6(a)(i).

[231] Proposed Operating Agreement, Schedule 6-C, section 1.6(a)(i).

[232] Proposed Operating Agreement, Schedule 6-C, section 1.6(a)(ii).

[233] As previously discussed, Long-lead Projects address reliability violations with a long lead time in the RTEP Protocol. *See supra* n.81.

magnitude and severity of the issue; (2) the voltage level of the transmission facility on which the issue would occur; (3) the conditions in which the issue arose in the analyses; (4) the concentration and number of the issues; (5) type and nature of the driver; and (6) expected evolution of the issue over the planning horizon.[234]

Once the Long-Term Regional Transmission Plan studies and analyses are complete, PJM will provide the results to both PARSEC and TEAC for review and feedback.[235] PJM also proposes to hold additional TEAC meetings to provide opportunities for feedback regarding the violations of reliability criteria and analyses of the economic and operational performance of the Transmission System identified in the Long-Term Regional Transmission Plan studies.[236] PJM will also provide updates on the status of the development of the Long-Term Regional Transmission Plan at the regularly scheduled meetings of TEAC.[237]

2. *Identifying Long-Term Transmission Needs*

a. Long-Term Transmission Needs will be reflective of multiple factors or drivers

The Final Rule requires transmission providers to identify Long-Term Transmission Needs.[238] PJM's proposal complies with this overarching requirement. As described, PJM's process and methodologies for developing Long-Term Scenarios and studying such scenarios are designed such that resolving any identified transmission need would address multiple drivers. Structurally, PJM's Long-Term Scenarios and studies will

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[234] Proposed Operating Agreement, Schedule 6-C, section 1.6(b).

[235] Proposed Operating Agreement, Schedule 6-C, section 1.6(c).

[236] Proposed Operating Agreement, Schedule 6-C, section 1.6(c).

[237] Proposed Operating Agreement, Schedule 6-C, section 1.6(c).

[238] *See* Order No. 1920 at P 224.

require reliability, economic, and policy inputs to interact and work together to affect transmission system needs. Among other things, (i) PJM will not discount the governmental laws and regulations within Factor Categories 1-3; (ii) the capacity expansion model will solve for the least-cost resource mix based on the realities of the system as shaped by such governmental policies—particularly as to the resource mix (including deactivations); and (iii) the studies will analyze the Long-Term Scenarios from various perspectives, including economic (e.g., production cost modeling), supporting analyses based on reliability, economic, operational performance, and other considerations. PJM's approach recognizes and reflects that governmental policies will shape and define the future transmission system for which PJM must plan to address.

Accordingly, PJM's proposal structurally prevents a siloed approach. The LTRTP Protocol precludes the identification of all purely reliability, economic, or public policy transmission needs reflective of "a more siloed approach to regional transmission planning that is misaligned with our Long-Term Regional Transmission Planning reforms . . . ."[239] Rather, PJM's approach for identifying Long-Term Transmission Needs is motivated by the pursuit of identifying and addressing multiple drivers, leading to a more efficient holistic transmission planning process.

Indeed, given PJM's approach, no Long-Term Transmission Need could be considered wholly influenced or addressing one driver, such as reliability, economic, or policy based drivers. The governmental laws and regulations would have shaped the resource mix studied; thus, any project addressing a long-term reliability need would be furthering the policies supporting that resource mix and will likely offer economic benefits.

[239] Order No. 1920 at P 1474.

Because transmission congestion is highly correlated with (and often a precursor of) reliability issues, resolving a reliability need would have the correlative effect of reducing congestion and thereby providing economic benefit. Capacity expansion modeling further ensures that the approach is multi-driver in nature. As discussed, capacity expansion modeling allows PJM to study the transmission system based on a least-cost mix of capacity resources consistent with the resource adequacy 1-in-10 requirement. The capacity expansion model is also reflective of forecasted load growth and effects of state policies, such as Renewable Portfolio Standards and those that can directly lead to deactivations.[240] As part of the LTRTP Protocol process, PJM will vet and validate the assumptions and the results of capacity expansion modeling with stakeholders, leveraging their expert and diverse opinions. By utilizing capacity expansion modeling in the methodology for identifying Long-Term Transmission Needs, PJM will plan for those Long-Term Transmission Needs that facilitate more efficient operation of the system as a whole.[241]

[240] PJM intends to model deactivations resulting from the "command and control" policies—i.e., where a direct link can be determined (as may be under Illinois's Climate and Equitable Jobs Act), but not subjectively-driven policies (e.g., the Regional Greenhouse Gas Initiative (RGGI) emissions reduction initiatives). Within that framework and compliant with the Final Rule, s*ee* Order No. 1920 at PP 432-437, 440-442, 447-449, 481-484; Order No. 1920-A at PP 144-146, 156, 242, 271, 275, 296, 299, 306, PJM will provide the states opportunities to weigh in on how to interpret their own policies. *See* Order No. 1920-A at P 193 ("[T]ransmission providers must consult with and consider the positions of the Relevant State Entities as to how to account for factors related to state public policies in Long-Term Regional Transmission Planning assumptions."); *id.* at P 299 ("[W]e expect transmission providers to work with states to ensure the way those state laws and regulations are incorporated into Long-Term Scenarios reflects states' preferred implementation of those laws and regulations.").

[241] To be clear, PJM would not be planning the resources for the transmission system. Rather, the capacity expansion modeling simulates a projected resource mix based on inputted assumptions.

b. For purposes of project selection, PJM will distinguish between Core LT Needs and Additional LT Needs

While Long-Term Transmission Needs generally reflect multiple types of drivers, PJM's proposal includes two subsets of Long-Term Transmission Needs:

- Core LT Needs – those needs "associated with maintaining system reliability as determined by the following model inputs: projected transmission system topology; forecasted future demand, including load growth and firm transmission commitments; projected generation resource deactivations and additions; and a generation resource mix capable of meeting applicable reliability criteria."[242] Core LT Needs thus must be addressed to ensure reliability and other system needs; and

- Additional LT Needs are those needs that are more influenced by the additional drivers which could be different or go beyond those needed to support system reliability.[243]

As discussed in detail below, distinguishing between the two types of Long-Term Transmission Needs allows PJM to develop the All-in-One Plan by applying the different PARSEC-requested selection criteria for Core LT Needs and Additional LT Needs. Namely, Long-Term Transmission Projects that address Core LT Needs must, as a portfolio, meet a 1:1 benefit-to-cost ratio. However, Long-Term Transmission Projects (which may be composed of a cluster of inter-related enhancements or expansions of the Transmission System) that address Additional LT Needs in whole or in part must, on an individual project basis, meet a 1.25:1 benefit-to-cost ratio. PJM has adopted both of these PARSEC-developed benefit-to-cost ratios for selecting Long-Term Transmission Projects into the Long-Term Regional Transmission Plan.

[242] Proposed Operating Agreement, Schedule 6-C, section 1.6.2(a).

[243] Proposed Operating Agreement, Schedule 6-C, section 1.6.2(a).

Once PJM identifies and classifies the Long-Term Transmission Needs, PJM will post for review and comment:

> (i) all Long-Term Transmission Needs identified in the Long-Term Regional Transmission Plan study;
>
> (ii) whether such needs are classified as Core LT Needs or Additional LT Needs;
>
> (iii) the information related to each need as described further in section 1.8(b);[244] and
>
> (iv) whether a Right-Sized Replacement Facility may address a posted Long-Term Transmission Need as described further in section 1.7. For each Long-Term Transmission Need that may be addressed through right-sizing an In-Kind Replacement Facility pursuant to section 1.7, the Office of the Interconnection will post for informational purposes the Long-Term Transmission Need, the relevant In-Kind Replacement Facility, the identified Right-Sized Replacement Facility, and any incidental system impacts caused by the Right-Sized Replacement Facility that would need to be addressed.[245]

As memorialized in the proposed LTRTP Protocol, PJM will review such posted material with TEAC and PARSEC. PJM will "receive feedback on such postings prior to opening the proposal window" and PJM "shall provide" TEAC and PARSEC "an opportunity to comment on the classification of Core LT Needs and Additional LT Needs."[246]

PJM's classification of the Long-Term Transmission Needs as Core LT Needs and Additional LT Needs is compliant with the requirements of the Final Rule.[247] As described,

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[244] Proposed Operating Agreement, Schedule 6-C, section 1.8(b) requires posting "all Long-Term Transmission Need information, including the studies for each Long-Term Scenario, a recommended set of Long-Term Transmission Needs to be addressed classified into Core LT Needs and Additional LT Needs, the system conditions considered, and policy requirements, including federal, state, Tribal, and local policy objectives."

[245] Proposed Operating Agreement, Schedule 6-C, section 1.6.2(c).

[246] Proposed Operating Agreement, Schedule 6-C, section 1.6.2(c).

[247] *See* Order No. 1920 at PP 39, 299 (defining Long-Term Transmission Needs as "transmission needs identified through Long-Term Regional Transmission Planning by, among other things . . ., running scenarios and considering the enumerated categories of factors.").

PJM will identify all Long-Term Transmission Needs based on Long-Term Scenarios that allow for multiple types of drivers (e.g., policy, economic, reliability needs) to identify each need. While primarily driven by maintaining system reliability, Core LT Needs will, as detailed above, also encompass economic and policy needs.[248] This complies with the Final Rule's requirement that "the identification of Long-Term Transmission Needs should rely on economic and reliability drivers."[249] Indeed, PJM expects reliability, policy, and economic benefits to largely overlap, which is consistent with other regional transmission organizations' experiences with long-term planning and PJM's own findings from its Long-Term Regional Transmission Planning Workshop Policy Study.[250] By contrast, PJM proposes to define Additional LT Needs as "any Long-Term Transmission Need identified in the Long-Term Regional Transmission Plan study that is not classified as a Core LT Need."[251] Thus, PJM's proposal complies with the Final Rule's requirement that "the identification of Long-Term Transmission Needs should rely on economic and reliability drivers."[252]

While PJM's proposed LTRTP Protocol is compliant with the requirements of the Final Rule, PJM's classification of Long-Term Transmission Needs is in fact superior to the approach contemplated by Final Rule, because it supports PJM's mandatory selection

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[248] Proposed Operating Agreement, Schedule 6-C, section 1.6.2(a).

[249] Order No. 1920-A at P 223.

[250] The Long-Term Regional Transmission Planning Workshop Study ("Workshop Study"), which PJM presented to PARSEC and other stakeholders in 2024, included a case study that demonstrated how a capacity expansion model could be used to develop a Long-Term Scenario. The Workshop Study described PJM's underlying assumptions, reliability and economic analyses, and identification of corresponding needs. The case study also accounted for the seven Factor Categories required by Order No. 1920. *See* September 2025 Whitepaper at 8 (describing the Workshop Study).

[251] Proposed Operating Agreement, Schedule 6-C, section 1.6.2(b); *id.*, Definitions A-B (defining Additional LT Needs).

[252] Order No. 1920-A at P 223.

criteria for Long-Term Transmission Projects that address Core LT Needs and whose selection is timely, appropriate, and beneficial to the PJM system.[253]

For Long-Term Transmission Projects that address Core LT Needs, such projects must be, collectively and on a portfolio basis, net beneficial, i.e. have a benefit-to-cost ratio greater than or equal to 1:1, whereas for Long-Term Transmission Projects that address Additional LT Needs, such projects must have a benefit-to-cost ratio greater than or equal to 1.25, either as an individual project or as a group of multiple projects (because an additional need may require multiple components or projects to satisfy its need).

PJM's proposed Long-Term Transmission Need classification accounts for the fact that Long-Term Transmission Projects addressing Additional LT Needs influenced by economic and policy initiatives inherently carry a higher level of uncertainty from a benefits perspective and thus require a higher benefit-to-cost ratio compared to Core LT Needs for project screening and selection purposes. The Commission follows a similar rationale in requiring a benefit-to-cost ratio of 1.25:1 for economic-based projects under Order No 1000.[254] Such a classification along with other selection criteria, strikes the proper balance to enable PJM, PARSEC, and other stakeholders to best determine what Long-Term Transmission Projects are timely, appropriate, and beneficial to the Transmission System, with the goal of maximizing benefits to consumers relative to costs without over-building.

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[253] Order No. 1920-A at P 906 ("[C]onsistent with findings in Order No. 890, the Commission will continue to apply the 'consistent with or superior to' standard in the context of transmission planning.").

[254] Order No. 1000 at P 648 ("[R]equiring that a benefit to cost ratio, if adopted, not exceed 1.25 to 1" without Commission approval.).

D. PJM Will Evaluate Whether Certain In-Kind Replacement Facilities Can Be "Right-Sized" to More Efficiently or Cost-Effectively Address a Long-Term Transmission Need.

The Final Rule requires transmission providers to evaluate whether transmission facilities operating at or above a specified kV threshold that an individual transmission owner anticipates replacing in-kind with a new facility during the next 10 years can be "right-sized" to more efficiently or cost-effectively address regional transmission needs identified in the Long-Term Regional Transmission Plan.[255]

As a first step, the Final Rule requires transmission owners to submit in-kind replacement estimates for use in the LTRTP Protocol at a point "sufficiently early" in the cycle.[256] The transmission provider will then use those in-kind replacement estimates to determine if In-Kind Replacement Facilities could be right-sized to more efficiently or cost-effectively address a Long-Term Transmission Need.[257] If a right-sized replacement transmission facility addresses the transmission owner's need to replace an existing transmission facility, meets the applicable selection criteria, and is found to be the more

[255] Order No. 1920 at P 1678. The Final Rule defines "right-sizing" as "the process of modifying a transmission provider's in-kind replacement of an existing transmission facility to increase that facility's transfer capability." *See also* Order No. 1920-A at P 880 (sustaining the definition of "right-sizing" in Order No. 1920 at P 1678). A "right-sized replacement transmission facility is a new transmission facility that: (1) would meet the need to replace an existing transmission facility that a transmission provider has identified in its in-kind replacement estimate as one that it plans to replace with an in-kind replacement transmission facility while also addressing a Long-Term Transmission Need; (2) results in more than an incidental increase in the capacity of an existing transmission facility that a transmission provider has identified for replacement in its in-kind replacement estimate; and (3) is located in the same general route as, and/or uses or expands the existing rights-of-way of, the existing transmission facility that a transmission provider has identified for replacement in its in-kind replacement estimate." Order No. 1920 at P 1679.

[256] Order No. 1920 at PP 1677, 1681. The Final Rule defines "in-kind replacement estimates" as "estimates of the transmission facilities operating at and above the specified kV threshold that an individual transmission provider that owns the transmission facility anticipates replacing in-kind with a new transmission facility during the next 10 years." Order No. 1920 at P 1677.

[257] *See* Order No. 1920 at P 1681 ("[I]t is at this stage of the right-sizing reform where transmission providers must use the in-kind replacement estimates to determine if in-kind replacement transmission facilities could be right-sized to more efficiently or cost-effectively address a Long-Term Transmission Need(s).").

efficient or cost-effective solution to a Long-Term Transmission Need, the Final Rule requires that the right-sized replacement transmission facility must be considered for selection.[258]

The Final Rule also requires the establishment of a federal right of first refusal for a right-sized replacement transmission facility that is selected to meet Long-Term Transmission Needs.[259] The Final Rule found that requiring a federal right of first refusal for right-sized replacement transmission facilities will promote the consideration of more efficient or cost-effective potential transmission solutions to address long-term needs, particularly when compared against the alternative of piecemeal development of in-kind replacement transmission facilities.[260]

PJM's proposed LTRTP Protocol incorporates these requirements to allow for modification of in-kind replacements, where appropriate, to more efficiently or cost-effectively meet Long-Term Transmission Needs. As an initial matter, PJM proposes to define "Right-Sized Replacement Facility" as a Long-Term Transmission Project that (i) is identified by PJM through the Long-Term Regional Transmission Plan study process; (ii) addresses an In-Kind Replacement Facility Need[261] as identified by a Transmission

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[258] *See* Order No. 1920 at P 1681.

[259] *See* Order No. 1920 at P 1702; Order No. 1920-A at P 882.

[260] *See* Order No. 1920-A at P 882. The Final Rule clarified that an "in-kind replacement transmission facility" is a new transmission facility that (i) replaces an existing transmission facility identified as needing to be replaced; (ii) would result in no more than an incidental increase in capacity over the existing facility; and (iii) is located in the same general route and/or uses existing rights-of-way. Order No. 1920 at P 1678.

[261] PJM understands that the PJM Transmission Owners have proposed to define "In-Kind Replacement Facility Need" as "the need to replace a Transmission Facility identified by a Transmission Owner pursuant to this Attachment M-5 that the Transmission Owner anticipates replacing in the next 10 years and that meets the following criteria: (i) is transmission line operating above 200 kV or a transformer, the high side of which operates above 200 kV and the low side of which is not connected to distribution facilities; (ii) would result in no more than an Incidental Increase in transmission capacity; (iii) is located on the Transmission Owner's same general right-of-way or uses/expands an existing right-of-way; and (iv) if not addressed under Attachment M-5, would meet the definition of an Attachment M-3 Project as defined in Tariff, Attachment M-3, section (b)(2)." As explained below, because In-Kind Replacement Facility Needs must

Owner pursuant to Tariff, Attachment M-5; (iii) meets a Long-Term Transmission Need; (iv) results in more than an incidental increase in capacity compared to the existing transmission facility causing the In-Kind Replacement Facility Need; and (v) is located in the same general right-of-way or uses or expands an existing right-of-way of the existing transmission facility.[262] This definition aligns with the Commission's clarifications regarding right-sized replacement transmission facilities in the Final Rule.[263]

The right-sizing process begins with the supply of data. Prior to developing the Long-Term Scenarios (i.e., in Year one of the study cycle), each Transmission Owner will be required to provide PJM with a Candidate In-Kind Replacement Facility Needs List[264] composed of anticipated In-Kind Replacement Facility Needs.[265] This timing complies with the "sufficiently early" requirement in the Final Rule.[266] Following the scenario analysis to identify the Long-Term Transmission Needs, but prior to posting of those needs,

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be identified by each Transmission Owner, the terms "In-Kind Replacement Facility Need" and "Candidate In-Kind Replacement Facility Needs List" will be formally defined in Tariff, Attachment M-5, which will be filled by the PJM Transmission Owners.

[262] Operating Agreement, section 1, Definitions Q-R (defining Right-Sized Replacement Facility).

[263] Order No. 1920 at P 1679.

[264] PJM understand that PJM Transmission Owners have proposed to define "Candidate In-Kind Replacement Facility Needs List" in proposed Tariff, Attachment M-5, section (c)(1) ("At the beginning of each Long-Term Regional Transmission Plan study cycle, each Transmission Owner shall provide to the Office of the Interconnection a Candidate In-Kind Replacement Facility Needs List comprising its non-public confidential, non-binding projection of up to 10 years of In-Kind Replacement Facility Needs that it has identified pursuant to the Transmission Owner's processes for identification of In-Kind Replacement Facility Needs. Transmission Owners may update their Candidate In-Kind Replacement Facility Needs List throughout the Long-Term Regional Transmission Plan study cycle and provide to the Office of the Interconnection an explanation for such update(s). Any Candidate In-Kind Replacement Facility Needs List provided to the Office of the Interconnection, including any updates provided during the Long-Term Regional Transmission Plan study cycle, shall remain confidential within PJM, except as provided in this Tariff, Attachment M-5, section (c)(2)").

[265] Proposed Operating Agreement, Schedule 6-C, section 1.4.3(a).

[266] *See* Order No. 1920 at PP 1677, 1683. While the Candidate In-Kind Replacement Facility Needs List will be provided initially at this stage of the process, Transmission Owners may also provide updated estimates of In-Kind Replacement Facilities throughout the Long-Term Regional Transmission Plan study cycle. *See* Proposed Operating Agreement, Schedule 6-C, sections 1.4.3(a), 1.7(a).

PJM will meet with each Transmission Owner individually to review the identified Long-Term Transmission Needs and the Candidate In-Kind Replacement Facility Needs List.[267] PJM will then evaluate the In-Kind Replacement Facility Needs against the Long-Term Transmission Needs to evaluate whether any Long-Term Transmission Need can be addressed through a Right-Sized Replacement Facility.[268] To promote transparency, PJM will then identify for TEAC any identified Right-Sized Replacement Facilities, and explain its conclusions.[269]

Next, as discussed in further detail in section II.E.1 (PJM posting of Long-Term Transmission Needs and other information), PJM will post, for informational purposes, Long-Term Transmission Needs information prior to opening the competitive transmission proposal window, including any identified Long-Term Transmission Needs that can be addressed by a Right-Sized Replacement Facility.[270] For each Long-Term Transmission Need that may be addressed through right-sizing an existing facility that is creating an In-Kind Replacement Facility Need, PJM will post for informational purposes (i) the Long-Term Transmission Need, (ii) the relevant In-Kind Replacement Facility Need, (iii) the identified Right-Sized Replacement Facility, and (iv) any incidental system impacts caused by the Right-Sized Replacement Facility that would need to be addressed.[271] The public

[267] Proposed Operating Agreement, Schedule 6-C, section 1.7(a). PJM understands that the voltage threshold for facilities to be included in the Candidate In-Kind Replacement Facility Needs List will not exceed 200 kV, and will be set forth in revisions to Tariff, Attachment M-5, to be filed by the PJM Transmission Owners. *See* Order No. 1920 at P 1677 (requiring transmission providers propose a threshold that does not exceed 200kV for right-sizing reforms).

[268] Proposed Operating Agreement, Schedule 6-C, section 1.7(a). Compliant with the Final Rule's guidance regarding alternative transmission technologies, the determination of any Right-Sized Replacement Facility will consider all viable transmission technologies, including alternative transmission technologies.

[269] Proposed Operating Agreement, Schedule 6-C, section 1.7(a).

[270] Proposed Operating Agreement, Schedule 6-C, section 1.8(b).

[271] Proposed Operating Agreement, Schedule 6-C, section 1.8(b).

and transparent nature of this posting also complies with the Final Rule's requirement that "once the transmission providers have determined, as part of Long-Term Regional Transmission Planning, that an in-kind replacement transmission facility can be right-sized to constitute a right-sized replacement transmission facility, ... transmission providers must make public the underlying in-kind replacement transmission facility."[272]

Importantly, any identified Right-Sized Replacement Facility will be evaluated in the same manner as any other proposal submitted in the competitive window to address a Long-Term Need, including potentially modifying the Right-Sized Replacement Facility to best address the posted Long-Term Transmission Needs in a more efficient or cost-effective manner,[273] in compliance with the Final Rule.[274] This means that identified Right-Sized Replacement Facilities are reviewed and evaluated based on the same comparative analyses that PJM will use for all proposed solutions in order to identify the more efficient or cost-effective set of solutions to address Long-Term Transmission Needs. Right-Sized Replacement Facilities will also be considered for selection in the same way as other proposals, in compliance with the Final Rule.[275]

Finally, proposed section 1.7(b) provides that "[a] Transmission Owner that is the owner of the existing asset that has been identified and selected to be a Right-Sized

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[272] Order No. 1920 at P 1736.

[273] Proposed Operating Agreement, Schedule 6-C, sections 1.8(b), 1.8(c)(7)(i)-(ii).

[274] Order No. 1920 at P 1681 ("[I]f transmission providers identify a right-sized replacement transmission facility as a potential solution to a Long-Term Transmission Need as part of Long-Term Regional Transmission Planning, that right-sized replacement transmission facility must be evaluated in the same manner as any other proposed Long-Term Regional Transmission Facility to determine whether it is the more efficient or cost-effective transmission facility to address the transmission need.").

[275] Order No. 1920 at P 1681 ("If a right-sized replacement transmission facility addresses the transmission provider's need to replace an existing transmission facility, meets the applicable selection criteria included in Long-Term Regional Transmission Planning, and is found to be the more efficient or cost-effective solution to a Long-Term Transmission Need, then the right-sized replacement transmission facility must be considered for selection.").

Replacement Facility shall be designated to construct and own or finance any facilities identified and selected as a Right-Sized Replacement Facility."[276] Thus, as required by the Final Rule,[277] and complementary to the PJM Transmission Owners' proposed Tariff, Attachment M-5, PJM's proposal provides a federal right of first refusal for the Transmission Owner in the Zone in which a Right-Sized Replacement Facility is to be located to construct and own or finance those facilities.[278]

E. Consistent with its Current Order No. 1000-Compliant Regional Transmission Planning Process, PJM Will Administer a Competitive Solicitation for Project Proposals and Will Require That Proposals Demonstrate Consideration of Alternative Transmission Technologies.

The Final Rule requires transmission providers to "make clear in their [tariffs] the point in the Long-Term Regional Transmission Planning evaluation process at which they will accept Long-Term Regional Transmission Facility proposals from stakeholders, including Nonincumbent Developers."[279]

As described below, PJM proposes to comply with this directive through administering a competitive solicitation process that is generally consistent with the process that PJM currently employs pursuant to its Order No. 1000-compliant RTEP Protocol. PJM will post Long-Term Transmission Needs and other related information, administer a competitive solicitation process, invite project sponsors to submit proposals to address the posted Long-Term Transmission Needs, require alternative transmission

[276] Proposed Operating Agreement, Schedule 6-C, section 1.7(b).

[277] Order No. 1920 at PP 1677, 1702.

[278] Proposed Operating Agreement, Schedule 6-C, proposed section 1.7(b) ("A Transmission Owner that is the owner of the existing asset that has been identified and selected to be a Right-Sized Replacement Facility shall be designated to construct and own or finance any facilities identified and selected as a Right-Sized Replacement Facility.").

[279] Order No. 1920 at P 955.

technologies be considered as part of such proposals, and review all such proposals to identify the more efficient or cost-effective solution to address the posted needs.

1. PJM posting of Long-Term Transmission Needs and other information

As part of the Long-Term Regional Transmission Plan cycle—and after PJM and the PJM Transmission Owners have reviewed the PJM Transmission Owners' Candidate In-Kind Replacement Facility Needs Lists and determined which Long-Term Transmission Needs can be addressed through right-sizing[280]—identified needs are posted on PJM's website[281] and subject to an open competitive solicitation window.[282] During the solicitation window, PJM will accept proposals from both incumbent Transmission Owners and Nonincumbent Developers,[283] as required by the Final Rule.[284]

Like with PJM's currently effective RTEP Protocol, incumbent Transmission Owners and Nonincumbent Developers must pre-qualify to be eligible to be a Designated

[280] *See supra* section II.D (PJM will evaluate whether certain In-Kind Replacement Facilities can be 'right-sized' to more efficiently or cost-effectively address a Long-Term Transmission Need.).

[281] Proposed Operating Agreement, Schedule 6-C, section 1.8(b).

[282] Proposed Operating Agreement, Schedule 6-C, section 1.8(c) ("The Office of the Interconnection shall provide notice to stakeholders of a 120 to 180-day proposal window for *all* posted Long-Term Transmission Needs.") (emphasis added).

[283] Proposed Operating Agreement, Schedule 6-C, section 1.8(c).

[284] *See* Order No. 1920 at P 955.

Entity.[285] The procedures for pre-qualification are the same as in the RTEP Protocol.[286] Duplication of the pre-qualification process in the LTRTP Protocol will facilitate greater participation in the window by reducing administrative burden and shortening the process because prequalification under OA, Schedule 6 will automatically qualify for prequalification under OA, Schedule 6-C, and vice versa (i.e., entities that prequalify be a Designated Entity for a Long-Term Transmission Project will also be eligible to be prequalified to be a Designated Entity for a project awarded as part of a competitive window conducted pursuant to the RTEP Protocol, and entities that prequalify to be a Designated Entity for a project awarded as part of a competitive window conducted pursuant to the RTEP Protocol will also be prequalified to be a Designated Entity for a Long-Term Transmission Project).

As proposed Schedule 6-C explains, PJM will publicly post the following at the beginning of the proposal window:[287]

- all Long-Term Transmission Need information, including the studies for each Long-Term Scenario;
- the recommended set of Long-Term Transmission Needs to be addressed, classified into Core LT Needs and Additional LT Needs, along with any

[285] Proposed Operating Agreement, Schedule 6-C, section 1.8(a); Operating Agreement, Schedule 6, section 1.5.8(a). As PJM explained in its Order No. 1000 compliance proceeding, pre-qualification criteria assure that the Nonincumbent Developer or incumbent Transmission Owner has the expertise and financial resources to develop, construct, own, operate, and maintain transmission facilities to be included in the regional plan for purposes of regional cost allocation. First Order No. 1000 Compliance Order, 142 FERC ¶ 61,214, at P 270 (describing PJM reasoning); *id.* at P 276 ("[W]e find that the qualification criteria proposed by PJM, as clarified and modified below, are not unduly discriminatory or preferential. The proposed criteria in section 1.5.8(a) of Schedule 6 provide PJM with information to determine whether an entity is generally qualified to develop, construct, maintain and operate a transmission facility, while the proposed criteria in section 1.5.8(c) provide PJM with information to determine whether an entity is qualified to develop, construct, maintain and operate a specific transmission facility."); Second Order No. 1000 Compliance Order, 147 FERC ¶ 61,128, at P 211 (finding that PJM's proposed qualification criteria, as clarified and modified, comply with the first compliance order).

[286] Proposed Operating Agreement, Schedule 6-C, section 1.8(a) (referencing the procedures in Operating Agreement, Schedule 6, section 1.5.8(a)).

[287] Proposed Operating Agreement, Schedule 6-C, section 1.8(b).

Long-Term Transmission Needs that may be addressed through identified Right-Sized Replacement Facilities posted for informational purposes only (and the associated identified Right-Sized Replacement Facilities);[288]

- the system conditions considered;[289] and
- policy requirements, including federal, state, Tribal, and local policy objectives.[290]

All identified Core and Additional LT Needs will be included in one competitive window for the holistic development of transmission solutions that address both types of needs in a more efficient or cost-effective manner. The two sets of Long-Term Transmission Needs will be addressed holistically, taking into account identified opportunities for right-sizing of existing facilities and rights-of-way.[291] Because both sets of Long-Term Transmission Needs are addressed together in the same solicitation window, it is possible—and even anticipated—that a proposal could address Core LT Needs and demonstrably more efficiently or cost-effectively address all or parts of the Additional LT Needs, even if the proposal is primarily submitted for the purpose of addressing one or more Core LT Needs.

Additionally, PJM "shall post an explanation regarding why certain Long-Term Transmission Needs, if any, were identified but were not to be addressed through proposals, including whether such needs were determined to be more appropriately

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[288] *Supra* section II.C (PJM will study scenarios and identify Long-Term Transmission Needs).

[289] The system conditions considered include, for example, load levels, transfer levels, fuel costs, the level and type of generation, generation patterns, demand response, and uncertainties arising from estimated times to construct transmission upgrades. These examples are drawn from Operating Agreement, Schedule 6, section 1.5.3 and are illustrative only.

[290] PJM posts similar information for conducting its competitive window through the RTEP Protocol. While each planning process has its own methodology for evaluating submitted proposals, PJM will, just as for the RTEP Protocol's window, detail in the window's scope documents and posted materials (describing the window assumptions, objectives, and evaluation criteria) the transmission needs and proposal expectations.

[291] Proposed Operating Agreement, Schedule 6-C, section 1.8(b).

addressed in a different planning process or through subsequent Long-Term Regional Transmission Planning cycle."[292] PJM will explain why it decided not to post for solutions a Long-Term Transmission Need identified in the Long-Term Regional Transmission Plan studies, an approach consistent with PJM's existing procedure in the RTEP Protocol.[293] This is one piece of PJM's broader effort to ensure transparency in the evaluation and selection processes.[294]

2. Submission of project proposals to address Long-Term Transmission Needs

Following the opening of a competitive window, Transmission Owners and Nonincumbent Developers will have the opportunity to submit proposals addressing the posted Long-Term Transmission Needs.[295]

PJM expects that competitive windows to solicit solutions to Long-Term Transmission Needs will be significantly longer than the competitive windows currently used in PJM's existing Order No. 1000 planning processes due to the inherent complexity of long-term planning. As Proposed Schedule 6-C explains, PJM "shall provide notice to stakeholders of a 120 to 180-day proposal window" for all posted Long-Term Transmission Needs.[296] Under the proposed framework, PJM may shorten or lengthen a proposal

[292] Proposed Operating Agreement, Schedule 6-C, section 1.8(b).

[293] *See* Operating Agreement, Schedule 6, section 1.5.8(b) ("The Office of the Interconnection also shall post an explanation regarding why transmission needs associated with federal or state Public Policy Requirements were identified but were not selected for further evaluation.").

[294] Order No. 1920 at P 954 (requiring "that transmission providers' evaluation of transmission facilities must culminate in a determination that is sufficiently detailed for stakeholders to understand why a particular Long-Term Regional Transmission Facility (or portfolio of such Facilities) was selected or not selected"). *See also infra* section V (Stakeholder participation and transparency provisions and compliance with transmission planning principles) (collecting transparency and stakeholder participation provisions).

[295] Proposed Operating Agreement, Schedule 6-C, section 1.8(c).

[296] Proposed Operating Agreement, Schedule 6-C, section 1.8(c).

window that is not yet open under certain conditions.[297] For example, before the proposal window opens, a window may be shortened if the needs to be addressed are straightforward and lack complexity, or it may be lengthened if PARSEC formally requests an additional Long-Term Scenario. Separately, if a proposal window is already open, PJM may extend it based on the reasons specified in proposed Schedule 6-C, section 1.8(c),[298] subject to a public notice posted on PJM's website.

Proposed Schedule 6-C, sections 1.8(c)(1) through (c)(8) specifies the rules and requirements to which the proposals must adhere, including proposal content, deposits, and invoicing of costs. Specifically:

- Proposed Schedule 6-C, section 1.8(c)(1) provides a list of eight requirements each must contain, including, for example, the location of proposed project, including source and sink, if applicable, and a $10,000 non-refundable deposit.

- Proposed Schedule 6-C, section 1.8(c)(2) requires proposals include consideration of certain alternative transmission technologies,[299] as discussed further below in section II.E.3 (Consideration of alternative transmission technologies).

- Proposed Schedule 6-C, section 1.8(c)(3) and its subparts address payments of costs associated with costs incurred by PJM to evaluate proposals, invoicing, treatment of non-refundable deposits, reconciliation of costs,

[297] Proposed Operating Agreement, Schedule 6-C, section 1.8(c) ("The Office of the Interconnection may shorten or lengthen a proposal window that is not yet opened based on, among other things: (1) complexity of the violations or system conditions and the anticipated lead-times associated with the proposals; and (2) whether there is sufficient time remaining in the relevant planning cycle to accommodate a standard proposal window and timely address the violation or system conditions."). Generally, the references to "violations" or "system conditions" relate to reliability criteria and thermal violations, and not to economic constraints. *See, e.g.*, PJM Manual 14B, section 1.5.2.

[298] Proposed Operating Agreement, Schedule 6-C, section 1.8(c) ("The Office of the Interconnection may lengthen a proposal window that already is opened based on one or more of the following criteria: (i) material changes in assumptions or conditions relating to the underlying drivers for a Long-Term Transmission Need; (ii) availability of new or changed information regarding the nature of the violations and the facilities involved; and (iii) time remaining in the relevant proposal window at the time of communicating the change.").

[299] Proposed Operating Agreement, Schedule 6-C, section 1.8(c)(2) (providing alternative transmission technologies requirements).

payment schedules, and consequences of failure to pay invoices, among similar topics.

- Proposed Schedule 6-C, section 1.8(c)(4) addresses additional required information that must be submitted by a proposing entity, related to its technical, managerial, engineering, and financial capabilities, including the option to submit a cost commitment proposal.

- Proposed Schedule 6-C, section 1.8(c)(5) addresses additional information that PJM may request (including requests to address any deficiencies in the proposal based on the above requirements) and provides a timeline for submission of such information.

- Proposed Schedule 6-C, section 1.8(c)(6) explains that any additional information requested pursuant to section 1.8(c)(5) may only be used to clarify a proposal and may not be used to submit a new proposal or modifications to an existing proposal once the proposal window is closed. Failure to provide the requested information in section 1.8(c)(5) will result in the project not being considered in the recommended Long-Term Regional Transmission Plan.

- Proposed Schedule 6-C, section 1.8(c)(7) addresses situations in which PJM may work with proposing entities to optimize the proposals that are received.

- Proposed Schedule 6-C, section 1.8(c)(8) addresses the possibility of additional per project fees if PJM determines the proposing entity's submittal includes multiple project proposals or components.

These procedural provisions generally are drawn from PJM's Order No. 1000 processes as approved by the Commission.[300] PJM and transmission developers have over a decade's worth of experience with the competitive solicitation process, including over 30 competitive windows,[301] and therefore are very familiar and comfortable with the proposal process. As such, employing a similar general process to solicit proposals to address Long-Term Transmission Needs should foster competitive and efficient solutions, allowing PJM

[300] Operating Agreement, Schedule 6, section 1.5.8.

[301] *See supra* n.101; section I.C (Relationship Between the Proposed LTRTP Protocol and Existing PJM RTEP Protocol).

to select the more efficient or cost-effective set of Long-Term Transmission Projects to meet the region's long-term needs.

One notable addition to the existing process is proposed Schedule 6-C, section 1.8(c)(7), which allows PJM to work with proposing entities to optimize the proposals. This provision also calls for PJM to work with Transmission Owners of identified Right-Sized Replacement Facilities "to review and/or consider modifying an identified Right-Sized Replacement Facility."[302] PJM could modify the Right-Sized Replacement Facility or identify a different solution altogether, or identify a differently-scoped Right-Sized Replacement Facility to meet the Long-Term Transmission Need. In short, this provision allows PJM to work with one or more project sponsors (including the Transmission Owner of an identified Right-Sized Replacement Facility) to modify a proposal to best address Long-Term Transmission Needs in a more efficient or cost-effective manner, including an identified Right-Sized Replacement Facility. In addition, based on updated data, PJM could determine that there is "an additional opportunity for right-sizing of an In-Kind Replacement Facility Need to address a posted Long-Term Transmission Need."[303] In that case, under the proposed rules, PJM would consult with the relevant Transmission Owner regarding identification of an additional Right-Sized Replacement Facility.[304]

As part of the consultations regarding identified Right-Sized Replacement Facilities, the Transmission Owner "shall provide" PJM "with estimated cost of an anticipated replacement facility that would otherwise address the associated In-Kind

[302] Proposed Operating Agreement, Schedule 6-C, section 1.8(c)(7)(ii).

[303] Proposed Operating Agreement, Schedule 6-C, section 1.8(c)(7)(ii).

[304] Proposed Operating Agreement, Schedule 6-C, section 1.8(c)(7)(ii).

Replacement Need absent the Right-Sized Replacement Facility."[305] This cost data will allow PJM to best evaluate the costs and benefits (including avoidable costs) offered by an identified Right-Sized Replacement Facility in developing the Core and All-in-One Plans.

Upon closing the competitive window, PJM will compile the list of proposed projects,[306] and post all submitted proposals, including all identified Right-Sized Replacement Facilities, on the PJM website. Such posting will provide information about each proposal, including each proposal's justification for the inclusion or exclusion of alternative transmission technologies, as discussed further below.[307]

As discussed further below in section II.G (Development of Plans to Address PJM Region's Long-Term Transmission Needs in a Holistic Manner), PJM will evaluate holistically all proposals, including all identified Right-Sized Replacement Facilities, and identify proposals for inclusion in the Core Plan and the All-in-One Plan.[308]

3. Consideration of alternative transmission technologies

In compliance with the Final Rule,[309] PJM will require proposing entities to consider alternative transmission technologies for each identified transmission need during the competitive window stage under *both* the proposed LTRTP Protocol process and the existing RTEP Protocol process.

[305] Proposed Operating Agreement, Schedule 6-C, section 1.8(c)(7)(ii).

[306] Proposed Operating Agreement, Schedule 6-C, section 1.8(d).

[307] Proposed Operating Agreement, Schedule 6-C, section 1.8(d) ("Following the close of a proposal window, the Office of the Interconnection shall post on the PJM website all proposals submitted pursuant to section 1.8(c) and all identified Right-Sized Replacement Facilities. The Office of the Interconnection shall review and evaluate all proposals submitted during a proposal window, including the justification for the inclusion or exclusion of alternative transmission technologies based on the information submitted in accordance with section 1.8(c)(2).").

[308] Proposed Operating Agreement, Schedule 6-C, section 1.8(d).

[309] *See* Order No. 1920 at PP 1198.

The Final Rule requires transmission providers to consider alternative transmission technologies when evaluating both new regional transmission facilities and upgrades to existing transmission facilities.[310] Specifically, transmission providers are required to consider dynamic line ratings, advanced power flow control devices, advanced conductors, and transmission switching when identifying the more efficient or cost-effective solution for each identified transmission need.[311] The Final Rule also requires the transmission provider to describe the point in the transmission planning process at which these alternative transmission technologies are considered.[312]

To comply with this directive, for the Long-Term Regional Transmission Plan, PJM proposes to require a proposing entity to affirmatively demonstrate in its submitted window proposal(s) how it has considered the incorporation of dynamic line ratings, advanced power flow control devices, advanced conductors and transmission switching as part of their proposed solutions.[313] If a specific alternative transmission technology(ies) is

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[310] *See* Order No. 1920 at PP 1198, 1214.

[311] *See* Order No. 1920 at P 1198 (listing four required alternative transmission technologies for consideration). Proposed Operating Agreement, Schedule 6-C,section 1.8(c)(2) ("[E]ach proposal must detail how the project sponsor considered the following alternative transmission technologies in addressing the Long-Term Transmission Need(s) to be addressed by the proposal: (i) dynamic line ratings; (ii) advanced power flow control devices; (iii) advanced conductors; and (iv) transmission switching.").

[312] Order No. 1920 at P 1205.

[313] *See* proposed Operating Agreement, Schedule 6-C, section 1.8(c)(2) ("[E]ach proposal must detail how the project sponsor considered the following alternative transmission technologies in addressing the Long-Term Transmission Need(s) to be addressed by the proposal: (i) dynamic line ratings; (ii) advanced power flow control devices; (iii) advanced conductors; and (iv) transmission switching."). PJM will work with its stakeholders to develop guidelines, including implementation details, definitions of certain technology types consistent with the Final Rule (*see, e.g.*, Order No. 1920-A at P 608 (discussing definitions of advanced conductors)), and best practices for identifying costs associated with each technology, for inclusion in PJM Manuals. Such Manual provisions would be developed through consultation with the states, Transmission Owners, transmission developers, and greater stakeholder community. PJM employs a formalized, collaborative stakeholder process for the creation and revision of business practices manuals, so that PJM seeks endorsement by stakeholders. *See* PJM Manual 34: PJM Stakeholder Process, § 11.15 (rev. 22, Sep. 25, 2025), https://www.pjm.com/-/media/DotCom/documents/manuals/m34.pdf (discussing stakeholder process to revise PJM manuals). Through this consultation process, PJM will also seek to provide guidance and memorialize use cases in its Manuals where such technologies would and would not be appropriate.

not included in the developer's submitted proposal, the proposing entity must provide justification, with sufficient detail, about why that alternative transmission technology(ies) was not included in the proposed solutions.[314]

Similarly, for the existing near-term RTEP Protocol process, PJM proposes to amend the current Operating Agreement, Schedule 6, section 1.5.8(c)(1), to require developers to include a detailed explanation regarding how each of the alternative transmission technologies were analyzed in developing the proposal, and why each of these technologies were included in, or excluded from, the proposal.[315]

For proposals submitted pursuant to both the LTRTP Protocol and the RTEP Protocol processes, the requirement to demonstrate that the developer has considered alternative transmission technologies will apply regardless of whether the proposal is for a new regional transmission facility or an upgrade to existing transmission facilities.[316]

If PJM determines that the developer did not sufficiently demonstrate that it has considered the identified alternative transmission technologies, PJM will so notify the proposing entity, and will provide opportunities to cure the deficiency.[317] After the

[314] *See* proposed Operating Agreement Schedule 6-C, section 1.8(c)(2) ("To the extent such an alternative transmission technology is not part of the proposal, the proposal must provide a sufficiently detailed justification explaining why the alternative transmission technology is not part of the proposal. Such consideration and justification should be consistent with the best practices related to alternative transmission technologies set forth in the PJM Manuals and technical reference guides posted by the Office of the Interconnection.").

[315] *See* Order No. 1920 at P 1214; proposed Operating Agreement, Schedule 6-C, section 1.8(c)(1).

[316] *See* Order No. 1920 at P 1198 & n.2555. In Order No. 1920, "upgrades" in this context include both the incorporation of an alternative transmission technology into an existing transmission facility with no additional changes to the underlying transmission facility, and the incorporation of an alternative transmission technology into an existing transmission facility as part of a larger set of upgrades. PJM's draft LTRTP Protocol requirement in proposed Operating Agreement, Schedule 6-C, section 1.8(c)(2) is broad enough to encompass, and intended to allow for, both types of upgrades.

[317] *See* proposed Operating Agreement, Schedule 6-C, section 1.8(c)(5) (setting forth the process by which PJM may request additional information under the proposed LTRTP Protocol if it determines a window proposal submission is deficient); Operating Agreement, Schedule 6, section 1.5.8(c)(3) (setting forth the process by which PJM may request additional information under the existing RTEP Protocol if it determines

competitive window closes, PJM will post each submitted proposal online, including the demonstration of how the developer considered alternative transmission technologies, allowing stakeholders to review the proposal and the corresponding justification[318] as required by the Final Rule.[319]

Upon the close of a proposal window, PJM will evaluate all proposed solutions, and, among other things, consider whether regional transmission facilities that incorporate, or solely consist of, any of the alternative transmission technologies would be the more efficient or cost-effective solution as compared to selecting new regional transmission facilities or upgrades to existing transmission facilities that do not incorporate these technologies.[320] PJM will evaluate the inclusion or exclusion of alternative transmission technologies based on the information provided by the proposing entities.[321] Furthermore, because alternative transmission technologies are included in the proposal stage and move through evaluation and selection along with all the other proposals, their evaluation and selection will be conducted in the same manner as other regional transmission facilities.[322]

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a window proposal submission is deficient). PJM's review of the proposing entity's justification will include the expectations set forth in the Final Rule, including that the transmission provider's explanation be "sufficiently clear to demonstrate whether the transmission provider did not select transmission facilities that incorporate any of the enumerated alternative transmission technologies, in part or primarily, due to concerns over the costs of upgrading energy management systems." Order No. 1920 at P 1215.

[318] *See* proposed Operating Agreement, Schedule 6-C, section 1.8(d); Operating Agreement, Schedule 6, section 1.5.8(d).

[319] *See* Order No. 1920 at P 954.

[320] *See* Order No. 1920 at P 1198.

[321] As the Commission explained, compliance with this requirement does not require detailed product cost simulations to demonstrate costs and benefits of each alternative transmission technology for each existing transmission element, and transmission providers have flexibility to apply engineering judgment to identify specific transmission elements that are likely candidates for specific enumerated alternative transmission technologies. *See* Order No. 1920-A at P 598.

[322] Order No. 1920 at P 1199. Under PJM's proposal, alternative transmission technologies will be subject to the same benefits evaluation and selection criteria as all Long-Term Regional Transmission Facilities.

Compliant with the requirements of the Final Rule,[323] to the extent PJM identifies a proposal that includes an alternative transmission technology that would modify an existing transmission facility as the more efficient or cost-effective solution to address an identified Long-Term Transmission Need, PJM will designate the incumbent Transmission Owner to develop any alternative transmission technology that is selected for incorporation into that incumbent Transmission Owner's existing transmission facilities as the more efficient or cost-effective solution.[324]

F. Evaluation of Proposals, Including PARSEC-Requested Criteria and Evaluation of Benefits and Costs

The Final Rule requires transmission providers include "an evaluation process, including selection criteria, that they will use to identify and evaluate Long-Term Regional Transmission Facilities for potential selection."[325] The criteria should seek to "maximize benefits" while "accounting for costs over time without over-building" and must be transparent and not unduly discriminatory.[326] For evaluation and selection procedures, the Final Rule requires PJM to consult with and seek the support of states.[327] PJM confirms that it has consulted extensively with PARSEC on these evaluation and selection procedures, and understands that it has the support of PARSEC on this proposal.[328]

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[323] Order No. 1920 at P 1202.

[324] *See* proposed Operating Agreement, Schedule 6-C, section 1.15.2(c); proposed Operating Agreement, Schedule 6, section 1.5.8 (*l*).

[325] Order No. 1920 at P 911.

[326] Order No. 1920 at PP 954, 964.

[327] Order No. 1920 at PP 927, 959, 963, 994 (requiring consultation with Relevant State Entities and other stakeholders for evaluation processes, including selection criteria). *See also, e.g.*, Order No. 1920-A at P 400 (reiterating state consultation requirements).

[328] *See* Order No. 1920 at PP 994-996.

As detailed below, PJM has developed an approach which – consistent with how it evaluates proposals pursuant to the currently effective RTEP Protocol[329] – would require PJM to engage in comparative analyses of proposals submitted to address posted Long-Term Needs, including any identified Right-Sized Replacement Facilities, individually or in conjunction with other proposals to determine the more efficient or cost-effective solution(s) for addressing such needs. Pursuant to this evaluation process, PJM will evaluate how well the proposals, individually and/or collectively, address the posted Long-Term Transmission Needs and otherwise enhance the transmission system, the costs of the proposal in dollars to ratepayers, and the quantifiable benefits the proposal would bring to the PJM Region. PJM's evaluations will consider either the individual project costs or the aggregate costs of a combination of projects addressing specific needs as further discussed in the cost and benefit evaluation section of this transmittal.[330] PJM's evaluation will be open and transparent and posted for TEAC and PARSEC review and comment.[331]

1. Evaluation criteria

After the competitive window closes, PJM will evaluate all proposals received through the competitive window (including any identified Right-Sized Replacement Facilities). PJM's evaluation will both apply the criteria listed in proposed Operating Agreement, Schedule 6-C, section 1.9(a) ("Evaluation Criteria"), which includes the benefits as required by the Final Rule.

PJM's proposed evaluation process begins with applying the proposed Evaluation Criteria to screen and identify more efficient or cost-effective solutions to address both

[329] *See* Operating Agreement, Schedule 6, section 1.5.8(e).

[330] *See infra* section II.F.2. (Evaluation of cost and benefits).

[331] *See* proposed Operating Agreement, Schedule 6-C, section 1.12.

Core LT Needs and Additional LT Needs.[332] PJM will evaluate proposals in accordance with the PJM Manuals and "based on its engineering judgment and taking into account sensitivity studies and scenario analyses considered [in the Long-Term Regional Transmission Plan studies] pursuant to [proposed Operating Agreement, Schedule 6-C,] section 1.6."[333]

The Evaluation Criteria are drawn from PJM's Order No. 1000 process,[334] adapted for the LTRTP Protocol, and seek to "maximize benefits accounting for costs over time without over-building transmission facilities."[335] The proposed Evaluation Criteria are both qualitative[336] and quantitative, requiring PJM to account for costs, measure benefits, and exercise engineering judgment to plan the system to meet Long-Term Needs.

PJM will select for review by TEAC those projects that PJM determines to be the more efficient or cost-effective solutions to address Long-Term Transmission Needs based on the following:

(i) the extent to which the project (which may be composed of a cluster of inter-related proposals) would address and solve the posted Long-Term Transmission Need and not create or exacerbate other Long-Term Transmission Needs, including the proposal's expected in-service date relative to the requested in-service date;[337]

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[332] Proposed Operating Agreement, Schedule 6-C, section 1.9. Order No. 1920 uses the term of art "selection criteria." *See, e.g.*, Order No. 1920 at P 911. The proposed Evaluation Criteria, the Core Plan Benefit-Cost-Ratio and the All-in-One Plan Benefit-Cost Ratio, and the evaluation of timeliness and appropriateness are all different types of "selection criteria" applied by PJM during the evaluation and selection stages of the LTRTP Protocol. As the Commission explained, "[n]othing in this final rule requires the use of any particular approach [for evaluation and selection], and we clarify that transmission providers may use more than one approach complementarily." Order No. 1920 at P 958 n.2109.

[333] Proposed Operating Agreement, Schedule 6-C, section 1.9(a).

[334] Operating Agreement, Schedule 6, section 1.5.8(e).

[335] Order No. 1920 at P 969.

[336] *See* Order No. 1920 at P 961 ("[N]othing in this final rule prohibits transmission providers from proposing to use qualitative factors in their evaluation processes and/or selection criteria.").

[337] For example, a project that requires eight years to build will be selected if the specific Long-Term Transmission Need it is addressing is expected in Year 8, whereas if the Long-Term Transmission Need is

(ii) the extent to which the project (which may be composed of a cluster of inter-related proposals) would have secondary benefits, such as addressing additional or other system reliability, operational performance, or economic efficiency needs;[338]

(iii) the ability to timely complete the project and project development feasibility; [339]

(iv) the robustness of the proposal,[340] including the expandability of the proposed transmission facility(ies);[341]

(v) constructability, including the maximization of existing rights-of-way;[342]

(vi) the benefits, as determined in accordance with section 1.9(b), including the maximization of benefits, all other things equal;[343]

(vii) costs;[344] and

(viii) other factors such as cost-effectiveness, including the quality and effectiveness of any voluntarily-submitted binding cost commitment proposal related to Long-Term Transmission Projects which caps project construction costs (either in whole or in part), project total return on equity (including incentive adders), or capital structure.

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expected in Year 16, then PJM may wait for the next Long-Term Regional Transmission Planning cycle to address the Long-Term Transmission Need.

[338] PJM expects to quantify any secondary benefits as part of the evaluation of the proposed Evaluation Criteria.

[339] This would include, for example, a review of the project developer's ability to procure equipment and labor, meet permitting requirements, and satisfy other project development milestones necessary to achieve the required in-service date.

[340] Robustness evaluates how well the proposed solution performs across each Long-Term Scenarios and any sensitivities, including the extreme weather sensitivity.

[341] Expandability evaluates whether the solution can be expanded over time to meet additional future Long-Term Transmission Needs, allowing for capitalization on the initial investment and limiting the risk of stranded investment (e.g., installing double circuit towers and only stringing up one line).

[342] Constructability evaluates how likely it is that the project can be constructed, considering for example, whether the project takes advantage of existing rights-of-way, reduces construction risks, and other social and environmental impacts.

[343] *See infra* section II.F.2. (Evaluation of benefits and costs). The "all other things equal" provides for a standalone measurement of benefits, exclusive of other criteria.

[344] Proposed Operating Agreement, Schedule 6-C, section 1.9(a) (providing more details about how costs are evaluated through comparative analyses, as discussed below).

As stated above, many of the proposed Evaluation Criteria are drawn from PJM's Order No. 1000-compliant RTEP Protocol,[345] and are designed to allow PJM's transmission planners to exercise their expertise and engineering judgment to select the best set of transmission solutions to holistically address the posted Long-Term Transmission Needs in a more efficient or cost-effective manner. During PJM's evaluation process, PJM may determine that modification of a proposal may result in "the modified proposal being determined to be the more efficient or cost-effective proposal for recommendation to the PJM Board."[346] Thus, consistent with PJM's Regional Transmission Expansion Plan window process,[347] PJM's proposed evaluation process affords PJM flexibility, in accordance with the PJM Manuals, to optimize the proposals to achieve the more efficient or cost-effective outcomes.

2. *Evaluation of costs and benefits*

To best achieve the goal of "maximizing benefits *accounting for costs*,"[348] while addressing the region's Long-Term Transmission Needs, PJM's proposed LTRTP Protocol will evaluate both the costs and benefits of each proposal (or a cluster of inter-related proposals as a single project), including Right-Sized Replacement Facilities. Such considerations are in addition to those non-cost, planning-oriented criteria described above (and set forth in proposed sections 1.9(a)(i) through (iv)).

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[345] Operating Agreement, Schedule 6, section 1.5.8.

[346] Proposed Operating Agreement, Schedule 6-C, section 1.9(a); Operating Agreement, Schedule 6, section 1.5.8(e).

[347] *See* Operating Agreement, Schedule 6, section 1.5.8(e) ("PJM may modify the technical specifications of a proposal, as outlined in the PJM Manuals, which may result in the modified proposal being determined to be the more efficient or cost-effective proposal for recommendation to the PJM Board.").

[348] Order No. 1920 at P 964.

In terms of costs, proposed sections 1.9(a)(vii) and (viii) require PJM to consider, as part of the comparative analyses described above, estimated costs of each proposed transmission enhancement or expansion, as well as other factors affecting the cost-effectiveness of the proposed solution, including the quality and effectiveness of any voluntarily-submitted binding cost commitment proposal. To do so, PJM will measure not just the estimated cost of the proposal but also "the comparative risks to be borne by ratepayers as a result of the proposal's binding cost commitment or the use of non-binding cost estimates."[349] Consistent with the requirements of the currently effective RTEP Protocol,[350] PJM will present its rationale and comparative analyses to TEAC for review and comment.[351]

In terms of benefits, PJM proposes to evaluate the benefits of a proposed Long-Term Transmission Project (which may be composed of a cluster(s) of inter-related proposals) over a 20-year planning horizon, starting from the estimated in-service date of the Long-Term Regional Transmission Facility.[352] PJM will use the benefit metrics listed below to evaluate among the various proposed solutions and inform as to which proposal(s)

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[349] Proposed Operating Agreement, Schedule 6-C, section 1.9(a). To be clear, PJM will not make any determination about whether any element of binding voluntary cost commitment is just and reasonable, as that is the Commission's responsibility as rate regulator. As such, and consistent with the RTEP Protocol, Operating Agreement, Schedule 6, section 1.5.8(c)(2), PJM proposes to add identical language to proposed Operating Agreement, Schedule 6-C, section 1.9(a) to clarify that disputes relating to any cost, return on equity, or capital structure proposal may be addressed in a rate proceeding, and that PJM does not make a determination that "the cost, return on equity or capital structure results in just and reasonable rates."

[350] *See* Operating Agreement, Schedule 6, section 1.5.8(e).

[351] Proposed Operating Agreement, Schedule 6-C, section 1.9(a).

[352] *See* Order No. 1920 at P 859; proposed Operating Agreement, Schedule 6-C, section 1.9(b). PJM will use the same 20-year horizon for estimates of costs associated with any proposal for consistency and a matching comparison of costs over time. Proposed Operating Agreement, Schedule 6-C, sections 1.10(a)(1) and 1.11(a)(1). *See* Order No. 1920 at P 859.

provides for "the maximization of benefits, all other things equal."[353] For each proposal (or cluster of inter-related proposals), including each identified Right-Sized Replacement Facility, PJM will measure, at a minimum, the following eight benefits:[354]

<u>Section 1.9(b) Benefits</u>

i. the avoidance or deferral of any transmission facilities and/or replacement of aging transmission infrastructure, including cost savings associated with accelerating the development of a Long-Term Transmission Project start date in lieu of implementing a Short-term Project or replacement facility ("Benefit 1");[355]

ii. reduction in loss of load probability or planning reserve margin ("Benefit 2");[356]

iii. production cost savings ("Benefit 3");

iv. reduction in transmission energy losses ("Benefit 4");

v. any reduction in transmission congestion resulting from transmission outages ("Benefit 5");

vi. mitigation of extreme weather events and unexpected system conditions ("Benefit 6");

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[353] Proposed Operating Agreement, Schedule 6-C, section 1.9(a)(vi) ("[T]he benefits, as determined in part in accordance with section 1.9(b), including the maximization of benefits, all other things equal[.]").

[354] Proposed Operating Agreement, Schedule 6-C, section 1.9(b); Order No. 1920 at P 720; Order No. 1920-A at P 223 (setting aside the Final Rule's requirement to use seven required benefits and instead "rely on economic and reliability drivers.").

[355] This description of Benefit 1 is compliant with the Final Rule, which explains that Benefit 1 includes "reduced costs due to avoided or delayed transmission investment otherwise required to address reliability needs or replace aging transmission facilities." Order No. 1920 at P 745. Acceleration of a Long-Term Regional Transmission Project in lieu of a "Short-term Project" under the Regional Transmission Expansion Protocol would reduce costs due to avoided investment to address reliability issues. *See* Operating Agreement, Schedule 6, section 1, Definitions S -T (definition of "Short-term Project"). *See also* Order No. 1920 at P 747 ("We emphasize that transmission providers can use Benefit 1 to calculate the costs that are avoided because replacements of local or regional transmission facilities are no longer needed, or may be deferred, when they are displaced by proposed new Long-Term Regional Transmission Facilities.").

[356] PJM uses "or" in Proposed Operating Agreement, Schedule 6-C, section 1.9(b)(ii) to comply with the Commission's explanation that "[b]ecause there is an overlap between reduced loss of load probability benefits and reduced planning reserve margin benefits, for purposes of Long-Term Regional Transmission Planning, transmission providers must either measure reduced loss of load events by holding the planning reserve margin constant *or* measure the reduction in planning reserve margins by holding loss of load events constant but may not measure both simultaneously for purposes of using and measuring Benefit 2(a) or 2(b)." Order No. 1920 at P 755.

vii. capacity cost benefits from reduced peak energy losses or the line loss component of the corresponding reduced loss of load benefit ("Benefit 7");[357] and

viii. any other financially quantifiable benefit to customers resulting from a Long-Term Transmission Project ("Benefit 8").

That is, PJM will measure the seven required benefits enumerated in the Final Rule, as well as an additional benefit that will allow PJM to consider "other financially quantifiable benefit[s]" to customers resulting from a proposed Long-Term Transmission Project. Inclusion of the additional Benefit 8 is consistent with or superior to the Final Rule, which explicitly allows transmission providers flexibility to "measure and use additional benefits" as long as the evaluation process is open and transparent and "result[s] in a determination that is sufficiently detailed for stakeholders to understand why a particular Long-Term Regional Transmission Facility (or portfolio of such Facilities) was selected or not selected to address Long-Term Transmission Needs."[358]

Given PJM's long history of transparency[359] and PJM's proposal to post the Core Plan and All-in-One Plan—including all projects identified for inclusion in such plans—

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[357] PJM includes "or" in Proposed Operating Agreement, Schedule 6-C, section 1.9(b)(vii) to clarify the Office of the Interconnection will measure either the capacity cost benefits from reduced peak energy losses *or* the line loss component of the corresponding reduced loss of load benefit, but not both. The capacity cost benefits from reduced peak energy losses would be measured if PJM relies on the planning reserve margin for calculating Benefit 2 under proposed section 1.9(b)(ii), and the line loss component of the corresponding reduced loss of load benefit would be measured if PJM relies on the reduction in loss of load probability for calculating Benefit 2 under proposed section 1.9(b)(ii).

[358] *See* Order No. 1920 at P 737. *See also id.* at P 729 (explaining transmission providers may also propose to use benefits in addition to the seven required by Order No. 1920). Moreover, Benefit 8 is nearly verbatim to a Commission-accepted benefits metric used in MISO's regional transmission planning process for selecting Multi-Value Projects. *Compare* MISO Tariff, Attachment FF, section II.C.5.e ("Any other financially quantifiable benefit to Transmission Customers resulting from an enhancement to the Transmission System and related to the provisions of Transmission Service."), *with* proposed Operating Agreement, Schedule 6-C, section 1.9(b)(viii) ("[A]ny other financially quantifiable benefit to customers resulting from a Long-Term Transmission Project.").

[359] In 2008, the Commission found PJM's existing processes and proposed revisions for developing and implementing transmission system plans compliant with Order No. 890's "transparency" requirement. *PJM Interconnection, L.L.C.*, 123 FERC ¶ 61,163, at PP 37-42 (2008); *see also PJM Interconnection, LLC*, 142 FERC ¶ 61,214, at P 52 (2013) (affirming PJM's accepted processes as compliant with Order No. 890's

and "any proposals that would address Long-Term Transmission Needs not identified for inclusion in [such plans,]"[360] PJM's proposed Long-Term Planning Process meets this standard.

Consistent with Commission precedent,[361] the Final Rule provides flexibility in how transmission providers may measure benefits.[362] Indeed, Order No. 1920-A describes this flexibility as "extensive."[363] PJM proposes to measure Benefit 1 on an avoided cost basis,[364] consistent with the Commission's previous acceptance of that approach in the Order No. 1000 regional transmission planning context.[365] PJM proposes to measure

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transmission planning requirements). Specifically, the Commission found that "providing a more detailed explanation of the logistics of committee participation in the PJM Manual 14 series meets the transparency planning principle;" accordingly, the Commission concluded that the "existing PJM OA and Tariff provisions, along with its proposed revisions, ensure transparency in the development and implementation of transmission system plans." *PJM Interconnection, L.L.C.*, 123 FERC ¶ 61,163, at P 39. More recently, the Commission has found that PJM's current process of posting project status and cost allocation for each RTEP project provides a "reasonable level of transparency." *Am. Mun. Power, Inc. v. PJM Interconnection, L.L.C.*, 191 FERC 61,001, at P 61 (2025).

[360] Proposed Operating Agreement, Schedule 6-C, section 1.2(b).

[361] Order No. 1000 at P 149 (explaining that the Commission did not require "a particular set of analyses" but rather recognizing "flexibility to develop . . . procedures . . . may meet the region's needs more efficiently or cost-effectively"); *Midwest Indep. Transmission Sys. Operator, Inc.*, 133 FERC ¶ 61,221, at P 48 (2010) (accepting MISO's multi-value project process as just and reasonable and stating that a goal of this Multi-Value Project process is "to allow Midwest ISO flexibility to move forward [Multi-Value Projects] to maximize benefits within and across the region"); *Sw. Power Pool, Inc.*, 136 FERC ¶ 61,050, at P 28 (2011) (explaining that "broad categories of factors" used in transmission planning cost-effectiveness analysis allowed SPP and stakeholders "flexibility"); *see also PJM Interconnection, L.L.C.*, 141 FERC ¶ 61,169, at P 22 (2012) (finding that the PJM Tariff did not need to include specific metrics and criteria given PJM's Regional Transmission Expansion Plan process required that PJM have some flexibility in applying the criteria).

[362] *See* Order No. 1920 at P 808 (specifying the Commission "allow[s] flexibility as far as the method transmission providers use to measure each benefit included in the required set of benefits . . . ."); *id.* at P 862 ("[T]ransmission providers have the flexibility to evaluate Long-Term Regional Transmission Facilities and their measured benefits across the different Long-Term Scenarios and sensitivities in a manner that addresses the inherent uncertainty in Long-Term Regional Transmission Planning[.]"); Order No. 1920-A at P 390 (restating that "Order No. 1920 provides transmission providers with flexibility on the measurement of the required benefits, and we expect that transmission providers can use such flexibility to develop methods for measuring each required benefit").

[363] Order No. 1920-A at P 140.

[364] Proposed Operating Agreement, Schedule 6-C, section 1.9(b).

[365] *See* Order No. 1000 at P 81; Order No. 1920 at P 732.

Benefits 2 through 7 through a production cost simulation model or other models as may be appropriate, accounting for both normal operating conditions and extreme weather events.[366] With regard to Benefit 8, "any other financially quantifiable benefit to customers resulting from a Long-Term Transmission Project," the methodology and means for measurement will be dependent on the type of benefit identified by PJM and discussed with stakeholders. PJM would also need to provide in the PJM Manuals the implementation details for such benefit measurement, which would allow stakeholders to verify the use of such benefit metric. Compliant with the Final Rule, PJM will not discount any benefits to reflect uncertainty over the planning horizon.[367]

The methods that PJM proposes to use to calculate benefits, e.g., avoided-cost basis and production cost simulation model (or other models as appropriate), are commonly used in the industry for transmission planning purposes. As required by the Final Rule, descriptions of these measurements are in proposed Operating Agreement, Schedule 6-C, section 1.9(b).[368] Additionally, PJM will work with stakeholders to more granularly define the means by which PJM will measure the benefits, and will set forth these more detailed requirements in the PJM Manuals.[369]

[366] Proposed Operating Agreement, Schedule 6-C, section 1.9(b).

[367] *See, e.g.*, Order No. 1920-A at PP 425-426. However, compliant with the Final Rule, PJM may "discount the value of benefits calculated for purposes of determining the present value of those benefits." Order No. 1920-A at P 424.

[368] Order No. 1920 at PP 838-839; proposed Operating Agreement, Schedule 6-C, section 1.9(b).

[369] Manual creation and revisions are subject to PJM's stakeholder process. *See* Governmental and Member Services Division, Stakeholder Affairs Department, *Manual 34: PJM Stakeholder Process*, § 11.15 (rev. 22, Sep. 25, 2025), https://www.pjm.com/-/media/DotCom/documents/manuals/m34.pdf (discussing stakeholder process to revise PJM manuals). The Commission approved specific descriptions for each of these benefits in Order No. 1920 at P 740 *et seq*.

Finally, the Final Rule allows, but does not require, transmission providers to use a portfolio approach when evaluating the benefits of Long-Term Regional Transmission Facilities.[370] PJM will not implement a portfolio approach in every case. Rather, PJM will use its engineering judgement in determining whether a project-by-project approach or portfolio approach is most appropriate and efficient depending on the circumstances, as allowed in the Final Rule.[371] As described above, PJM uses an Order No. 1000-compliant sponsorship model and will solicit a range of proposals for identified Long-Term Needs through the competitive solicitation process, as discussed *supra* section II.E (Consistent with its Current Order No. 1000-Compliant Regional Transmission Planning Process, PJM Will Administer a Competitive Solicitation for Project Proposals and Will Require That Proposals Demonstrate Consideration of Alternative Transmission Technologies).

G. Development of Plans to Address PJM Region's Long-Term Transmission Needs in a Holistic Manner

1. Overview and application of selection criteria

After the competitive proposal window closes and proposals are evaluated as described above, PJM will apply its proposed selection criteria[372] to develop plans to address the region's Long-Term Transmission Needs in a holistic manner. Specifically, as described herein, PJM will develop: (i) a Core Plan addressing Core LT Needs;[373] (ii) an

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[370] *See* Order No. 1920 at P 889 ("We adopt the NOPR proposal to allow, but not require, transmission providers in each transmission planning region to use a portfolio approach when evaluating the benefits of Long-Term Regional Transmission Facilities.").

[371] *See* Order No. 1920 at P 889 ("[T]ransmission providers may use either or both facility-by-facility and portfolio approaches within the same Long-Term Regional Transmission Planning cycle.").

[372] The proposed Evaluation Criteria, the Core Plan Benefit-Cost-Ratio and the All-in-One Plan Benefit-Cost Ratio, and the evaluation of timeliness and appropriateness are all different types of "selection criteria" applied by PJM during the evaluation and selection stages of the LTRTP Protocol.

[373] *See* proposed Operating Agreement, Schedule 6-C, section 1.10; *infra* section II.G.2 (PJM will develop an intermediate-step Core Plan to provide the costs of the needed transmission reinforcements, their benefits, and drivers).

All-in-One Plan that jointly and holistically addresses Core and Additional LT Needs;[374] and (iii) a Long-Term Regional Transmission Plan that optimizes the projects preliminarily selected in the All-in-One Plan, plus any projects advanced through voluntary funding, which PJM will then recommend for inclusion in the Long-Term Regional Transmission Plan, which, in turn, will be incorporated into the Regional Transmission Expansion Plan.[375] The Core and All-in-One Plans will identify Long-Term Transmission Projects that address posted Long-Term Transmission Needs and satisfy certain benefit-to-cost ratio thresholds.

Applying the Evaluation Criteria, PJM will first develop a Core Plan to address Core LT Needs and then develop an All-in-One Plan that, building on the Core Plan (either incrementally or through scaling parts of the Core Plan), holistically addresses Core and Additional LT Needs. The Core Plan, as a portfolio, must satisfy a 1:1 benefit-to-cost ratio, and Long-Term Transmission Projects (in whole or in part) addressing Additional LT Needs in the All-in-One Plan must individually satisfy a 1.25 benefit-to-cost ratio.[376]

The application of benefit-to-cost ratio thresholds ensure that the projects selected to address the Long-Term Transmission Needs provide benefits greater than or equal to their costs. PARSEC requested these specific ratios and determined that projects in the

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[374] *See* proposed Operating Agreement, Schedule 6-C, section 1.11; *infra* section II.G.3 (Development of the All-in-One Plan).

[375] *See* proposed Operating Agreement, Schedule 6-C, section 1.16; *infra* section II.G.8 (Establishment of the Long-Term Regional Transmission Plan).

[376] *See* proposed Operating Agreement, Schedule 6-C, sections 1.10(a)(1), 1.11(a)(1). These two benefit-to-cost ratios, along with explanations in Schedule 6-C, proposed sections 1.10(a)(2), 1.11(a)(2), and *infra* section II.G.8 (Establishment of the Long-Term Regional Transmission Plan), comply with the Final Rule's requirement that "the determination of why a particular Long-Term Regional Transmission Facility (or portfolio of such Facilities) was selected or not selected must include the measured benefits for each alternative Long-Term Regional Transmission Facility (or portfolio of such Facilities) considered in the Long-Term Regional Transmission Planning process." Order No. 1920 at P 954.

Core Plan should be measured as a portfolio, while projects addressing Additional LT Needs should be measured individually. PJM has adopted PARSEC's requested approach on the benefit-cost ratios, and it is compliant with the Final Rule.[377]

From the All-in-One Plan's set of transmission solutions, PJM will select those projects for which advancement to development and construction "would be timely and appropriate,"[378] as described further below. Application of this last selection criteria will be based on the timing of the need and the development timeline of the solution, both in relation to the next Long-Term Regional Transmission Plan cycle. Any proposed Long-Term Transmission Project, that PJM deems appropriate for addressing a specific Additional LT Need but was *not* selected would be eligible for voluntary funding[379] (as to be established in PJM's future filing implementing the PJM Transmission Owners' cost allocation changes).

In short, PJM's selection criteria are: (i) the Evaluation Criteria, which includes measurement of costs and benefits;[380] (ii) the Core Plan Benefit-to-Cost Ratio of no less than 1:1;[381] (iii) All-in-One Plan Incremental Plan Benefit-to-Cost Ratio of no less than

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[377] *See* Order No. 1920 at P 958 ("[A]s further discussed below in the Regional Transmission Cost Allocation section, transmission providers may not impose as a selection criterion a minimum benefit-cost ratio that is higher than 1.25-to-1.00. We decline to reduce or increase the maximum benefit-cost ratio that transmission providers may use as a selection criterion in Long-Term Regional Transmission Planning. . . . [I]n Order No. 1000, requiring that a benefit-cost ratio, if adopted, not exceed 1.25-to-1.00 ensures that the ratio is not so high as to exclude Long-Term Regional Transmission Facilities with significant positive net benefits from selection.").

[378] *See* proposed Operating Agreement, Schedule 6-C, section 1.12(b); *infra* section II.G.5 (Selection of projects that are timely and appropriate).

[379] *See* proposed Operating Agreement, Schedule 6-C, section 1.8(d); *supra* section I.A (Overview of PJM's proposed LTRTP Protocol Process).

[380] Proposed Operating Agreement, Schedule 6-C, section 1.9(a).

[381] Proposed Operating Agreement, Schedule 6-C, section 1.10(a).

1.25:1;[382] and (iv) whether selection would be timely and appropriate.[383] PJM's selection criteria would allow PJM to narrow down and screen the proposals submitted through the competitive window. As part of the evaluation and selection process described above in section F.1 (Evaluation criteria), PJM may still need to further evaluate projects based on robustness, i.e., alignment across multiple scenarios, and overall value of the project to identify a more efficient or cost-effective set of solutions that satisfy the selection criteria listed.

Based on its engagement with PARSEC, PJM has also committed to providing a "state opt-out" mechanism, once adopted and reflected into the cost allocation filing, which as currently contemplated, would allow individual PJM states an opportunity to affirmatively choose not to be allocated costs for a specified Long-Term Transmission Project (which could be a cluster of inter-related proposals that collectively address a common set of Additional LT Needs). However, PJM is not proposing such a mechanism in this compliance filing given that it is so intertwined with cost allocation that it must be developed with the cost allocation rules for Long-Term Transmission Projects. As such, PJM will submit proposed language implementing the "state opt-out" in June 2026 concurrent with the PJM Transmission Owners' submission of their proposed cost allocation methodology(ies) applicable to Long-Term Transmission Projects.[384]

Following the voluntary funding and state opt-out processes, PJM will then develop the recommended Long-Term Regional Transmission Plan for approval by the PJM

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[382] Proposed Operating Agreement, Schedule 6-C, section 1.11(a).

[383] Proposed Operating Agreement, Schedule 6-C, sections 1.12(b), 1.16(b).

[384] *See supra* section I.E (The scope of this compliance filing is informed by the allocation of filing rights between PJM and the PJM Transmission Owners).

Board.[385] The recommended plan will be composed of selected Long-Term Transmission Projects from the All-in-One Plan, plus any projects advanced through voluntary funding by states and other entities.

The costs for each selected Long-Term Transmission Project approved by the PJM Board will be allocated according to the cost allocation rules to be submitted by the PJM Transmission Owners.

2. *PJM will develop an intermediate-step Core Plan to provide the costs of the needed transmission reinforcements, their benefits, and drivers*

a. <u>Development of the Core Plan</u>

Following the close of the competitive window described in section II.E[386] above, and based on its evaluation of proposals and identified Right-Sized Replacement Facilities as described in section II.F[387] above, PJM will develop a Core Plan that focuses on addressing Core LT Needs.[388] The Core Plan is intended to address the required set of Long-Term Transmission Needs that PJM must address in order to maintain resource adequacy and reliability, and represents the necessary build that would result from any Long-Term Regional Transmission Planning cycle. Although the Core LT Need definition focuses on PJM's primary responsibility of maintaining system reliability, the identification of Core LT Needs is not exclusive of public policies and economic drivers

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[385] *See* proposed Operating Agreement, Schedule 6-C, section 1.16; *infra* section II.G.8 (Establishment of Long-Term Regional Transmission Plan).

[386] *Supra* section II.E (Consistent with its Current Order No. 1000-Compliant Regional Transmission Planning Process, PJM Will Administer a Competitive Solicitation for Project Proposals and Will Require That Proposals Demonstrate Consideration of Alternative Transmission Technologies).

[387] *Supra* section II.F (Evaluation of Proposals, Including PARSEC-Requested Criteria and Evaluation of Benefits and Costs).

[388] Proposed Operating Agreement, Schedule 6-C, sections 1.6.2, 1.10(a).

and does not “discount” them. Rather, such drivers inform the analyses that identify Core LT Needs. Therefore, by addressing Core LT Needs, the Core Plan will necessarily also produce and contribute to public policy and economic benefits in addition to reliability benefits. That is, PJM expects that reliability, economic, and policy drivers will largely overlap and that therefore the Long-Term Transmission Projects that will comprise a Core Plan will produce multiple types of benefits – reliability, policy, and economic – and are likely to also address some posted Additional LT Needs.[389]

In addition to its individualistic evaluation of projects pursuant to the Evaluation Criteria, in identifying projects eligible for inclusion in the Core Plan, PJM must consider that the Core Plan, as a portfolio, must meet the “Core Plan Benefit-to-Cost Ratio of not less than 1:1.”[390] Schedule 6-C defines the calculation of this ratio, which incorporates evaluation of benefits and costs for a 20-year horizon, in compliance with the Final Rule.[391] Because the ratio is measured on a portfolio basis, the ratio will be the sum of all benefits quantified in accordance with section 1.9(b) divided by the sum of all costs determined in accordance with section 1.9(a).[392] PJM may group a number of proposals collectively addressing a unique Long-Term Transmission Need to evaluate their benefits and

[389] For example, due to the lumpy nature of transmission enhancement capabilities, transmission capability beyond that required to exactly address Core LT Needs will likely be created by the selection of a required Long-Term Transmission Project and be available for other system uses such as addressing Additional LT Needs.

[390] Proposed Operating Agreement, Schedule 6-C, section 1.10(a).

[391] Order No. 1920 at P 958; proposed Operating Agreement, Schedule 6-C, section 1.10(a)(1).

[392] *See* proposed Operating Agreement, Schedule 6-C, section 1.10(a)(1) (“The Core Plan Benefit-to-Cost Ratio shall be equal to the quotient of [the benefits of the portfolio of the Long-Term Transmission Projects included in the Core Plan] divided by [the costs of the portfolio of the Long-Term Transmission Projects included in the Core Plan], where benefits will be the present value of all benefits determined in accordance with sections 1.9(b) provided by all Long-Term Transmission Projects included in the Core Plan for the first 20 years’ of the projects’ life, and costs will be the present value of all costs determined in accordance with section 1.9(a) for the first 20 years’ of the project’s life.”).

associated cost as a single unit on a case-by-case basis. Requiring at least a 1:1 Core Plan Benefit-to-Cost Ratio ensures that the Core LT Needs in a more efficient or cost-effective manner, compliant with the Final Rule.[393]

Under PJM's proposal, the Core Plan provides data that when compared against the All-in-One Plan informs the states of the incremental costs associated with addressing Additional LT Needs above what is necessary to maintain system reliability—as informed by the policies, laws, and regulations within Factor Categories 1-3. The Core Plan provides informative data as to the costs and associated benefits of needed long-term reinforcements to the transmission system. To be clear, under PJM's proposal, the Core Plan will never stand on its own; rather, the All-in-One Plan, detailed next, will always be the basis for any Long-Term Regional Transmission Plan.[394]

There may be multiple proposals addressing the same posted Core LT Need and not all proposals addressing such Core LT Needs will be identified for inclusion in a Core Plan. Consistent with PJM's practice of transparency and its Order No. 1000 window process,[395] for each proposal that could address a Core LT Need but was not included in the Core Plan, PJM will provide an explanation for why such proposal was not identified for inclusion (as part of the posting of the Core Plan and All-in-One Plan made in accordance with proposed Schedule 6-C, section 1.12(a)).[396] Because PJM's proposed

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[393] Order No. 1920 at P 958 ("[T]ransmission providers may not impose as a selection criterion a minimum benefit-cost ratio that is higher than 1.25-to-1.00.").

[394] This is true even if there are no projects addressing Additional LT Needs that meet the applicable benefit-to-cost ratio. In that case the All-in-One Plan and Core Plan will be the same, but only the All-in-One Plan advances.

[395] *See* Operating Agreement, Schedule 6, section 1.5.8(c) ("Project Proposal Windows") and section 1.5.8(d) (requiring the posting of proposals on PJM's website "[f]ollowing the close of a proposal window").

[396] Proposed Operating Agreement, Schedule 6-C, section 1.10(a)(2). As a hypothetical, imagine a project proposal meets a Core LT Need and would resolve a reliability challenge on the system, but it is based on an

evaluation and selection approach involves a multi-step process, PJM will provide explanations at each step, where practically possible, to comply with the Final Rule's "requirement that transmission providers' evaluation of transmission facilities must culminate in a determination that is sufficiently detailed for stakeholders to understand why a particular Long-Term Regional Transmission Facility (or portfolio of such Facilities) was selected or not selected."[397] This explanation, provided at the Core Plan development stage, will detail why proposals that may meet a Core LT Need were not included in the Core Plan.

b. Procedures for specific situations that may arise during the development of the Core Plan

Proposed Schedule 6-C, sections 1.10(b) and (c) establish procedures for specific situations that may arise during the development of the Core Plan. Proposed section 1.10(b) addresses the circumstance in which "none of the proposed Long-Term Transmission Projects received during a proposal window would address or sufficiently address a posted Core LT Need that the Office of the Interconnection determines should be addressed."[398] In other words, PJM has determined that a Core LT Need should be addressed but none of the proposals submitted in the window actually address the need or do not address the need sufficiently so as to resolve it. Thus, to identify a solution to such a Core LT Need,[399] PJM may either: (i) independently propose a Long-Term Transmission

unreasonably long timeline or is not developmentally feasible under the circumstances, and therefore it is not included in the Core Plan.

[397] *See* Order No. 1920 at PP 954, 966.

[398] Proposed Operating Agreement, Schedule 6-C, section 1.10(b).

[399] For example, this provision may apply where a project cannot fit within the Core Plan because it does not meet the Core Plan Benefit-to-Cost Ratio, but the project is still needed to address a Core LT Need.

Project, present it to TEAC for review and comment,[400] an approach compliant with the Final Rule[401] and with the RTEP Protocol;[402] or (ii) PJM could open a 30-day or longer window, in accordance with the PJM Manuals, to solicit proposals to address that need. If PJM proposes such a project, it will designate the Transmission Owner(s) in the Zone(s) where the Long-Term Transmission Project would be located as the Designated Entity(ies).[403] If PJM seeks solutions through a new window, PJM will present to TEAC the results of such window, including any proposal PJM identifies as the more efficient or cost-effective solution.[404] While PJM does not envision exercising such authority regularly—as PJM anticipates that most long-term reliability needs will be addressed through the Core Plan—having such flexibility to address a Core LT Needs will provide PJM an important tool in fulfilling its obligation to maintain reliability in the PJM Region.

In addition, proposed section 1.10(c) provides that PJM may address a Core LT Need through the RTEP Protocol process with a Short-term Project instead of the LTRTP Protocol process, if doing so would be more efficient or cost-effective under the circumstances.[405]

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[400] Proposed Operating Agreement, Schedule 6-C, section 1.10(b).

[401] Order No. 1920 at P 957 ("[T]ransmission providers have an affirmative obligation to identify Long-Term Regional Transmission Facilities that more efficiently or cost-effectively address Long-Term Transmission Needs, regardless of whether any stakeholder proposes potential Long-Term Regional Transmission Facilities for consideration in Long-Term Regional Transmission Planning.").

[402] This proposal is modeled after sections of the RTEP Protocol that require PJM to identify projects if none of the proposals submitted in a competitive window solve identified reliability violations or economic constraints. *See* Operating Agreement, Schedule 6, sections 1.5.8(g), 1.5.8(h).

[403] Proposed Operating Agreement, Schedule 6-C, section 1.10(b).

[404] Proposed Operating Agreement, Schedule 6-C, section 1.10(b).

[405] Proposed Operating Agreement, Schedule 6-C, section 1.10(c). As provided in proposed section 1.10(c), this interaction with the Regional Transmission Expansion Plan could occur where a "may be a Short-term Project [is] proposed pursuant to [the competitive window in] section 1.8," i.e. a developer identifies a solution to a Core LT Need that could be developed in 3 years. In such case, PJM could refer the project and/or the need to the Regional Transmission Expansion Plan.

3. *Development of the All-in-One Plan*

The ultimate goal of PJM's proposed LTRTP Protocol is the development of an All-in-One Plan that addresses both Core LT Needs and Additional LT Needs through the more efficient or cost-effective set of solutions to address those needs. PJM will develop an All-in-One Plan that builds on the Core Plan and addresses Additional LT Needs through Long-Term Transmission Projects (which could be a cluster of inter-related proposals that collectively address a common set of Additional LT Needs) that individually satisfy a PARSEC-requested 1.25:1 benefit-to-cost ratio threshold.[406] These additional "projects" could represent simple additions on top of the "Core Plan" or "project replacements" to those in the Core Plan that more holistically address both needs.

Thus, the All-in-One Plan will be composed of Long-Term Transmission Projects that address both types of Long-Term Transmission Needs. Those Long-Term Transmission Projects that address the Additional LT Needs must individually meet a 1.25:1 benefit-to-cost ratio. As such, the All-in-One Plan involves holistically planning for reliability, economic, and policy drivers facing the PJM Region over the twenty-year planning horizon. The All-in-One Plan will be the transmission plan considered for development going forward through PJM's LTRTP Protocol.

Long-Term Transmission Projects that are not required but for Additional LT Needs may either address both Core LT Needs and Additional LT Needs or only Additional LT Needs. In both cases, the portion of such projects addressing an Additional LT Need will be evaluated to determine whether it meets the All-in-One Plan Incremental Benefit-to-Cost Ratio. For Additional LT Needs, the ratio is measured on an individual project

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[406] Proposed Operating Agreement, Schedule 6-C, section 1.11(a).

basis, i.e., measuring solely a Long-Term Transmission Project (in whole or in part), such that the ratio will be the sum of all incremental benefits from such project in relation to the Additional LT Need being addressed, as quantified in accordance with proposed section 1.9(b), divided by the sum of all incremental costs associated with the facilities needed to address such need, as determined in accordance with proposed section 1.9(a).[407] The benefits and costs would be measured over at least a 20-year horizon with the same period used for both metrics, compliant with the Final Rule.[408]

In other words, this 1.25:1 benefit-to-cost ratio threshold applies only to project(s) that address Additional LT Needs beyond an already identified Core LT Needs project.[409] For example, if the Core Plan includes a Long-Term Transmission Project to address a Core LT Need and that project can be modified so as to also address an Additional LT Need, then the costs and benefits associated with that modification will be incrementally measured to determine whether the modification satisfies the All-in-One Plan Incremental Benefit-to-Cost Ratio of 1.25 to 1. And, to the extent an entire Long-Term Transmission Project would solely address one or more Additional LT Needs (and not any Core LT

[407] *See* proposed Operating Agreement, Schedule 6-C, section 1.11(a)(1) ("The All-in-One Plan Incremental Benefit-to-Cost Ratio shall equal the quotient of [the sum of all the incremental benefits of the Long-Term Transmission Project's facilities associated with addressing Additional LT Need(s) as compared to the benefits of such Long-Term Transmission Project's facilities associated with addressing Core LT Need(s)] divided by [the sum of all the incremental costs of the Long-Term Transmission Project's facilities associated with addressing Additional LT Need(s) as compared to the costs of such Long-Term Transmission Project's facilities associated with addressing Core LT Need(s)], where benefits will be the present value of all benefits determined in accordance with section 1.9(b) determined for at least the first 20 years' of the Long-Term Transmission Project's life, and costs will be the present value of the costs determined in accordance with section 1.9(a) determined for the same timeframe as the benefits.").

[408] Order No. 1920 at P 859. As noted, if there are no projects addressing Additional LT Needs that meet the applicable benefit-to-cost ratio, then the All-in-One Plan and Core Plan will be the same, but only the All-in-One Plan advances.

[409] Proposed Operating Agreement, Schedule 6-C, section 1.11(a).

Needs), then the entire cost of that project would be compared against all the benefits that it would provide.

Compared with the Core Plan Benefit-to-Cost Ratio of 1:1, the All-in-One Incremental Plan Benefit-to-Cost Ratio establishes a higher required benefits threshold of 1.25:1 to select project(s) addressing Additional LT Needs. The lower threshold for the Core Plan is reflective of the relative significance of addressing Long-Term Transmission Needs that must be addressed to ensure system reliability. Both benefit-to-cost thresholds fall within ranges deemed permissible by the Final Rule.[410]

Consistent with PJM's continued commitment to transparency, PJM proposes to provide an explanation for why PJM does not propose to include in the All-in-One Plan any proposal that could address a posted Additional LT Need.[411] As with the Core Plan, PJM will provide its explanation (as part of the posting made in accordance with proposed Schedule 6-C section 1.12(a)) at this step of the evaluation and selection process to comply with the Final Rule's "requirement that transmission providers' evaluation of transmission facilities must culminate in a determination that is sufficiently detailed for stakeholders to understand why a particular Long-Term Regional Transmission Facility (or portfolio of such Facilities) was selected or not selected."[412]

Finally, under proposed section 1.11(b), if no proposals sufficiently address a posted Additional LT Need, PJM may propose a project and present it to TEAC for review

[410] *See* Order No. 1920 at P 958 ("[T]ransmission providers may not impose as a selection criterion a minimum benefit-cost ratio that is higher than 1.25-to-1.00.").

[411] Proposed Operating Agreement, Schedule 6-C, section 1.11(a)(2). As a hypothetical, assume a project proposal meets an Additional LT Need and would resolve a reliability challenge on the system, but it is based on an unreasonably long timeline or is not developmentally feasible under the circumstances, and therefore it is not included in the All-in-One Plan.

[412] Order No. 1920 at PP 954, 966.

and comment,[413] compliant with the Final Rule.[414] In that case, the Designated Entity(ies) shall be the Transmission Owner(s) in the Zone(s) where the Long-Term Transmission Project is to be located.[415] Otherwise, PJM may open a 30-day or longer window to solicit proposals to address such need.[416] Any proposal through these means would need to satisfy All-in-One Benefit to Cost Ratio of 1.25:1 to be eligible to be included in the All-in-One Plan.

4. *Posting and review of the Core Plan and the All-in-One Plan*

PJM will post the initial Core Plan and All-in-One Plan to the PJM website and present them to both PARSEC and TEAC for review and comment. As discussed, PJM will also post any proposals that would address Long-Term Transmission Needs but were not identified for inclusion in either plan.[417]

Comparing the Core Plan and the All-in-One Plan will provide states and third parties valuable information as to the costs, associated benefits, and efficiencies of needed long-term transmission reinforcements necessary to maintain reliability consistent with the implementation of the governmental laws, regulations, and policies, as provided by the information within Factor Categories 1-3. The two plans will provide data enabling states and project sponsors to prudently make decisions regarding infrastructure investment to

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[413] Proposed Operating Agreement, Schedule 6-C, section 1.11(b).

[414] Order No. 1920 at P 957 ("[T]ransmission providers have an affirmative obligation to identify Long-Term Regional Transmission Facilities that more efficiently or cost-effectively address Long-Term Transmission Needs, regardless of whether any stakeholder proposes potential Long-Term Regional Transmission Facilities for consideration in Long-Term Regional Transmission Planning.").

[415] Proposed Operating Agreement, Schedule 6-C, section 1.11(b).

[416] Proposed Operating Agreement, Schedule 6-C, section 1.11(b).

[417] Proposed Operating Agreement, Schedule 6-C, section 1.12(a) ("Such posting shall occur within three years of the commencement of the Long-Term Regional Transmission Plan study process."). *See infra* section II.G.6 (Timing of projection selection) (discussing the three-year selection requirements in Order No. 1920).

support their policies and further inform on the impacts of their policies. For example, the Core Plan may include a 345 kV transmission line addressing a Core LT Need, but to meet needs holistically the All-in-One Plan would include a 500 kV transmission line addressing the same Core LT Need plus one or more Additional LT Needs. Thus, seeing the 345 kV line in the Core Plan and the 500 kV line in the All-in-One Plan would allow the incremental costs and impacts associated with addressing the Additional LT Needs to be known and measurable, allowing states to make informed decisions on paying for up-sizing the project to 500 kV.

Through engagement with PARSEC, PJM understands that such data is valuable to the states. Indeed, as discussed, PARSEC requested application of the differing benefit-to-cost ratio selection criteria for the Core Plan and the All-in-One Plan, as well as the different measurement approach (portfolio or project).

Prior to the posting of Core Plan and All-in-One Plan, PJM will, using the proposed Evaluation Criteria, evaluate whether selection of each Long-Term Transmission Project identified in the Core Plan and/or All-in-One Plan would be "timely and appropriate" in this Long-Term Regional Transmission Plan cycle.[418] Such projects will be "preliminarily selected" for inclusion in the recommended Long-Term Regional Transmission Plan, as explained in the next section.[419]

Following initial review and comment from PARSEC and TEAC, PJM may conduct further study and evaluation and "shall post on the PJM website and present to

[418] Proposed Operating Agreement, Schedule 6-C, section 1.12(b).

[419] Proposed Operating Agreement, Schedule 6-C, section 1.12(b).

both the [PARSEC] and the [TEAC] any revised Core Plan and the All-in-One Plan for review and comment."[420]

5. Selection of projects that are timely and appropriate

PJM's approach of selecting only those projects which would be timely and appropriate to advance in the current cycle allows PJM's Board-approved Long-Term Regional Transmission Plan to include only those projects that are prepared to move into active development and construction. Conversely, it avoids including solutions for which the development timeline would not need to be initiated until after the next Long-Term Regional Transmission Plan cycle concludes and projects are selected for that planning cycle. Indeed, in evaluating when a project should be selected to go forward, PJM will evaluate how the transmission need being addressed presents itself across the scenarios and over the entire planning horizon, accounting for the evolution of the transmission need over time beyond the initial required in-service date. As Order No. 1920 recognized, while long-term regional transmission planning inherently must include a degree of uncertainty, it appropriately sought to minimize the impact of such uncertainty[421] through the requirement to measure seven enumerated benefits.[422] PJM's "timely and appropriate" final selection criterion furthers that objective.

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[420] Proposed Operating Agreement, Schedule 6-C, section 1.12(c).

[421] *See, e.g.*, Order No. 1920 at P 229 ("We disagree with arguments that the Commission should not require Long-Term Regional Transmission Planning because, certain commenters claim, doing so will introduce excessive uncertainty into regional transmission planning, transmission providers will make forecasting errors, or the final rule will result in regional transmission planning that is speculative. To the contrary, we believe that the reforms adopted in this final rule account for and seek to reduce the inherent uncertainty in forward-looking regional transmission planning while ensuring that transmission providers, through their regional transmission planning processes, identify, evaluate, and select Long-Term Regional Transmission Facilities that more efficiently or cost-effectively address Long-Term Transmission Needs, thus helping to ensure just and reasonable rates.").

[422] *See* Order No. 1920 at P 720; Order No. 1920-A at P 223 (setting aside the Final Rule's requirement to use seven required benefits and instead "rely on economic and reliability drivers.").

In addition, by deferring selection of projects for which the development process (e.g., permitting applications, etc.) does not need to commence until after the next Long-Term Regional Transmission Plan cycle, PJM retains the flexibility to best address the Long-Term Transmission Needs that may be identified in the next cycle. That is, selection of a project now that does not need to be acted on until after the next cycle could hamstring PJM's efforts to identify the set of Long-Term Transmission Projects that address the needs identified in that next cycle under a different set of assumptions in a more efficient or cost-effective manner.

PJM's approach is compliant with the Final Rule's objective of maximizing benefits without over-building.[423] That is, selection of a project (and thus incorporation of such project into the Long-Term Regional Transmission Plan and the Regional Transmission Expansion Plan) that does not need to start development for at least five years could result in selecting the wrong project as needs may change with time leading to changes in the size, configuration or even nature of a specific solution that may have been considered as efficient or cost-effective in a 3 or 5 year earlier planning cycle. PJM also realizes the need to proceed with transmission developments prudently to meet the required in service dates but not so far-in advance of what is necessary to account for potential (and likely) changes or variations in assumptions. PJM considers this appropriate and it will not only preserve opportunities to further refine longer, but yet not needed upgrades, but also preserves resources, soften rate impacts and reduces regulatory and consultation burden for these needs. Indeed, the need for which such project was selected may not be present in

[423] Order No. 1920 at P 964 (requiring transmission providers to "propose evaluation processes, including selection criteria, that seek to maximize benefits accounting for costs over time without over-building transmission facilities").

the next cycle, yet the project could continue to be developed and PJM could be precluded from reevaluating the need for such project if the three circumstances the Final Rule permits for reevaluation do not arise. In summary, PJM considers this to be the best approach to ensuring that the LTRTP Protocol results in solutions that maximize benefits relative to costs without over-building.

PJM will post the initial Core and All-in-One Plans, which will identify those projects that have been preliminarily selected, within three years of the commencement of the Long-Term Regional Transmission Plan study process, as discussed in the following section.

6. *Timing of project selection*

The Final Rule requires transmission providers to "designate a point in the evaluation process at which they will determine whether to select or not select identified Long-Term Regional Transmission Facilities" that is "no later than three years" after the start of the Long-Term Regional Transmission Plan cycle.[424]

a. PJM's proposal complies with the Final Rule.

To comply with this requirement, PJM will make preliminary selections within three years of the commencement of the Long-Term Regional Transmission Plan cycle.[425] Following preliminary selections, Long-Term Transmission Projects addressing Additional LT Needs will be subject to the outcome of cost allocation discussions and decisions by the states, including the state opt-out mechanism and voluntary funding

[424] Order No. 1920 at P 955; Order No. 1920-A at PP 259-261.

[425] Proposed Operating Agreement, Schedule 6-C, section 1.12(a).

decisions, as discussed further below in section II.G.7 (State opt-out mechanism and voluntary funding opportunities).

As PJM's Transmission Planning Director, Dr. Sami Abdulsalam, explains in his Declaration, accommodating states' decisions about state opt-out and voluntary funding may together take "six to twelve months" beyond the end of the third year of the five-year cycle (Year Three) because those decisions will require time to allow for state and regulatory bodies' approval processes and cost allocation discussions to take place, the results of which will likely lead to revisions to the preliminarily-identified All-in-One Plan.[426] During this additional time, states will make "voluntary funding opportunities and possible state opt-out decisions[;]" and PJM will "finalize optimization of the Long-Term Regional Transmission Plan[;] finalize cost allocation of selected Long-Term Transmission Projects[;] and finalize review with states and stakeholders before submitting the recommended Long-Term Regional Transmission Plan to the PJM Board."[427]

To be clear, even though PJM calls this a "preliminary" selection point, it meets the Final Rule's requirement because PJM is done with its selection decisions at this point. If no one chooses to voluntarily-fund a project and no state opt-out decisions affect project selection, those preliminarily-selected projects *are* the final selected projects, as Dr. Abdulsalam explains.[428]

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[426] Abdulsalam Declaration at ¶¶ 8, 10, 14, 37, 61-62.

[427] Abdulsalam Declaration at ¶ 14.

[428] Abdulsalam Declaration at ¶¶ 61 & 63.

b. In the alternative, PJM's proposal is consistent with or superior to the Final Rule.

In the alternative, PJM seeks a Commission finding that the preliminary selection of projects by three years after the start of the LTRTP Protocol process is consistent with or superior to the Commission's timing requirement in the Final Rule.[429] To support this request, Dr. Abdulsalam has provided a Declaration which explains the expected timing of PJM's LTRTP Protocol process.[430] Specifically, he explains how PJM will be making its selection decisions at the end of the third year of the Long-Term Regional Transmission Plan cycle following its analyses leading to the Core Plan and All-In-One Plan.[431] However, those selection decisions will be preliminary and solutions addressing Additional LT Needs (which may also affect solutions to some Core LT Needs) will still be subject to the outcome of the cost allocation-related discussions and negotiations, including the state opt-out mechanism, the voluntary funding opportunity, and any other *ex post* cost allocation discussions that the states wish to have.[432] As Dr. Abdulsalam describes, some of these steps may "necessitate activities beyond the third year."[433]

PJM's proposal is consistent with or superior to the Commission's Final Rule requirement because, as discussed below, PJM has calculated and built in time for all the requirements the Commission has provided, including transparency and stakeholder provisions, and this is the shortest timeline that can be accommodated. Importantly, it

[429] Order No. 1920 at PP 379, 955.

[430] Abdulsalam Declaration at ¶¶ 6-11 (explaining purpose of Declaration).

[431] Abdulsalam Declaration at ¶¶ 9 & 68.

[432] Abdulsalam Declaration at ¶ 14. *See* Order No. 1920 at P 1406 (requiring states to be given no later than six months after project selection for discussions regarding ex post cost allocation methodologies); Order No. 1920-A at PP 24, 708 (same).

[433] Abdulsalam Declaration at ¶ 15.

provides adequate time for determining projects' cost allocation.[434] Dr. Abdulsalam's Declaration provides evidence for why conducting the LTRTP Protocol process will be expected to take several years.

First, PJM has significant experience with the current RTEP Protocol process and has a good estimate for how long assumption development, modeling analyses, and competitive windows take. Dr. Abdulsalam, who will lead PJM's Long-Term Regional Transmission Plan process once approved by the Commission, explains how PJM has "over a decade of successful experience" with the current RTEP Protocol and explains that the processes required by the RTEP Protocol take the full two years with "little time to spare."[435] He describes the current RTEP Protocol processes in detail and illustrates how the reliability and market efficiency cycles work.[436] For example, for reliability, Dr. Abdulsalam explains how PJM currently develops assumptions, develops nearer-term and long-term models, reviews applicable reliability planning criteria and conducts analyses, develops solutions to address near-term and long-term criteria violations through proposals submitted through a competitive window, evaluates and selects solutions, reviews those solutions with TEAC and stakeholders, all before submitting to the PJM Board for

[434] Abdulsalam Declaration at ¶¶ 10, 67, Table 1 (Table 1 is identical in both this transmittal letter and the Abdulsalam Declaration), Appendix 1 (Illustration of Proposed LTRTP Protocol Timeline Estimates (Combined)) & Appendix 2 (Illustration of Proposed LTRTP Protocol Timeline Estimates (By Year)). The Commission has found proposals to be consistent with or superior to the provided standard in cases when it benefits customers or stakeholders. *See, e.g.*, *Pub. Serv. Co. of Colo.*, 180 FERC ¶ 61,084, at P 7 (2022) (accepting Public Service Company of Colorado's Tariff revisions as consistent with or superior to the Commission's *pro forma* LGIP because "the proposal will provide more time to correct deficient interconnection requests and more time for interconnection customers to modify their requests"); *Ariz. Pub. Serv. Co.*, 137 FERC ¶ 61,099, at P 9 (2011) ("We accept APS's proposal to use a standard 6-month study cluster for system impact studies as consistent with or superior to the *pro forma* LGIP because it provides better coordination of interconnection studies and more certainty regarding milestones for interconnection customers.").

[435] Abdulsalam Declaration at ¶ 12.

[436] Abdulsalam Declaration at ¶ 12 & section III.A (comparing the RTEP Protocol cycles with the LTRTP Protocol cycles).

approval.[437] Likewise, for market efficiency planning, the PJM planning team conducts a similar set of procedures across a 24-month period (developing assumptions, conducting near-term market efficiency analyses, updating models, evaluating solutions following a competitive period, selecting projects, and reviewing them with stakeholders before submitting to the PJM Board).[438]

Second, the nature of long-term transmission planning will require additional technical complexities compared to planning under the current RTEP Protocol. Dr. Abdulsalam explains how he expects the LTRTP Protocol process to take even longer than the RTEP Protocol process because of its complexity, integration of multiple drivers (reliability, public policy, market efficiency, generation deactivations, or interconnection-related drivers) into a single cycle, inherent uncertainty that needs to be managed and accounted for, and the additional layers of consultations (with both states and broader stakeholders) required.[439]

For example, PJM's proposed LTRTP process will require PJM to develop more complex tools and processes because the LTRTP Protocol "attempts to better address the increased uncertainty in the longer-term horizon through the development and analysis of multiple scenarios that more holistically integrate public policy drivers with reliability, economic, and operational performance needs."[440] Likewise, preparation for the competitive window under the LTRTP Protocol is expected to take longer because "(i) the expected higher volume of transmission proposals submitted in response to the long-term

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[437] Abdulsalam Declaration section III.A.

[438] Abdulsalam Declaration section III.A.

[439] Abdulsalam Declaration at section III.B.

[440] Abdulsalam Declaration at ¶ 28.

competitive transmission solicitation window; (ii) the complexity of the proposals which will likely include new greenfield interstate backbone transmission and complex interactions between proposals in various parts of the system; (iii) the evaluation of proposal performance across the multiple scenarios and sensitivities; (iv) the calculation and comparison of a set of benefits unique to long-term planning; (v) constructability and financial review of all candidate proposals; and (vi) regular updates and solicitation of feedback from PARSEC and stakeholders as the evaluation progresses."[441]

Third, the LTRTP Protocol process is expected to take several years because of the transparency and stakeholder feedback provisions that are hardcoded into the process (and Operating Agreement provisions), as shown in Dr. Abdulsalam's Declaration and reprinted in section V (Stakeholder Participation and Transparency Provisions and Compliance with Transmission Planning Principles).[442] For example, time is needed for PJM to collect critical data from states and stakeholders "like state and local policies, In-Kind Replacement Facility Needs, and development opportunities—and to vet the inputs and methods for the scenarios and sensitivities to ensure the integrity, quality, and effectiveness of the process."[443]

As Dr. Abdulsalam explains, many of the steps in the LTRTP Protocol are likely to take longer than the corresponding step under the RTEP Protocol so that sufficient feedback can be gathered. As Table 1 (General Stages of the LTRTP Protocol) in both Dr. Abdulsalam's Declaration and section V of this transmittal letter shows, stakeholders have opportunities to review and comment at nearly every step of the process: gathering data,

[441] Abdulsalam Declaration at ¶ 36.

[442] Abdulsalam Declaration at section IV.

[443] Abdulsalam Declaration at ¶ 31.

developing assumptions, developing scenarios, conducting studies and reviewing results, identifying Long-Term Transmission Needs, reviewing identification of Right-Sized Replacement Facilities, conducting a single, holistic competitive window, reviewing the analysis of PJM's application of evaluation and selection criteria, development of Core and All-in-One Plans, finalizing cost allocation and voluntary funding, optimizing the All-in-One-Plan for the PJM Board's review and approval, and reevaluation.[444] Importantly, PJM is allocating sufficient time for these steps to ensure that participation is meaningful.

In the Declaration, Dr. Abdulsalam explains each step of PJM's proposed process and estimates where those steps will fall in the general timeline:[445]

- In Year Minus One (or the "pre-cycle") and Year One, PJM will be gathering data, developing assumptions, developing scenarios and commencing model building activities, and coordinating with states and stakeholders. The PJM Transmission Owners will be assessing asset conditions for in-kind replacement estimates, and the states will be providing policy inputs and other feedback on assumptions and scenarios, including request an additional scenario for analyses purposes.[446]

- In Year Two, PJM will be refreshing the capacity expansion model with the best available data after it is built in the prior year, building power flow and production cost models, applying sensitivities, performing scenario analyses, identifying Long-Term Transmission Needs, identifying opportunities for right-sizing, and preparing to conduct a competitive solicitation, along with all the collaborative and participative processes that are built into each step. [447]

- In Year Three, PJM will solicit proposals to address the Long-Term Transmission Needs through a competitive solicitation window, evaluate and select proposals, provide regular progress updates and opportunities to review for states and stakeholders, incorporate received feedback, and at the

[444] *Infra* section V (Table 1), Abdulsalam Declaration (Table 1). Table 1 is identical in both this transmittal letter and the Abdulsalam Declaration. Transparency provisions in Table 1 are marked by an asterisk.

[445] Abdulsalam Declaration at ¶¶ 38-61. These months are estimates and may change depending on the circumstances of each planning cycle.

[446] Abdulsalam Declaration at section V.

[447] Abdulsalam Declaration at section VI.

> end of year three, present the preliminary Core Plan and All-in-One Plan, including identifying those projects that are preliminarily selected.[448]

As Dr. Abdulsalam explains, it will take up to three years to get to the preliminary selection stage, not accounting for processes that may take the process beyond Year Three (e.g., time for states to decide whether to opt-out of cost allocation and voluntary funding opportunities and then optimizing the plan). He emphasizes that "selection will be complete by the end of Year Three if there are no state opt-out decisions, no voluntary funding decisions, and no further cost allocation negotiations."[449] More likely, however, PJM will need to allocate up to another year for these decisions, which "will require states to follow formalized internal processes in order to decide whether to opt-out," "require [] states to coordinate internally with their agencies and possibly their legislatures to commit the funds necessary to take advantage of" a voluntary funding opportunity, and require "[other] entities to obtain the financing for such a large infrastructure project."[450]

In sum, "PJM will develop its preliminary All-in-One Plan by the end of Year Three [in which PJM will preliminarily select projects], and then the process may need up to an additional 12 months to finalize (to account for state and interested stakeholder decisions related to voluntary funding and other cost allocation decisions) and present to the PJM Board for review and approval."[451] Accordingly, Dr. Abdulsalam estimates "it could take up to four years between the initial assumptions meeting and PJM Board approval of the Long-Term Regional Transmission Plan at least during its first cycle."[452]

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[448] Abdulsalam Declaration at section VII.

[449] Abdulsalam Declaration ¶ 63.

[450] Abdulsalam Declaration at section VIII.

[451] Abdulsalam Declaration at ¶ 68.

[452] Abdulsalam Declaration at ¶ 68.

According to Dr. Abdulsalam,[453] this is already an ambitious timeline for PJM and its stakeholders to meet, particularly during the first Long-Term Regional Transmission Plan cycle. Indeed, PJM believes that its proposal meets the *higher* burden of being necessary to achieve the Commission's participation and transparency requirements under the Final Rule.[454] If the Commission finds that PJM's proposed three-year period to preliminarily select solutions—subject to cost allocation-related discussions—does not comply with the Final Rule, then PJM requests the Commission to provide guidance on which steps of the process can be removed or shortened, as discussed above.[455]

7. *State opt-out mechanism and voluntary funding opportunities*

After the All-in-One Plan is posted and before the recommended Long-Term Regional Transmission Plan is developed, states will have an opportunity to "opt out" of costs for projects addressing Additional LT Needs during a defined period.[456] This concept of a state opt-out mechanism was developed through conversations with PARSEC. The state opt-out mechanism originated from PJM's engagement with PARSEC and will be a key step in PJM's proposed LTRTP Protocol. However, the development of this component of PJM's proposed LTRTP Protocol process has proceeded on a different track

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[453] Abdulsalam Declaration at ¶ 69 ("I believe it is already ambitious for PJM to commit to preliminary selection by the end of Year Three.").

[454] As the Commission explained in *El Paso Elec. Co.*, 177 FERC ¶ 61,212 (2021), utilities must meet the "necessary" standard for certain types of deviations. In the context of non-conforming interconnection agreements, for example, the Commission explained that "non-conforming agreements may be necessary for interconnections with specific reliability concerns, novel legal issues, or other unique factors" and "a transmission provider seeking a case-specific deviation from its *pro forma* interconnection agreement bears a high burden to justify and explain that its changes are not merely 'consistent with or superior to' the *pro forma* agreement, but are necessary changes." *Id.* at P 24.

[455] Abdulsalam Declaration at ¶ 69 ("Requiring PJM to complete the final version of the Long-Term Regional Transmission Plan by the end of Year Three will necessarily require PJM to shorten the stakeholder process or eliminate some of the consultation opportunities at various points in the process, which I do not believe FERC would have intended.").

[456] Proposed Operating Agreement, Schedule 6-C, section 1.13.

than the proposal presented in this filing, because it is inherently intertwined with the cost allocation compliance filing being developed by the PJM Transmission Owners in consultation with PARSEC. As the cost allocation approach is developed and finalized, PJM will develop rules for effectuating the state opt-out mechanism. PJM will file those rules in June 2026 concurrent with the PJM Transmission Owners' submission of the cost allocation rules.

Regardless of the final form of the state opt-out mechanism, PJM intends to support informed state decision-making through the provision of detailed benefit-to-cost analyses for each project proposed to address Additional LT Needs and detailed benefits distribution information of the extent to which each state is expected to benefit from each project that solves Additional LT Needs.

The Final Rule also has specific requirements for voluntary funding opportunities.[457] However, because the voluntary funding opportunity mechanism is inextricably intertwined with cost allocation matters, PJM is working with the PJM Transmission Owners and PARSEC to finalize the voluntary funding proposal. PJM plans to submit a proposal in its June 2026 filing. On a high-level, however, PJM expects to provide ample notice and time for states and long-term transmission developers to identify and evaluate proposals they may want to fund, to post information for the voluntary funding opportunity, and to take sufficient time to make voluntary funding decisions. PJM also expects to develop a *pro forma* voluntary funding agreement to memorialize such commitments.

[457] *See* Order No. 1920 at P 1012 (describing the four requirements for voluntary funding opportunities).

8. Establishment of the Long-Term Regional Transmission Plan

The final stage in the LTRTP Protocol is the development of the recommended Long-Term Regional Transmission Plan for review and approval by the PJM Board.[458] As the last stage, this Long-Term Regional Transmission Plan will be based on (i) the All-In-One Plan (pursuant to proposed section 1.11), (ii) the result of the state opt-out mechanism (pursuant a to-be proposed section 1.13), and (iii) any voluntary funding agreements (pursuant a to-be proposed section 1.14).[459]

Prior to presenting the recommended Long-Term Regional Transmission Plan to the PJM Board, PJM shall "consult with [PARSEC] and [TEAC] on such recommended Long-Term Regional Transmission Plan."[460] Indeed, PJM intends to follow the same approach it utilizes for stakeholder outreach when providing recommended Regional Transmission Expansion Plans to the PJM Board—review the recommended plan with stakeholders twice (i.e., conduct first and second reads)—before advancing any recommended transmission plan to the PJM Board for its review and approval.

a. Processes for developing the recommended Long-Term Regional Transmission Plan

To develop the recommended Long-Term Regional Transmission Plan, PJM will "optimize the All-in-One Plan" based on the outcome of the state opt-out mechanism and any voluntary funding agreements.[461] Such optimization of the previously posted All-in-One Plan is necessary. That is, given that transmission solutions often interact with one another, the addition or subtraction of a solution to an already determined set of solutions

[458] Proposed Operating Agreement, Schedule 6-C, section 1.16.

[459] Proposed Operating Agreement, Schedule 6-C, section 1.16(a).

[460] Proposed Operating Agreement, Schedule 6-C, section 1.16.

[461] Proposed Operating Agreement, Schedule 6-C, section 1.16(b).

(like the All-in-One Plan) may dictate modification of an included solution to ensure all identified Long-Term Transmission Needs continue to be met in a more efficient or cost-effective manner. For example, in the event that a project supported through voluntary funding and a project in the All-in-One Plan solve the same Long-Term Transmission Need, PJM will optimize those solutions (e.g., in such instance, by removing the project from the All-In-One Plan) to reduce redundancy and improve project selection efficiency.

Therefore, to ensure that the holistic All-in-One Plan continues to be composed of more efficient or cost-effective set of solutions, PJM needs to account for the effects of any modification to the previously developed and posted All-in-One Plan that would result from the state opt-out mechanism and voluntary funding opportunities. Optimizing the All-in-One Plan to consider this additional data accomplishes this task. To the extent the state opt-out mechanism is not utilized and there are no projects supported by voluntary funding agreements, PJM may not need to optimize the previously posted All-in-One Plan.

Once an optimized All-in-One Plan is developed, PJM will then evaluate, using the proposed Evaluation Criteria, whether selection of each Long-Term Transmission Project would be "timely and appropriate" for inclusion in the recommended Long-Term Regional Transmission Plan.[462] Such evaluation is the same as PJM performs before initially posting the All-in-One Plan for review, as discussed above in section II.G.4 (Posting and review of the Core Plan and the All-In-One Plan). As stated in the proposed Operating Agreement's language, "[i]n such evaluation, [PJM] shall consider each Long-Term Transmission Project's development and implementation timeline, with particular

[462] Although the Proposed Operating Agreement, Schedule 6-C, section 1.9 criteria were applied in the preliminary selection process, they are applied again here as necessary to account for any changes to the plan as a result of the re-assessment.

consideration of whether such timeline must commence prior to the completion of the next Long-Term Regional Transmission Plan cycle."[463] As such, the only project solutions that advance to the PJM Board for its review and approval are ones that are "timely and appropriate," in that they are more appropriate for recommendation in the current Long-Term Regional Transmission Plan cycle than the next cycle. All projects associated with a filed voluntary funding agreement (whether executed or unexecuted) will be deemed "timely and appropriate" for selection purposes.[464]

In sum, the recommended Long-Term Regional Transmission Plan will be composed only of: (i) selected Long-Term Transmission Projects from the All-in-One Plan; and (ii) any Long-Term Transmission Project supported by voluntary funding. [465]

b. <u>Other requirements of the recommended Long-Term Regional Transmission Plan</u>

The recommended Long-Term Regional Transmission Plan must also identify certain information regarding the selected projects. Like with the All-in-One Plan, PJM will provide an explanation to comply with the Final Rule's "requirement that transmission providers' evaluation of transmission facilities must culminate in a determination that is sufficiently detailed for stakeholders to understand why a particular Long-Term Regional Transmission Project (or portfolio of such projects) was selected or not selected."[466] The Final Rule requires a "quantification of how the estimated benefits are imputed to each

[463] Proposed Operating Agreement, Schedule 6-C, section 1.16(b).

[464] Proposed Operating Agreement, Schedule 6-C, section 1.16(b).

[465] Proposed Operating Agreement, Schedule 6-C, section 1.16(c).

[466] Order No. 1920 at PP 954, 966. *See* proposed Operating Agreement, Schedule 6-C, section 1.16(a).

Zone, as such benefits can be reasonably estimated[,]" a requirement with which PJM will comply.[467]

In addition, the recommended Long-Term Regional Transmission Plan must identify the entity responsible for developing and constructing each selected project.[468] Here again, PJM is carrying over the rules from its Order No. 1000 process and using the familiar "Designated Entity" and "Designated Entity Agreement" concepts. Thus, the recommended Long-Term Regional Transmission Plan will identify the Transmission Owner and/or Nonincumbent Developer "to construct, own and, unless otherwise provided, finance each recommended Long-Term Transmission project."[469]

The criteria considered in determining the Designated Entity[470] and the mechanics for notifying the Designated Entity[471] and for acceptance of the Designated Entity designation[472] for Long-Term Transmission Projects in proposed section 1.15 are the same as under the RTEP Protocol.[473]

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[467] Proposed Operating Agreement, Schedule 6-C, section 1.16(e). Order No. 1920-A at P 242 (requiring transmission providers "make available, on a password-protected portion of OASIS or other password-protected website, a breakdown of the allocated costs, by zone (i.e., by transmission provider retail distribution service territory/footprint or RTO/ISO transmission pricing zone), and a quantification of the benefits imputed to each zone, as such benefits can be reasonably estimated, when a cost allocation method is agreed upon under a State Agreement Process or, if no State Agreement Process is used, at the time the transmission provider selects the Long-Term Regional Transmission Facility").

[468] *See* Proposed Operating Agreement, Schedule 6-C, section 1.16(d).

[469] Proposed Operating Agreement, Schedule 6-C, section 1.16(c).

[470] Proposed Operating Agreement, Schedule 6-C, section 1.15.1 (listing criteria to determine the Designated Entity for a Long-Term Transmission Project).

[471] Proposed Operating Agreement, Schedule 6-C, section 1.15.2(a).

[472] Proposed Operating Agreement, Schedule 6-C, section 1.15.2(b).

[473] *Compare* proposed Operating Agreement, Schedule 6-C, section 1.15, *with* Operating Agreement, Schedule 6, sections 1.5.8(f), (i), (j) (explaining the "Entity-Specific Criteria Considered In Determining The Designated Entity;" "Notification Of Designated Entity;" and "Acceptance of Designation.")

Further, in proposed section 1.15.2(c), PJM has carried over the same provisions regarding when the Transmission Owner must be the Designated Entity, but made the provisions applicable to Long-Term Transmission Projects.[474] For instance, consistent with Operating Agreement, Schedule 6, section 1.5.8(*l*), PJM proposes to specify in proposed Operating Agreement, Schedule 6-C, section 1.15.2(c) that the Transmission Owner must be the Designated Entity to the extent the selected project is a Transmission Owner Upgrade,[475] i.e., "an upgrade to a Transmission Owner's own transmission facilities, which is an improvement to, addition to, or replacement of a part of, an existing facility and is not an entirely new transmission facility."[476] Additionally, as previously described in section II.E,[477] above, proposed section 1.15.2(c)(i) clarifies that that the Incumbent Transmission Owner must be the Designated Entity for any Transmission Owner Upgrade, "including any upgrade using an alternative transmission technology."[478]

PJM is proposing to use the same *pro forma* Designated Entity Agreement for projects selected in either the Regional Transmission Expansion Plan or Long-Term Regional Transmission Plan.[479] The entity designated "to construct, own and, unless otherwise provided, finance each recommended Long-Term Transmission Project" will be a "Designated Entity" and a Designated Entity Agreement will cover such development

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[474] *See* proposed Operating Agreement, Schedule 6-C, section 1.15.2(c).

[475] *See* Operating Agreement, Schedule 6, section 1.5.8(*l*); proposed Operating Agreement, Schedule 6-C, section 1.5.2(c).

[476] Operating Agreement, section 1, Definitions S-T (defining Transmission Owner Upgrade).

[477] *Supra* section II.E (Consistent with its Current Order No.1000-Compliant Regional Transmission Planning Process, PJM Will Administer a Competitive Solicitation For Project Proposals and Will Require That Proposals Demonstrate Consideration of Alternative Transmission Technologies.)

[478] Proposed Operating Agreement, Schedule 6-C, section 1.15.2(c)(i). *See also* Operating Agreement, Schedule 6, section 1.5.8(a)(5) (same).

[479] *See* Tariff, Attachment KK.

and construction, except to the extent the project is a Right-Sized Replacement Facility. For each selected Right-Sized Replacement Facility in the recommended Long-Term Regional Transmission Plan, the Transmission Owner that is the "owner of the existing asset that has been identified and selected to be a Right-Sized Replacement Facility shall be designated to construct and own or finance" such facilities, and no Designated Entity Agreement will be required[480] which complies with the Final Rule's directive providing a federal right of first refusal to transmission owners for right-sized facilities.[481]

The recommended Long-Term Regional Transmission Plan shall identify, "for each recommended Long-Term Transmission Project, the cost allocations consistent with [Tariff, Schedule 12[482]], including a quantification of how the estimated benefits are imputed to each Zone, as such benefits can be reasonably estimated."[483] The costs of Long-Term Transmission Projects included in the recommended Long-Term Regional Transmission Plan will be allocated according to a Commission-approved cost allocation

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[480] Proposed Operating Agreement, Schedule 6-C, section 1.7(b). The Commission has clarified that a Designated Entity Agreement need not be executed for transmission projects "designated to the incumbent Transmission Owner" for which no competitive proposal window is opened. *See Am. Mun. Power, Inc. v. PJM Interconnection, L.LC.*, 188 FERC ¶ 61,055, at P 74 (2024). As explained above, Right-Sized Replacement Facilities will be posted in the competitive window for informational purposes rather than as competitive proposals. Accordingly, the exclusion from the requirement to execute a Designated Entity Agreement applies to this requirement.

[481] *See* Order No. 1920 at P 1702.

[482] PJM's Governing Documents will be updated to reflect the cost allocation methodology on or by June 12, 2026. *See supra* section I.E (The Scope of This Compliance Filing Is Informed by the Allocation of Filing Rights Between PJM and the PJM Transmission Owners); *Building for the Future Through Electric Regional Transmission Planning and Cost Allocation*, Notice of Extension of Time, Docket No. RM21-17-000 (Oct. 17, 2025) (explaining that PJM Transmission Owners have compliance filing responsibilities to amend the Tariff in accordance with Order No. 1920's cost allocation requirements).

[483] Proposed Operating Agreement, Schedule 6-C, section 1.16(e) (citation modified).

methodology to be filed by the PJM Transmission Owners (including a methodology that PARSEC may propose).[484]

The recommended Long-Term Regional Transmission Plan, i.e., the selected Long-Term Transmission Projects and their associated Designated Entities and cost allocations, will then be presented to the PJM Board for review and approval, except that the Board's approval "shall be conditional as to Long-Term Transmission Projects supported by voluntary funding agreements for which the FERC has not accepted a cost allocation methodology."[485] Such "conditional" approval does not relate to the project supported by voluntary funding, but rather applies to the requirement that the "the PJM Board shall approve the cost allocations for the selected Long-Term Transmission Projects consistent with Tariff, Schedule 12."[486] Once the Commission determines the cost responsibility assignments, such condition can be removed.

Following PJM Board approval of a Long-Term Regional Transmission Plan, PJM will perform several actions mirroring the steps PJM follows upon PJM Board approval of each update to the Regional Transmission Expansion Plan.[487] Within 60 days of the PJM Board's approval of any addition to the Long-Term Regional Transmission Plan, PJM will file with Commission a report identifying the Long-Term Transmission Project, the estimated cost, the entity(ies) responsible for constructing, owning, and financing it, and

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[484] The recommended Long-Term Regional Transmission Plan itself will identify, "for each recommended Long-Term Transmission Project, the cost allocations consistent with [Tariff, Schedule 12]." Proposed Operating Agreement, Schedule 6-C, section 1.17(e).

[485] Proposed Operating Agreement, Schedule 6-C, section 1.17(a).

[486] Proposed Operating Agreement, Schedule 6-C, section 1.17(a).

[487] *See* Operating Agreement, Schedule 6, section 1.6.

cost responsibility assignments.[488] Additionally, following approval by the PJM Board, "the recommended Long-Term Regional Transmission Plan will be incorporated into the Regional Transmission Expansion Plan," and PJM will post it publicly and provide it "to the Applicable Regional Entities consistent with Operating Agreement, Schedule 6, section 1.6(d)."[489]

Invoking the RTEP Protocol provisions in Operating Agreement, Schedule 6, section 1.7, PJM's proposed language calls for the "Transmission Owners or Designated Entities designated as the appropriate entities to construct, own and/or finance Long-Term Transmission Project selected in the Long-Term Regional Transmission Plan and incorporated into the Regional Transmission Expansion Plan [to] construct, own and/or finance such facilities or enter into appropriate contracts to fulfill such obligations."[490]

H. Reevaluation of Previously Selected Long-Term Transmission Projects

The Final Rule provides that transmission providers should reevaluate previously selected long-term facilities in three situations: (i) where delays in the development of a previously selected long-term facility would jeopardize the transmission provider's ability to meet reliability needs or reliability-related service obligations; (ii) where the actual or projected costs significantly exceed the cost estimates used in selecting the long-term facility; and (iii) when significant changes in federal, federally-recognized Tribal, state, or local laws or regulations cause "reasonable concern" that a previously selected long-term facility may no longer meet the transmission provider's selection criteria.[491] The Final

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[488] Proposed Operating Agreement, Schedule 6-C, section 1.17(b).

[489] Proposed Operating Agreement, Schedule 6-C, section 1.17(c).

[490] Proposed Operating Agreement, Schedule 6-C, section 1.18(a).

[491] *See* Order No. 1920 at PP 1048-49; Order No. 1920-A at P 471.

Rule further required transmission providers to specify in their tariffs criteria to be used to determine when one of these situations occurs.[492]

The Final Rule provided flexibility in the development of the reevaluation criteria, subject to the following requirements: (i) any reevaluation on the basis of cost increases or of significant changes in laws or regulations must occur in a subsequent Long-Term Regional Transmission Planning cycle, and must take into account not only the updated costs but also the updated benefits of the long-term facility;[493] (ii) the reevaluation processes and procedures must include mechanisms for tracking the costs of long-term facilities;[494] and (iii) reevaluation processes and procedures must seek to maximize benefits accounting for costs over time without over-building transmission facilities.[495]

PJM's proposed reevaluation process complies with the objectives of the Final Rule by striking a balance between providing the certainty necessary to support capital investment in long-term transmission and mitigating the inherent uncertainty involved in long-term regional transmission planning.[496] PJM's proposal further builds on those objectives by incorporating additional flexibility for PJM to determine, in its engineering judgment, whether reevaluation is actually needed.

As required by the Final Rule, proposed Operating Agreement, Schedule 6-C, section 1.6.1 provides that PJM may reevaluate the continued need for a particular Long-Term Transmission Project under the following three circumstances:

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[492] *See* Order No. 1920 at P 1050.

[493] *See* Order No. 1920 at P 1052.

[494] *See* Order No. 1920 at P 1052; Order No. 1920-A at P 475.

[495] Order No. 1920 at P 1052; Order No. 1920-A at P 475.

[496] *See* Order No. 1920-A at P 497.

i. **Delay**: To the extent the Designated Entity fails to meet a milestone in the development schedule set forth in the Designated Entity Agreement that causes a delay of the project's in-service date such that the project is unlikely to be in-service by the required in-service date jeopardizing system reliability, operational performance, or other obligations, PJM may reevaluate the need for the Long-Term Transmission Project. Based on that reevaluation, PJM may (i) retain the Long-Term Transmission Project; (ii) remove the Long-Term Transmission Project from the Regional Transmission Expansion Plan; or (iii) seek an alternative solution for inclusion of the Long-Term Transmission Project in the Long-Term Regional Transmission Plan.[497] If PJM elects to retain the Long-Term Transmission Project, it must determine whether the delay is beyond the Designated Entity's control, and whether to retain the Designated Entity or to instead designate the Transmission Owner in the Zone where the project is located to construct the project.[498] If the Designated Entity is the incumbent Transmission Owner, PJM will seek recourse through the Consolidated Transmission Owners Agreement or the Commission, as appropriate.[499]

ii. **Increased Costs**: If PJM becomes aware of a significant increase in the costs to construct an approved Long-Term Transmission Project, whether in relation to the project's benefits or on a standalone basis, PJM may reevaluate the need for the Long-Term Transmission Project and determine next steps in the same

[497] Proposed Operating Agreement, Schedule 6-C, section 1.6.1(a)(1).

[498] Proposed Operating Agreement, Schedule 6-C, section 1.6.1(a)(1).

[499] Proposed Operating Agreement, Schedule 6-C, section 1.6.1(a)(1).

manner as outlined above for delay-based reevaluations.[500] If PJM retains the Long-Term Transmission Project in the Regional Transmission Expansion Plan, the Designated Entity will not change.[501]

iii. **<u>Change in Law or Regulation</u>**: If PJM becomes aware of a change in law or regulation such that the Long-Term Transmission Project may no longer meet the applicable selection criteria on which the project was initially selected, PJM may reevaluate the need for the Long-Term Transmission Project, including evaluating updated costs and benefits.[502] If PJM retains the Long-Term Transmission Project in the Regional Transmission Expansion Plan, the Designated Entity will not change.[503]

PJM's proposal to determine the existence of a "significant increase in the costs" as measured "in relation to the project's benefits or on a standalone basis"[504] is compliant with the Final Rule's requirement that any cost-triggered reevaluation "must take into account not only the updated costs but also the updated benefits of the Long-Term Regional Transmission Facility."[505] Under this rule, PJM would be allowed to reevaluate a previously selected project if, in PJM's judgment, there is a significant increase in the project's estimated costs.

Moreover, in each of the three circumstances outlined above (i.e., delay, increased cost, or change in law or regulation) PJM will employ two key principles: (i) system

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[500] Proposed Operating Agreement, Schedule 6-C, section 1.6.1(a)(2).

[501] Proposed Operating Agreement, Schedule 6-C, section 1.6.1(a)(2).

[502] Proposed Operating Agreement, Schedule 6-C, section 1.6.1(a)(3).

[503] Proposed Operating Agreement, Schedule 6-C, section 1.6.1(a)(3).

[504] Proposed Operating Agreement, Schedule 6-C, section 1.6.1(a)(2).

[505] Order No. 1920 at P 1052.

reliability must be preserved and (ii) benefits accounting for costs over time should be maximized without over-building facilities.[506] If PJM conducts a reevaluation and concludes that removal of the Long-Term Transmission Project would violate one or both of these principles, or if removal of the project from the Regional Transmission Expansion Plan would have adverse and cascading impacts on the interconnection and transmission planning processes, PJM will not remove the project.[507] This complies with the Final Rule's requirements that "transmission providers must describe the conditions under which they would remove a previously selected Long-Term Regional Transmission Facility from the regional transmission plan."[508]

III. COORDINATION OF THE LTRTP PROTOCOL PROCESS WITH THE RTEP PROTOCOL AND INTERCONNECTION PROCESSES

The Final Rule requires transmission providers to coordinate their existing regional transmission planning and interconnection processes with their Final Rule-compliant long-term regional transmission planning process.[509] The Final Rule found that there was insufficient coordination between the existing generator interconnection processes and regional transmission planning and cost allocation processes regarding interconnection-related transmission needs that are repeatedly identified in the generator interconnection process.[510] The Final Rule further required transmission providers to evaluate for selection in their existing regional transmission planning processes facilities to address interconnection-related transmission needs that have been identified in the generator

[506] Proposed Operating Agreement, Schedule 6-C, section 1.6.1(b).

[507] Proposed Operating Agreement, Schedule 6-C, section 1.6.1(c).

[508] Order No. 1920 at P 1052.

[509] Order No. 1920 at PP 1100-01; Order No. 1920-A at P 535.

[510] Order No. 1920 at P 1100.

interconnection process as requiring interconnection-related network upgrades that meet the following criteria: (i) have a required voltage of at least 200 kV and an estimated cost of at least $30 million; (ii) have been identified in interconnection studies in at least two interconnection queue cycles (or in the case of a first-come, first-served serial generator interconnection process, at least two individual interconnection studies); (iii) the interconnection requests driving identified interconnection-related transmission need have withdrawn, and no more than five calendar years have passed between the date of the earlier interconnection request withdrawal and the later withdrawal; (iv) is not in an executed generator interconnection agreement or in a generator interconnection agreement; and (v) interconnection request withdrawals associated with the repeatedly identified interconnection-related transmission need occurred no more than seven years prior to the commencement date of the Order No. 1000 regional planning and cost allocation cycle.[511]

To comply with this directive, PJM proposes to modify its existing RTEP Protocol in Operating Agreement, Schedule 6, to incorporate the above-enumerated requirements. Specifically, PJM proposes to adopt new subsection 1.5.8(q), which requires PJM to "evaluate for selection transmission enhancements or expansions to address interconnection-related needs" where all of the Commission's five enumerated criteria are met,[512] as reprinted below:[513]

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[511] Order No. 1920-A at PP 544-45. *Id.* at P 545 (Additionally, "[t]he initial evaluation should occur in the first Order No. 1000 regional transmission planning and cost allocation cycle to occur after the effective date of the tariff revisions implementing this reform. The transmission provider need not evaluate an interconnection-related transmission need that has been evaluated in a previous Order No. 1000 regional transmission planning and cost allocation cycle."). These additional points are included in the proposed Operating Agreement, Schedule 6, section 1.5.8(q) language.

[512] Proposed Operating Agreement, Schedule 6, section 1.5.8(q).

[513] Proposed Operating Agreement, Schedule 6, section 1.5.8(q).

(i) the Office of Interconnection has identified the interconnection-related transmission need in System Impact Studies in at least two interconnection Cycles conducted under Tariff, Part VIII;

(ii) the identified Network Upgrade has a voltage of at least 200 kV and an estimated cost of at least $30 million;

(iii) the New Service Requests associated with the identified interconnection-related transmission need are withdrawn, and no more than five calendar years have passed between the date of the earlier New Service Request and the later New Service Request;

(iv) the identified Network Upgrade is not included in an executed or unexecuted Generator Interconnection Agreement; and

(v) the withdrawn New Service Requests associated with the identified interconnection-related transmission need occurred no more than seven years prior to the commencement date of initiation of the current enhancement and expansion study process as set forth in Operating Agreement, Schedule 6, section 1.5.1. The Office of Interconnection need not evaluate an interconnection-related transmission need that has been evaluated in a previous enhancement and expansion study process. The Office of the Interconnection shall post on the PJM website all interconnection-related transmission needs that meet the criteria of this section to be included in a proposal window consistent with the Operating Agreement, Schedule 6, section 1.5.8(c).

Compliant with the requirements of the Final Rule,[514] PJM is not required to evaluate an interconnection-related transmission need that has been evaluated in a previous enhancement and expansion study process.[515] Finally, PJM proposes to post all interconnection-related transmission needs that meet the criteria as part of the competitive proposal window consistent with the Operating Agreement, Schedule 6, section 1.5.8(c).[516]

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[514] *See* Order No. 1920-A at P 551 ("[T]he withdrawal window criterion makes clear that a transmission provider need not evaluate an interconnection-related need that meets all the qualifying criteria if it has already evaluated that interconnection-related transmission need in an Order No. 1000 regional transmission planning and cost allocation cycle.").

[515] Proposed Operating Agreement, Schedule 6, section 1.5.8(q).

[516] Operating Agreement, Schedule 6, section 1.5.8(q).

In addition to interconnection-related reforms, the Final Rule requires transmission providers to consider four-enumerated alternative transmission technologies when evaluating both new regional and upgrades to existing transmission facilities.[517] As described above in section II.E.3 (Consideration of alternative transmission technologies), PJM proposes to comply with the requirement to consider certain enumerated alternative transmission technologies in their existing Order No. 1000 transmission planning processes in the existing Regional Transmission Expansion Plan process in the same manner as it proposes to consider alternative transmission technologies in the LTRTP Protocol.[518]

IV. IMPLEMENTATION SCHEDULE AND EFFECTIVE DATE OF OPERATING AGREEMENT REVISIONS

A. Implementation of Operating Agreement, Schedule 6 Revisions (RTEP Protocol)

For the revisions to the RTEP Protocol (consideration of alternative transmission technologies and generator interconnection coordination),[519] PJM expects to implement changes in the first study cycle after the Commission issues an order accepting this compliance filing, provided that the Commission issues a decision at least six months prior to the start of that cycle. PJM's RTEP Protocol process encompasses two 18-month study cycles for reliability that overlap by six months (together for one 24-month cycle), and one 24-month cycle for market efficiency studies.[520] As such, if the Commission issues a

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[517] Order No. 1920 at P 1198; Order No. 1920-A at P 598.

[518] *See* proposed Operating Agreement, Schedule 6, sections 1.5.8(c)(1), 1.5.8(*l*).

[519] Operating Agreement, Schedule 6, section 1.5.8(c)(1), 1.5.8(q).

[520] PJM Transmission Planning Department, *Manual 14B: PJM Region Transmission Planning Process* (Rev. 57, Sep. 25, 2024), https://www.pjm.com/-/media/DotCom/documents/manuals/m14b.pdf ("PJM and PJM Transmission Owners' planning processes are incorporated in an 18-month overlapping planning cycle which begins in September of the previous calendar year and extends through a full calendar year to the February of the next calendar year.") section 1.1, ("The 24-month planning process is made up of overlapping 18-month planning cycles") section 2.1.2, ("Each year as part of the 24-Month Market Efficiency Cycle, PJM performs a market efficiency analysis, following the completion of the near-term reliability plan for the

decision less than six months prior to the start of a cycle, then PJM will implement the RTEP Protocol changes in the following cycle.

B. Implementation of Operating Agreement, Schedule 6-C Revisions (LTRTP Protocol))

For implementation of the proposed LTRTP Protocol, the Final Rule requires transmission providers to propose a date no later than two years from the compliance filings due date, on which they will commence the first Long-Term Regional Transmission Plan cycle.[521] To comply with this requirement, in a previous filing, PJM committed to proposing a date no later than June 12, 2027, to begin its initial Long-Term Regional Transmission Plan cycle.[522]

PJM continues to work toward June 12, 2027, as the latest date to begin the first Long-Term Regional Transmission Plan cycle, but such date is achievable only to the extent the Commission issue an order approving PJM's proposal within six months before that date (i.e., an order issued no later than December 11, 2026). An order by such date would give PJM sufficient time to establish the implementation details, as set forth in the PJM Manuals, ahead of the beginning of the first Long-Term Regional Transmission Plan cycle. Determination and publication of the implementation details will allow PJM to properly conduct the cycle and do so in an open and transparent manner. The proposed changes to PJM's Operating Agreement are significant, and PJM estimates it will need no

region.") section 1.3.2; PJM Interconnection, L.L.C., *RTEP: Planning for Long-Term Transmission Needs*, (Jan. 10, 2025) https://www.pjm.com/-/media/DotCom/about-pjm/newsroom/fact-sheets/rtep-fact-sheet.pdf.

[521] Order No. 1920-A at PP 507-08.

[522] *Building for the Future Through Electric Regional Transmission Planning and Cost Allocation*, Motion for Extension of Time to Submit Compliance Filing of PJM Interconnection, L.L.C., and Request for Order by February 6, 2025, Docket No. RM21-17-000, at 2 (Dec. 20, 2024).

less than six months to prepare PJM Manual changes, which are developed and established through a formalized stakeholder process.[523]

Additionally, by a separate filing, PJM intends to submit Governing Document revisions to effectuate those aspects of PJM's LTRTP Protocol that are inextricably intertwined with cost allocation on June 12, 2026, concurrent with the PJM Transmission Owners' submittal of the cost allocation rules for projects selected through the LTRTP Protocol.[524] Likewise, PJM expects to seek to implement such planning rules on June 12, 2027, provided that the Commission provides its order on the cost allocation order within six months prior to that date.

In other words, the June 12, 2027 implementation of the tariff changes from both (i) this filing *and* (ii) PJM's June 12, 2026 filing is conditional on the Commission issuing an order accepting such changes six months prior that date (i.e., a Commission order on both filings by no later than December 11, 2026).

C. Proposed Effective Date

Because the timing of PJM's implementation date will depend in part on the Commission's issuance of an order the proposal set forth in this filing, PJM's effective date for the revisions proposed herein is uncertain. Given this uncertainty, PJM has entered a

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[523] *See* Governmental and Member Services Division, Stakeholder Affairs Department, *PJM Manual 34: PJM Stakeholder Process*, § 11.15 (rev. 22, Sep. 25, 2025), https://www.pjm.com/-/media/DotCom/documents/manuals/m34.pdf (discussing stakeholder process to revise PJM manuals). The stakeholder process required to develop business practice manuals supports PJM's need for the modest six-month lead time and complies with the Final Rule's explanation requirement. Order No. 1920-A required transmission providers to explain "why the proposed date on which they will commence the first Long-Term Regional Transmission Planning cycle is necessary and appropriately tailored for their transmission planning region." Order No. 1920-A at P 508.

[524] *See supra* section I.E (The scope of this compliance filing is informed by the allocation of filing between PJM and the PJM Transmission Owners) (discussing topics that will be subject to a supplemental filing, including tariff revisions regarding cost allocation (including state opt-out and voluntary funding), local planning transparency, and the PJM Transmission Owners' development of the list of anticipated replacement needs). In that section, PJM also sought an extension for this filing to the extent necessary. *Id.*

placeholder effective date of 12/31/9998 for the tariff records associated with this proposal. Once the Commission issues an order on this filing, and PJM's ability to implement the proposal becomes clearer, PJM will submit a clean-up filing to enter the actual effective date.

V. STAKEHOLDER PARTICIPATION AND TRANSPARENCY PROVISIONS AND COMPLIANCE WITH TRANSMISSION PLANNING PRINCIPLES

A. Overview of Stakeholder Participation and Transparency Provisions

As proposed, PJM's LTRTP Protocol process will be open and transparent and conducted in coordination and consultation with stakeholders and with the states. As shown in Table 1 below (General Stages of the LTRTP Protocol), the proposed LTRTP Protocol hardcodes over a dozen points at which PJM will post data, solicit information, or otherwise engage with stakeholders and states in conducting the LTRTP Protocol process.

PJM purposefully designed its proposal to lean into opportunities for transparency and stakeholder participation. As Dr. Abdulsalam explains, PJM built in time to "properly conduct each step of the process while simultaneously providing opportunities for robust state and stakeholder engagement and feedback."[525] Transparency and stakeholder participation is particularly important because of the complexity of planning long-term and its associated uncertainty,[526] and because participants will provide critical data for the process, such as Tribal, state, and local policies, In-Kind Replacement Facility Needs, and development opportunities.[527] Most notably, "regional transmission planning in PJM

[525] Abdulsalam Declaration at ¶ 10.

[526] Abdulsalam Declaration at ¶ 28.

[527] Abdulsalam Declaration at ¶ 31.

requires coordination with 14 jurisdictions, each with different priorities, policies, and cost-allocation perspectives" and this diversity of interests means that "decisions will need to be carefully made."[528]

Table 1 below (General Stages of the LTRTP Protocol) shows the timeline of PJM's proposed LTRTP Protocol, focusing on examples of transparency and stakeholder participation provisions, which are marked with an asterisk (*). This table does not represent every step of the LTRTP Protocol process in detail.

Table 1

General Stages of the LTRTP Protocol (With a Focus On Transparency and Stakeholder Participation Provisions, as Marked with an Asterisk (*))

PLANNING STAGE	PROVISIONS	APPROXIMATE STAGE DURATION	CUMULATIVE PROCESS TIME
Gathering best available data	Work with states and stakeholders* to gather data under the factor categories listed in sections 1.4.2 and 1.4.3 (which correspond to FERC Factor Categories 1-7) likely to affect Long-Term Transmission Needs.[529]	3 months	Pre-cycle activities
Initial assumptions meeting	Hold an initial assumptions meeting with TEAC* at the start of the Long-Term Regional Transmission Plan study process to discuss inputs and methods to be used in the development of scenarios and sensitivities of the Long-Term Regional Transmission Plan. Additional initial assumptions meetings* may be held as needed. [530]	1 month	Year 1: Month 1

[528] Abdulsalam Declaration at ¶ 39.

[529] Proposed Operating Agreement, Schedule 6-C, sections 1.4.2 & 1.4.3.

[530] Proposed Operating Agreement, Schedule 6-C, section 1.4.4(a).

PLANNING STAGE	PROVISIONS	APPROXIMATE STAGE DURATION	CUMULATIVE PROCESS TIME
	Meet with PARSEC* to discuss the assumptions, inputs and methods to be used in the development of scenarios and sensitivities, or other updates relevant to development of the Long-Term Regional Transmission Plan.[531]		
Development of assumptions	Consult with PARSEC and stakeholders* in developing the Long-Term Scenario assumptions used in the Long-Term Regional Transmission Plan study process.[532] Document and post* the determination of the range of assumptions to be used in the scenarios and studies after final assumptions meetings* with TEAC and PARSEC and before developing scenarios.[533]	3 Months	Year 1: Month 4
Scenario development	Post initial draft Long-Term Scenarios for review* by stakeholders.[534] Hold at least one meeting* to discuss and provide/receive feedback on the draft scenarios with TEAC, PARSEC, and other stakeholders.[535]	8 Months	Year 1: Month 12
Long-Term Regional Transmission Plan studies	Provide results of Long-Term Regional Transmission Plan studies and related analyses to TEAC and PARSEC* to consider the impact of sensitivities, assumptions, and scenarios on Long-Term Transmission	10 Months	Year 2: Month 10

[531] Proposed Operating Agreement, Schedule 6-C, section 1.4.4(b).

[532] Proposed Operating Agreement, Schedule 6-C, section 1.4.2(c).

[533] Proposed Operating Agreement, Schedule 6-C, section 1.4.4(c).

[534] Proposed Operating Agreement, Schedule 6-C, section 1.5(c).

[535] Proposed Operating Agreement, Schedule 6-C, section 1.5(c).

Planning Stage	**Provisions**	**Approximate Stage duration**	**Cumulative Process Time**
	Needs and need for Long-Term Transmission Projects. [536] Hold additional TEAC meetings* for review and comment on reliability criteria violations and market efficiency analyses. Report and provide status updates* on the development of the Long-Term Regional Transmission Plan at these meetings.[537]		
Reevaluation	Reevaluate whether an approved Long-Term Transmission Project in the Regional Transmission Expansion Plan should remain in the plan, and report any considered change to the Regional Transmission Expansion Plan to TEAC for review and comment* and approval by the PJM Board.[538]	2 Months	Year 2: Month 5
LT Needs	Post* Long-Term Transmission Needs identified through a Long-Term Regional Transmission Plan study, indicate whether such needs are Core LT Needs or Additional LT Needs, information related to each need consistent with section 1.8(b), and indicate whether a Right-sized Replacement Facility may address a Long-Term Transmission Need consistent with section 1.7.[539] Receive feedback* on such postings before opening proposal window. The TEAC and PARSEC will have an	2 Months	Year 2: Month 12

[536] Proposed Operating Agreement, Schedule 6-C, section 1.6(c).

[537] Proposed Operating Agreement, Schedule 6-C, section 1.6(c).

[538] Proposed Operating Agreement, Schedule 6-C, section 1.6.1(a).

[539] Proposed Operating Agreement, Schedule 6-C, section 1.6.2(c).

PLANNING STAGE	PROVISIONS	APPROXIMATE STAGE DURATION	CUMULATIVE PROCESS TIME
	opportunity to comment* on the classification of Core LT Needs and Additional LT Needs.[540]		
Identification of Right-Sized Replacement Facilities	Prior to posting Long-Term Transmission Needs, review the identified Long-Term Transmission Needs and the Candidate In-Kind Replacement Facility Needs List to evaluate whether any Long-Term Transmission can be addressed with Right-Sized Replacement Facilities, and notify the TEAC* of any identified Right-Sized Replacement Facilities for review and comment and explanation* of conclusions.[541]	3 Months	Year 2: Month 11
Competitive Window	Post* Long-Term Transmission Needs and supporting information, including the studies for each Long-Term Scenario, a recommended set of Long-Term Transmission Needs to be addressed (classified into Core LT Needs and Additional LT Needs), the system conditions considered, and policy requirements, including federal, state, Tribal, and local policy objectives.[542] Post* the Long-Term Transmission Need, the relevant In-Kind Replacement Facility, the identified Right-Sized Replacement Facility, and any incidental system impacts caused by the Right-Sized Replacement Facility that would need to be addressed for each Long-Term Transmission Need that may be	5 Months	Year 3: Month 5

[540] Proposed Operating Agreement, Schedule 6-C, section 1.6.2(c).

[541] Proposed Operating Agreement, Schedule 6-C, section 1.7(a).

[542] Proposed Operating Agreement, Schedule 6-C, section 1.8(b).

PLANNING STAGE	PROVISIONS	APPROXIMATE STAGE DURATION	CUMULATIVE PROCESS TIME
	addressed through right-sizing an In-Kind Replacement Facility.[543] Post* an explanation regarding why certain Long-Term Transmission Needs were identified but were not to be addressed through proposals and whether any such needs were determined to be more appropriately addressed through a different planning process or subsequent Long-Term Regional Transmission Plan cycles.[544] Post* on the PJM website all proposals submitted pursuant to proposed section 1.8(c) and all identified Right-Sized Replacement Facilities.[545]		
Evaluation of posted proposals to address Long-Term Transmission Needs	Evaluate proposals to determine the more efficient or cost-effective solution for addressing identified Long-Term Transmission Needs, considering engineering judgment, sensitivity studies and scenario analyses, consistent with the Evaluation Criteria specified in section 1.9(a).[546] Determine the comparative risks for each proposal to be borne by ratepayers as a result of the proposal's binding cost commitment or use of non-binding cost estimates.[547] Present comparative analyses* of the comparative risks to be borne by	5 Months	Year 3: Month 10

[543] Proposed Operating Agreement, Schedule 6-C, section 1.8(b).

[544] Proposed Operating Agreement, Schedule 6-C, section 1.8(b).

[545] Proposed Operating Agreement, Schedule 6-C, section 1.8(d).

[546] Proposed Operating Agreement, Schedule 6-C, section 1.9(a).

[547] Proposed Operating Agreement, Schedule 6-C, section 1.9(a).

Planning Stage	Provisions	Approximate Stage Duration	Cumulative Process Time
	ratepayers, including the rationale used to scrutinize the cost, and overall cost-effectiveness of each finalist's proposal, including any binding cost commitments, for TEAC review and comment*.[548]		
Finalizing Core and All-in-One Plans	Post to the PJM website and present* the Core Plan and the All-in-One Plan and any proposals that would address Long-Term Transmission Needs but were not identified for inclusion in the Core Plan and/or All-in-One Plan to PARSEC and TEAC for review and comment*.[549] Based on review and comment*, additional studies and evaluations may be performed. If the Core Plan or All-in-One Plan are revised, the revised Core and All-in-One Plans must be posted* to the PJM website and presented to the PARSEC and TEAC for review and comment.*[550]	2 Months	Year 3: Month 12
Final All-in-One Plan and recommended Long-Term Regional Transmission Plan	States consider* opt-out and cost allocation decisions.[551] States and other entities consider* voluntary funding opportunities.[552] PJM reoptimizes All-in-One Plan based on these decisions.[553] Consult with TEAC and PARSEC* on the recommended Long-Term	11 Months	Year 4: Month 11

[548] Proposed Operating Agreement, Schedule 6-C, section 1.9(a).

[549] Proposed Operating Agreement, Schedule 6-C, sections 1.12(a) & (b).

[550] Proposed Operating Agreement, Schedule 6-C, section 1.12(c).

[551] Proposed Operating Agreement, Schedule 6-C, section 1.16(b).

[552] Proposed Operating Agreement, Schedule 6-C, section 1.16(b).

[553] Proposed Operating Agreement, Schedule 6-C, section 1.16(b).

Planning Stage	Provisions	Approximate Stage Duration	Cumulative Process Time
	Regional Transmission Plan before presenting to PJM Board for review and approval, including providing sufficiently detailed determinations* for stakeholders to review the recommendations.[554]		
Approval of Long-Term Regional Transmission Plan	Based on the studies and analyses performed, the PJM Board will approve the recommended Long-Term Regional Transmission Plan as part of the Regional Transmission Expansion Plan.[555] The current and approved Long-Term Regional Transmission Plan will be published* to the PJM website.[556]	1 Month	Year 4: Month 12

B. Compliance with Order Nos. 890 and 1000 Planning Principles

Consistent with its current regional transmission planning practices,[557] and in compliance with the Final Rule,[558] PJM's proposed LTRTP Protocol process will continue to apply Order Nos. 890 and 1000 planning principles.[559] The Commission has previously found that PJM's existing RTEP Protocol process complies with each planning principle

[554] Proposed Operating Agreement, Schedule 6-C, section 1.16(a).

[555] Proposed Operating Agreement, Schedule 6-C, section 1.17(a).

[556] Proposed Operating Agreement, Schedule 6-C, section 1.17(b).

[557] Operating Agreement, Schedule 6.

[558] Order No. 1920 at P 224; Order No. 1920-A at PP 210-217.

[559] Proposed Operating Agreement, Schedule 6-C, section 1.1; *see also, e.g.*, Order No. 890 at PP 442, 444; Order No. 1000 at P 146.

(1) coordination;[560] (2) openness;[561] (3) transparency;[562] (4) information exchange;[563] (5) comparability;[564] and (6) dispute resolution.[565] As discussed, PJM's proposed LTRTP Protocol process builds on and carries forward much of its existing RTEP Protocol *process* rules,[566] including compliance with these principles. Table 1 above (General Stages of the LTRTP Protocol) detailing PJM's commitment to extensive stakeholder and state engagement, and the descriptions of the specific provisions throughout this transmittal

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560 *See* First Order No. 890 Compliance Order, 123 FERC ¶ 61,163. at P 22 (finding PJM complied with coordination principle in Order No. 890); First Order No. 1000 Compliance Order, 142 FERC ¶ 61,214, at PP 53-55 (finding PJM partially complied with coordination principle in Order No. 1000, and directing PJM to file, within 120 days, a further compliance filing explaining how it will comply with the comparability principle); Second Order No. 1000 Compliance Order, 147 FERC ¶ 61,128, at P 3 (accepting PJM's second compliance filing).

561 *See* First Order No. 890 Compliance Order, 123 FERC ¶ 61,163, at P 28 (finding PJM complied with openness principle in Order No. 890); First Order No. 1000 Compliance Order, 142 FERC ¶ 61,214, at P 52 (finding PJM complied with openness principle in Order No. 1000).

562 *See* First Order No. 890 Compliance Order, 123 FERC ¶ 61,163, at P 37 (finding PJM complied with transparency principle in Order No. 890); First Order No. 1000 Compliance Order. 142 FERC ¶ 61,214, at PP 52-55 (finding PJM complied with transparency principle in Order No. 1000).

563 *See* First Order No. 890 Compliance Order, 123 FERC ¶ 61,163, at P 51 (finding PJM complied with information exchange principle in Order No. 890); First Order No. 1000 Compliance Order, 142 FERC ¶ 61,214, at PP 52-55 (finding PJM complied with information exchange principle in Order No. 1000).

564 *See* Second Order No. 890 Compliance Order, 127 FERC ¶ 61,166, at P 17 (accepting PJM's Order No. 890 compliance filing and discussing the principle of comparability).

565 *PJM Interconnection, L.L.C.*, 89 FERC ¶ 61,012, at 61,049-50 (1999) (approving PJM's continued use of dispute resolution procedures in Schedule 5 of the PJM Operating Agreement for Regional Transmission Expansion Plan cost responsibility disputes); First Order No. 890 Compliance Order, 123 FERC ¶ 61,163, at P 63 (finding Schedule 5 of the PJM Operating Agreement complies with Order No. 890 "dispute resolution" requirements); First Order No. 1000 Compliance Order, 142 FERC ¶ 61,214, at P 52 (finding that PJM's Order No. 1000 compliance filing complies with the "dispute resolution" requirements of Order No. 1000).

566 *See, e.g.*, *supra* section I.C.3 (Possible displacement of transmission enhancements or expansions developed pursuant to the RTEP Protocol by transmission enhancements or expansions developed pursuant to the LTRTP Protocol) (explaining that PJM's existing RTEP Protocol will not change except to reflect certain requirements of the Final Rule as described in Section I.C); section I.C.4 (Most elements of the RTEP Protocol will be unaffected by the revisions proposed in this filing) (explaining that PJM's RTEP Protocol is unaffected except as directed by the Final Rule); section II.A.2 (Coordination with TEAC and PARSEC) (explaining that as with PJM's currently effective RTEP Protocol, PJM intends to consult with stakeholders through regular TEAC meetings to develop the Long-Term Regional Transmission Plan); section II.F.2 (Evaluation of cost and benefits) (explaining that PJM has developed an approach which – consistent with how it evaluates proposals pursuant to the currently-effective RTEP Protocol – would require PJM to engage in comparative analyses of proposals submitted).

letter, demonstrate the proposal's compliance with principles (1) through (4): coordination, openness, transparency, and information exchange.

For principle (5), comparability, PJM's proposed LTRTP Protocol continues to offer stakeholders opportunities to provide their input regarding the development of assumptions used to develop the Long-Term Regional Transmission Plan.[567] Likewise, PJM's proposed Operating Agreement language clearly describes how PJM will select among alternatives on a comparable basis.[568] As in the Commission-approved RTEP Protocol, the LTRTP Protocol specifies where and when proponents of transmission and non-transmission alternatives have an opportunity to provide input into the development of assumptions, and the identification and evaluation of solutions to Long-Term Transmission Needs.[569] The LTRTP Protocol also requires PJM to post identified Long-Term Transmission Needs for which it will solicit solutions.[570]

For principle (6), dispute resolution, PJM's proposal includes (i) a specific, formal dispute resolution mechanism when the Designated Entity challenges the Designated Entity Agreement[571] and (ii) incorporation of the dispute resolution mechanism by which a disagreeing entity can challenge PJM's determination that the entity does not satisfy the

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[567] *See* Second Order No. 890 Compliance Order, 127 FERC ¶ 61,166, at P 17 (accepting PJM's Order No. 890 compliance filing and discussing the principle of comparability).

[568] *See* Second Order No. 890 Compliance Order, 127 FERC ¶ 61,166, at P 17 (accepting PJM's Order No. 890 compliance filing and discussing the principle of comparability).

[569] Operating Agreement, section 16.5 (cross-referencing Operating Agreement, Schedule 5); Operating Agreement, Schedule 5 (PJM Dispute Resolution Procedures). *See also PJM Interconnection, L.L.C.*, 89 FERC ¶ 61,012, at 61,049-50; First Order No. 890 Compliance Order, 123 FERC ¶ 61,163, at P 63; First Order No. 1000 Compliance Order, 142 FERC ¶ 61,214, at P 52 (all accepting the RTEP Protocol principles as consistent with the Requirements of Order Nos. 890 and 1000).

[570] Proposed Operating Agreement, Schedule 6-C, section 1.6.2(c).

[571] Proposed Operating Agreement, Schedule 6-C, section 1.15.2(c).

pre-qualification requirements set forth in Schedule 6, section 1.5.8(a).[572] PJM also has a formal dispute resolution process memorialized in its Operating Agreement to address general disputes arising under the PJM Governing Documents[573] which would apply here.

VI. DOCUMENTS INCLUDED IN THIS FILING

In addition to this transmittal letter, PJM encloses the following:

1. Attachment A: Proposed Operating Agreement, Schedule 6-C (Long-Term Regional Transmission Planning Protocol) (Clean);
2. Attachment B: Proposed Operating Agreement, Definitions and Schedule 6, section 1.5 (Regional Transmission Expansion Protocol) (Marked);
3. Attachment C: Proposed Operating Agreement, Definitions and Schedule 6, section 1.5 (Regional Transmission Expansion Protocol) (Clean); and
4. Attachment D: Declaration of Dr. Sami Abdulsalam, Director of PJM Transmission Planning with Appendix 1 (Illustration of Proposed LTRTP Protocol Timeline Estimates (Combined)), and Appendix 2 (Illustration of Proposed LTRTP Protocol Timeline Estimates (By Year)).

[572] Proposed Operating Agreement, Schedule 6-C, section 1.8(a) (referencing Operating Agreement, Schedule 6, section 1.5.8(a)).

[573] Operating Agreement, Schedule 5; Tariff, section 12.

VII. COMMUNICATIONS

Correspondence and communications with respect to this filing should be sent to, and PJM requests the Secretary include on the official service list, the following:[574]

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VIII. SERVICE

PJM has served a copy of this filing on all PJM Members and on the affected state utility regulatory commissions in the PJM Region by posting this filing electronically. In accordance with the Commission's regulations,[575] PJM will post a copy of this filing to the FERC filings section on its internet site, https://pjm.com/library/filing-order, and will send an email on the same date as this filing to all PJM Members and all state utility regulatory commissions in the PJM Region,[576] alerting them that this filing has been made by PJM and is available by following such link. If the document is not immediately available by using the referenced link, the document will be available through the referenced link within twenty-four hours of the filing.

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[574] To the extent necessary, PJM requests waiver of Rule 203(b)(3) of the Commission's Rules of Practice

IX. CONCLUSION

As demonstrated above, PJM's proposed LTRTP process and Operating Agreement revisions comply with Order Nos. 1920, 1920-A, and 1920-B, and should be accepted by the Commission. PJM requests an effective date of the tariff revisions of 12/31/9998, for the reasons stated above.

Additionally, given the scope and detail of PJM's compliance filing, PJM respectfully requests the Commission provide an extended comment period of 40 days, i.e. a comment deadline of **January 21, 2026**.

and Procedure, 18 C.F.R. § 385.203(b)(3), to permit all of the persons listed to be placed on the official service list for this proceeding.

[575] *See id.* §§ 35.2(e) and 385.2010(f)(3).

[576] PJM already maintains, updates, and regularly uses email lists for all PJM Members and affected state commissions.

Respectfully submitted,

/s/ Ryan J. Collins

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Dated: December 12, 2025

Attachment A

Revisions to the
PJM Operating Agreement

Proposed Schedule 6-C

(Long-Term Regional Transmission
Planning Protocol)

(Clean Format)

SCHEDULE 6-C -
LONG-TERM REGIONAL TRANSMISSION PLANNING PROTOCOL

References to section numbers in this Schedule 6-C refer to sections of this Schedule 6-C, unless otherwise specified.

1. LONG-TERM REGIONAL TRANSMISSION PLANNING PROTOCOL

1.1 Purpose and Objectives.

The Long-Term Regional Transmission Plan to be developed pursuant to this Schedule 6-C, and in consideration of the Regional Transmission Expansion Plan developed pursuant to Schedule 6, will holistically address reliability, economic, and public policy needs of the PJM Region over the planning horizon, with full consideration of federal, Tribal, state, and local policies with consideration of benefits to consumers relative to costs without overbuilding. This Long-Term Regional Transmission Planning Protocol shall govern the process by which the Members rely upon the Office of the Interconnection to prepare the Long-Term Regional Transmission Plan for the enhancement or expansion of Transmission Facilities in order to identify and address Long-Term Transmission Needs of the PJM Region. The Office of the Interconnection will develop the Long-Term Regional Transmission Plan, with consideration of the unique requirements (e.g., long-lead development and construction timelines) associated with the planning of Long-Term Transmission Projects, to identify Long-Term Transmission Needs, investigate potential solutions to holistically address Long-Term Transmission Needs, and select Long-Term Transmission Projects to address those needs as described in this Schedule 6-C for which selection would be timely and appropriate. Throughout the Long-Term Regional Transmission Plan process, the Office of the Interconnection will identify Long-Term Transmission Projects for potential inclusion in the All-in-One Plan, then preliminarily select such identified projects for inclusion in the recommended Long-Term Regional Transmission Plan, re-optimized the All-in-One Plan in light of any voluntary funding agreements and the outcome of the State Opt-out mechanism, before finalizing a recommended Long-Term Regional Transmission Plan generally composed of Long-Term Transmission Projects for which selection would be timely and appropriate and any Long-Term Transmission Projects supported by a voluntary funding agreement pursuant to section 1.14. The Long-Term Regional Transmission Plan shall conform at a minimum to the applicable reliability principles, guidelines and standards of NERC, ReliabilityFirst Corporation, and SERC, and other Applicable Regional Entities in accordance with the planning and operating criteria and other procedures detailed in the PJM Manuals. The Long-Term Regional Transmission Plan shall continue to apply the FERC Order Nos. 890 and 1000 planning principles of: (1) coordination; (2) openness; (3) transparency; (4) information exchange; (5) comparability; and (6) dispute resolution. The Long-Term Regional Transmission Plan will be incorporated into the Regional Transmission Expansion Plan developed in accordance with Operating Agreement, Schedule 6.

1.2 Coordination with the Transmission Expansion Advisory Committee and the PJM Area Relevant States Entities Committee.

(a) During the development of the Long-Term Regional Transmission Plan, the Office of the Interconnection shall hold periodic meetings with the Transmission Expansion Advisory Committee. The Transmission Expansion Advisory Committee will provide advice and recommendations to the Office of the Interconnection to aid in the development of the Long-Term Regional Transmission Plan. The Transmission Expansion Advisory Committee participants shall be given an opportunity to provide advice and recommendations for consideration by the Office of the Interconnection regarding the Long-Term Scenario and sensitivity assumption development and analyses to be conducted by the Office of the Interconnection. The Transmission Expansion Advisory Committee participants shall be given the opportunity to review and provide advice and recommendations on the projects to be included in the Long-Term Regional Transmission Plan. The Transmission Expansion Advisory Committee meetings shall include discussions addressing interregional long-term planning issues, as identified by the Office of the Interconnection. The Transmission Expansion Advisory Committee shall be open to participation by: (i) all Transmission Customers and applicants for transmission service; (ii) any other entity proposing to develop Transmission Facilities to be integrated into the PJM Region; (iii) all Members; (iv) the electric utility regulatory agencies within the States in the PJM Region, the PJM Area Relevant States Entities Committee, and the Independent State Agencies Committee; and (v) any other interested entities or persons. The Office of the Interconnection shall make available to the Transmission Expansion Advisory Committee reasonably required information and data to develop the Long-Term Regional Transmission Plan. Such information and data shall be provided pursuant to the appropriate protection of confidentiality provisions and Office of the Interconnection's CEII process.

(b) During the development of the Long-Term Regional Transmission Plan, the Office of the Interconnection shall hold periodic meetings with the PJM Area Relevant State Entities Committee to provide updates, including discussion of: (i) the state policy and other assumptions, as may be identified pursuant to section 1.4, to be used in developing Long-Term Scenarios for the purpose of identifying Long-Term Transmission Needs and evaluating and analyzing potential solutions to such Long-Term Transmission Needs; (ii) legislative and regulatory initiatives, as appropriate, including state regulatory agency-initiated programs, and other public policies, to consider including in the Office of the Interconnection's long-term transmission planning analyses; (iii) the impacts of regulatory actions, projected changes in load growth, demand response resources, energy efficiency programs, generating capacity, market efficiency and other trends in the industry; (iv) alternative sensitivity studies, modeling assumptions and scenario analyses proposed by the PJM Area Relevant State Entities Committee, including, but not limited to, the additional scenario described in section 1.5(b); and (v) the Core Plan developed pursuant to section 1.10, and the All-in-One Plan developed pursuant to section 1.11, and any proposals that would address Long-Term Transmission Needs not identified for inclusion in the Core Plan and/or All-in-One Plan that may be available for voluntary funding opportunities pursuant to section 1.14. At such meetings, the Office of the Interconnection also shall discuss the current status of the Long-Term Regional Transmission Plan study process. The PJM Area Relevant State Entities Committee may request that the Office of Interconnection schedule additional meetings as necessary. The Office of the

Interconnection shall inform the Transmission Expansion Advisory Committee, as appropriate, of the input of the PJM Area Relevant State Entities Committee and shall consider such input in developing the Long-Term Regional Transmission Plan, and shall explain its determinations to the PJM Area Relevant State Entities Committee upon request.

1.3 Contents of the Long-Term Regional Transmission Plan.

(a) The Office of the Interconnection shall be responsible for the development of the Long-Term Regional Transmission Plan and for developing scenarios and sensitivities, and conducting the analyses on which the plan is based as well as the selection of the Long-Term Transmission Projects. The Long-Term Regional Transmission Plan shall be developed through an open and collaborative process with opportunity for meaningful participation through the Transmission Expansion Advisory Committee.

(b) The Long-Term Regional Transmission Plan shall consolidate the Long-Term Transmission Projects that holistically address Long-Term Transmission Needs of the PJM Region into a single plan by (i) maintaining the reliability of the PJM Region in an economically efficient manner; (ii) enhancing the efficiency and operational performance of wholesale electric service markets; (iii) advancing federal, Tribal, state, and local public policies; and (iv) facilitating the efficient long-term integration of generation resources. The Long-Term Regional Transmission Plan shall reflect transmission enhancements and expansions included in the Regional Transmission Expansion Plan; load forecasts; and projected changes in the resource mix, including projected generation retirements. The Long-Term Regional Transmission Plan shall be based on analyses that consider the data and information gathered and determined in accordance with this Schedule 6-C.

(c) The Long-Term Regional Transmission Plan shall, at a minimum, include a designation of the Transmission Owner(s) and/or other entity(ies) that will construct, own, and/or finance each Long-Term Transmission Project selected in accordance with this Schedule 6-C, and identify how all reasonably incurred costs are to be recovered.

1.4 Procedures and Considerations for Commencing Development of the Long-Term Regional Transmission Plan Long-Term Scenarios.

1.4.1 Commencement of the Process.

The Office of the Interconnection shall initiate a new Long-Term Regional Transmission Plan study process at least once every five years but may reduce the cycle duration as the process matures over time. Except for the first Long-Term Regional Transmission Plan study process conducted pursuant to this Schedule 6-C, a Long-Term Regional Transmission Plan study process commences with the initial assumptions meeting of the Transmission Expansion Advisory Committee for a given cycle, in accordance with section 1.4.4. The data gathering and consultation process may begin before the commencement of a Long-Term Regional Transmission Plan study process. The Office of the Interconnection shall notify the Transmission Expansion Advisory Committee participants of, as well as publicly notice, the commencement of the Long-Term Regional Transmission Plan study process.

1.4.2 Development of Long-Term Regional Transmission Plan Data, Scope, Assumptions, and Other Inputs.

(a) The Office of the Interconnection will engage with the PJM Area Relevant State Entities Committee, relevant Tribal authorities and local governmental bodies, Transmission Owners, and other relevant entities to identify factors in the following categories that the Office of Interconnection determines are likely to affect Long-Term Transmission Needs:

(1) federal, Tribal, state, and local laws and regulations that may affect the mix of resources that are projected to qualify to provide capacity and the demand for capacity;
(2) federal, Tribal, state, and local laws and regulations that relate to decarbonization and electrification;
(3) integrated resource plans that have been approved by relevant state agencies, cooperative boards, and municipal utility authorities and expected supply obligation for Load Serving Entities; and
(4) public utility policy goals and federal, Tribal, state, and local policy goals.

Such engagement will include the ability for applicable federal, Tribal, state, and local bodies to send information to the Office of the Interconnection via an online portal or other suitable means as may be determined by the Office of the Interconnection. The Office of the Interconnection will also receive identification of the foregoing from any other interested stakeholder.

(b) The Office of the Interconnection will engage with interested entities, which may include Tribal, state and local governmental entities, Transmission Owners, Generation Owners, Load-Serving Entities, Electric Distributors, End-Use Customers, and any other interested entities or persons to gather other necessary data to identify other factors in the following categories that the Office of the Interconnection determines are likely to affect Long-Term Transmission Needs, including, but not limited to:

(1) trends in fuel costs and in the cost, performance, and availability of different types of

Capacity Resources, as well as trends in electrification technologies (e.g., transportation and building);

(2) retirements of resources;

(3) generator interconnection requests and withdrawals; and

(4) public utility policy goals and federal, Tribal, state, and local policy goals.

The Office of the Interconnection may also gather other data and information that may be used in the development of the Long-Term Regional Transmission Plan. Such engagement may be informal and/or in accordance with the Transmission Expansion Advisory Committee stakeholder process. Such information and data may be provided upon request, as necessary, pursuant to the appropriate protection of confidentiality provisions and the Office of the Interconnection's CEII process.

(c) Using the data and information collected pursuant to this section 1.4.2 and section 1.4.3 and other data and information, the Office of the Interconnection shall, in consultation with the PJM Area Relevant States Committee, develop the Long-Term Scenario assumptions for use in the Long-Term Regional Transmission Plan study process.

1.4.3 Supply of Other Data.

In addition to the data and information gathered in accordance with section 1.4.2, the Office of the Interconnection shall gather data needed to conduct each Long-Term Regional Transmission Plan study process as follows:

(a) Consistent with the requirements in Tariff, Attachment M-5, each Transmission Owner shall provide the Office of the Interconnection a Candidate In-Kind Replacement Facility Needs List composed of anticipated In-Kind Replacement Facility Needs. Such Candidate In-Kind Replacement Facility Needs List shall be provided prior to development of scenarios in accordance with section 1.5. Transmission Owners may provide updated estimates of In-Kind Replacement Facilities throughout the Long-Term Regional Transmission Plan study cycle.

(b) The Office of the Interconnection also shall solicit from the PJM Area Relevant State Entities Committee (individually and as a group), Members, Transmission Customers, and other interested parties, including but not limited to electric utility regulatory agencies within the States in the PJM Region, information required by, or anticipated to be useful to, the Office of the Interconnection in its preparation of the Long-Term Regional Transmission Plan study, including laws, policies, and other information regarding potential sensitivity studies, modeling assumption variations, scenario analyses, and other information for consideration.

1.4.4 Initial Assumptions Meeting.

(a) The Office of the Interconnection, through the Transmission Expansion Advisory Committee, shall hold an initial assumptions meeting to be scheduled at the commencement of the Long-Term Regional Transmission Plan study process. The Office of the Interconnection may hold additional Transmission Expansion Advisory Committee meetings to discuss assumptions, as needed. The purpose of the assumptions meetings shall be to provide an open forum to discuss inputs and methods to be used in the development of scenarios and sensitivities. Such discussions may include other updates relevant to the development of the Long-Term Regional Transmission Plan.

(b) The Office of the Interconnection shall meet with the PJM Area Relevant State Entities Committee to discuss the assumptions, inputs, and methods to be used in the development of scenarios and sensitivities. Such discussions may include other updates relevant to the development of the Long-Term Regional Transmission Plan.

(c) Following the assumptions meetings and prior to developing scenarios, the Office of the Interconnection shall determine the range of assumptions to be used in the scenarios and studies, considering the advice and recommendations of the Transmission Expansion Advisory Committee and the PJM Area Relevant State Entities Committee. The Office of the Interconnection shall document and publicly post its determination.

1.4.5 Coordination of the Long-Term Regional Transmission Plan.

(a) The Long-Term Regional Transmission Plan shall be developed in accordance with the principles of interregional coordination with the Transmission Systems of the surrounding Regional Entities and with the local transmission providers.

(b) The Long-Term Regional Transmission Plan shall be developed taking into account the processes for coordinated regional transmission expansion planning established under the following agreements, as they may be amended from time to time:

- Joint Operating Agreement Between the Midcontinent Independent System Operator, Inc. and PJM Interconnection, L.L.C., which is found at https://www.pjm.com/pjmfiles/directory/merged-tariffs/miso-joa.pdf;

- Northeastern ISO/RTO Planning Coordination Protocol, which is described at Schedule 6-B and found at https://www.pjm.com/-/media/DotCom/documents/agreements/NE_Protocol.ashx;

- Joint Operating Agreement Among and Between New York Independent System Operator Inc. and PJM Interconnection, L.L.C., which is found at https://www.pjm.com/-/media/DotCom/documents/agreements/nyiso-joa.ashx;

- Interregional Transmission Coordination Between the SERTP and PJM Regions, which is found at Operating Agreement, Schedule 6-A;

- Allocation of Costs of Certain Interregional Transmission Projects Located in the PJM and SERTP Regions, which is located at Tariff, Schedule 12-B;

- Joint Reliability Coordination Agreement Among and Between PJM Interconnection, L.L.C., Tennessee Valley Authority, and Louisville Gas and Electric Company and Kentucky Utilities Company, which can be found at which can be found at https://www.pjm.com/-/media/DotCom/documents/agreements/joint-reliability-agreement-jrca-pjm-tva.ashx;

- Amended and Restated Agreement Joint Operating Agreement Among and Between PJM Interconnection L.L.C., and Duke Energy Progress, LLC, which is found at https://www.pjm.com/directory/merged-tariffs/progress-joa.pdf.

Coordinated regional transmission expansion planning shall also incorporate input from parties that may be impacted by the coordination efforts, including but not limited to, the Members, Transmission Customers, electric utility regulatory agencies in the PJM Region, and the State Consumer Advocates, in accordance with the terms and conditions of the applicable regional coordination agreements.

1.5 Development of Scenarios.

(a) For each Long-Term Regional Transmission Plan study cycle, the Office of the Interconnection shall develop at least three Long-Term Scenarios. The scenarios will: (1) be plausible and diverse; (2) utilize a 20-year transmission planning horizon; (3) reasonably represent probable future system needs; and (4) be based on best available data inputs, as collected in accordance with section 1.4. In developing Long-Term Scenarios, the Office of the Interconnection may utilize scenarios developed in prior near-term and long-term regional transmission plan study processes, updated with new data inputs, as necessary. In the development of the Long-Term Scenarios, the Office of the Interconnection will consider all data and information gathered pursuant to sections 1.4.2 and 1.4.3. Based on the feedback received in the processes set forth in sections 1.4.3 and 1.4.4 and its own analyses and engineering judgment, the Office of the Interconnection may accord different considerations of such data inputs in each scenario, but may not discount any data inputs relating to the factors set forth in section 1.4.2(a)(1) through (3) above. The Office of the Interconnection shall publish a general statement explaining how it will account for such data in the development of Long-Term Scenarios, including the extent to which it will discount any data inputs relating to the factors set forth in section 1.4.2(b)(1) through (4) above in each Long-Term Scenario, and list the data inputs it considered but did not incorporate in the Long-Term Scenario development. The Office of the Interconnection shall develop at least one extreme weather sensitivity and apply it to at least three Long-Term Scenarios.

(b) To the extent the PJM Area Relevant State Entities Committee formally requests the development of an additional Long-Term Scenario to be considered as part of the Long-Term Regional Transmission Plan study process, the Office of the Interconnection shall consider developing and studying such additional Long-Term Scenario within the Long-Term Regional Transmission Plan study process cycle. Such request must be made within 90 days from the initial assumptions meeting held pursuant to section 1.4.4. While the PJM Area Relevant State Entities Committee may specify assumptions and how certain data inputs should be considered differently than in any of the Long-Term Scenarios developed in accordance with section 1.5(a), to the extent such consideration of data or other PJM Area Relevant State Entities Committee-specific directive would result in a Long-Term Scenario that does not meet the requirements of this Schedule 6-C, such scenario may not be used in the Long-Term Regional Transmission Plan study process for the purposes of identifying Long-Term Transmission Needs or selecting Long-Term Transmission Projects.

(c) The Office of the Interconnection will post initial draft Long-Term Scenarios developed in accordance with this section 1.5 for review by interested stakeholders, including the PJM Area Relevant Entities Committee, subject to the appropriate protection of confidentiality provisions and Office of the Interconnection's CEII process. The Office of the Interconnection, through the Transmission Expansion Advisory Committee, shall hold a minimum of one meeting to discuss such draft Long-Term Scenarios. The Transmission Expansion Advisory Committee participants, as well as the PJM Area Relevant Entities Committee, will be afforded the opportunity to provide feedback on the draft scenarios.

1.6 Development of Long-Term Regional Transmission Plan Studies.

(a) The Office of the Interconnection shall conduct Long-Term Regional Transmission Plan studies in accordance with the procedures in this Schedule 6-C and in the PJM Manuals. In conducting the Long-Term Regional Transmission Plan studies, the Office of the Interconnection may collaborate with Transmission Owners, as appropriate.

(i) The Office of the Interconnection shall build power flow, production cost, and other appropriate models, as necessary, for analyses of the scenarios developed in accordance with section 1.5. Such analyses may include reliability, economic, and operational performance analyses, as well as other considerations.

(ii) The Office of the Interconnection may use sensitivity studies, modeling assumption variations and scenario analyses in evaluating and identifying Long-Term Transmission Needs and in assessing possible solutions.

(b) In accordance with the procedures in this Schedule 6-C and in the PJM Manuals, and based on the Office of the Interconnection's engineering judgment and other information available to the Office of the Interconnection, the Long-Term Regional Transmission Plan studies shall identify projected limitations on the Transmission System's physical, economic, and/or operational capability or performance to identify Long-Term Transmission Needs, determined based on reliability, economic, public policy, operational, and other drivers which may include: (1) the magnitude and severity of the issue; (2) the voltage level of the Transmission Facility on which the issue would occur; (3) the conditions in which the issue arose in the analyses; (4) the concentration and number of the issues; (5) type and nature of the driver; and (6) evolution of the issue over time.

(c) The Office of the Interconnection shall provide the results of its Long-Term Regional Transmission Plan studies and analyses to the PJM Area Relevant State Entities Committee and the Transmission Expansion Advisory Committee to consider the impact that sensitivities, assumptions, and scenarios may have on Long-Term Transmission Needs and the need for Long-Term Transmission Projects. The Office of the Interconnection shall hold additional meetings of the Transmission Expansion Advisory Committee to provide the opportunity for participants to review and offer comments regarding the violations of reliability criteria and analyses of the economic and operational performance of the Transmission System, as identified through the work performed by the Office of the Interconnection. These meetings will be scheduled as deemed necessary by the Office of the Interconnection or upon the request of the Transmission Expansion Advisory Committee. The Office of the Interconnection will provide updates on the status of the development of the Long-Term Regional Transmission Plan at these meetings.

1.6.1 Re-evaluation of Long-Term Transmission Projects in the Regional Transmission Expansion Plan.

(a) The Office of the Interconnection may evaluate, in each Long-Term Regional Transmission Plan study process, whether a previously approved Long-Term Transmission Project that has been incorporated into the Regional Transmission Expansion Plan should remain in the Regional Transmission Expansion Plan. Any modifications to the Regional Transmission Expansion Plan pursuant to this section shall be presented to the Transmission Expansion Advisory Committee for review and comment and approved by the PJM Board. The Office of the Interconnection shall re-evaluate the continued need for a given Long-Term Transmission Project under the following circumstances:

(1) To the extent the Designated Entity fails to meet a milestone in the development schedule set forth in the Designated Entity Agreement that causes a delay of the project's in-service date such that the project is unlikely to be in-service by the requested in-service date jeopardizing system reliability, operational performance, or other obligations of the Office of the Interconnection, the Office of the Interconnection may re-evaluate the need for the Long-Term Transmission Project, and based on that re-evaluation may: (i) retain the Long-Term Transmission Project in the Regional Transmission Expansion Plan; (ii) remove the Long-Term Transmission Project from the Regional Transmission Expansion Plan; or (iii) seek an alternative solution for inclusion in the Long-Term Regional Transmission Plan.

If the Office of the Interconnection retains the Long-Term Transmission Project in the Regional Transmission Expansion Plan, it shall determine whether the delay is beyond the Designated Entity's control and whether to retain the Designated Entity or to designate the Transmission Owner(s) in the Zone(s) where the project is located as Designated Entity(ies) for the Long-Term Transmission Project. If the Designated Entity is the Transmission Owner(s) in the Zone(s) where the project is located, the Office of the Interconnection shall seek recourse through the Consolidated Transmission Owners Agreement or FERC, as appropriate.

(2) To the extent the Office of the Interconnection becomes aware of a significant increase in the costs to construct and place in service an approved Long-Term Transmission Project, whether in relation to the project's benefits or on a standalone basis, the Office of the Interconnection may re-evaluate the need for the Long-Term Transmission Project, including evaluating updated costs and benefits in accordance with Operating Agreement, Schedule 6-C, and based on that re-evaluation may: (i) retain the Long-Term Transmission Project in the Regional Transmission Expansion Plan; (ii) remove the Long-Term Transmission Project from the Regional Transmission Expansion Plan; or (iii) seek an alternative solution for inclusion in the Long-Term Regional Transmission Plan. If the Office of the Interconnection retains the Long-Term Transmission Project in the Regional Transmission Expansion Plan, the Designated Entity shall not change.

(3) To the extent the Office of the Interconnection becomes aware of a change in law or regulation such that the Long-Term Transmission Project may no longer meet the applicable selection criteria on which the project was initially selected, the Office of the Interconnection may re-evaluate the need for the Long-Term Transmission Project, including evaluating updated costs and benefits in accordance with Operating Agreement, Schedule 6-C, sections 1.9 and 1.10 and/or 1.11, as applicable, and based on that re-evaluation may: (i) retain the Long-Term Transmission Project in the Regional

Transmission Expansion Plan; (ii) remove the Long-Term Transmission Project from the Regional Transmission Expansion Plan; or (iii) seek an alternative solution for inclusion in the Long-Term Regional Transmission Plan. If the Office of the Interconnection retains the Long-Term Transmission Project in the Regional Transmission Expansion Plan, the Designated Entity shall not change.

(b) In each of these three circumstances, the Office of the Interconnection shall employ the following principles in re-evaluating inclusion of such Long-Term Transmission Projects in the Regional Transmission Expansion Plan (i) system reliability must be preserved and (ii) benefits accounting for costs over time should be maximized without over-building facilities.

(c) Notwithstanding the foregoing, the Office of the Interconnection may not re-evaluate and remove a Long-Term Transmission Projects included in the Regional Transmission Expansion Plan if the Office of the Interconnection determines that (i) removal of the Long-Term Transmission Project, or specific components of the project, may adversely affect reliability of the Transmission System, (ii) the benefits of the Long-Term Transmission Project(s) still outweigh its costs, considering sunk costs and advancement of construction activities, or (iii) removal of the project from the Regional Transmission Expansion Plan would have adverse and cascading impacts to the interconnection and transmission planning processes.

1.6.2 Identification of Core LT Needs and Additional LT Needs.

(a) The Office of the Interconnection shall classify the subset of Long-Term Transmission Needs identified in the Long-Term Regional Transmission Plan study needed to maintain system reliability as Core LT Needs. Such Long-Term Transmission Needs are associated with maintaining system reliability as determined by the following model inputs: projected transmission system topology; forecasted future demand, including load growth and firm transmission commitments; projected generation resource deactivations and additions; and a generation resource mix capable of meeting applicable reliability criteria. Core LT Needs, while driven by maintaining system reliability, can also encompass economic and policy needs.

(b) The Office of the Interconnection shall classify as an Additional LT Need any Long-Term Transmission Need identified in the Long-Term Regional Transmission Plan study that is not classified as a Core LT Need.

(c) Following identification and classification of Long-Term Transmission Needs and prior to opening the proposal window in accordance with section 1.8, the Office of the Interconnection shall post: (1) all Long-Term Transmission Needs identified in the Long-Term Regional Transmission Plan study; (2) whether such needs are classified as Core LT Needs or Additional LT Needs; (3) the information related to each need as described further in section 1.8(b); and (4) whether a Right-Sized Replacement Facility may address a posted Long-Term Transmission Need as described further in section 1.7. For each Long-Term Transmission Need that may be addressed through right-sizing an In-Kind Replacement Facility pursuant to section 1.7, the Office of the Interconnection will post for informational purposes the Long-Term Transmission Need, the relevant In-Kind Replacement Facility, the identified Right-Sized Replacement Facility, and any incidental system impacts caused by the Right-Sized Replacement Facility that would need to be addressed. Such postings shall support the role of the Transmission Expansion Advisory Committee in the development of the Long-Term Regional Transmission Plan, and the Office of the Interconnection may receive feedback on such postings prior to opening the proposal window in accordance with section 1.8. The Office of the Interconnection shall provide the Transmission Expansion Advisory Committee and the PJM Area Relevant State Entities Committee an opportunity to comment on the classification of Core LT Needs and Additional LT Needs.

1.7 Identification of Right-Sized Replacement Facilities.

The Office of the Interconnection shall identify for possible selection Right-Sized Replacement Facilities to address Long-Term Transmission Needs. Identification of Right-Sized Replacement Facilities shall be as follows:

(a) Prior to the posting of Long-Term Transmission Needs as described in section 1.6.2(c), the Office of the Interconnection shall meet with each Transmission Owner individually to review the identified Long-Term Transmission Needs and the Candidate In-Kind Replacement Facility Needs List provided pursuant to Tariff, Attachment M-5. The Office of the Interconnection will then evaluate the In-Kind Replacement Facility Needs against the Long-Term Transmission Needs identified in accordance with section 1.6.2 to evaluate whether any Long-Term Transmission Need can be addressed through Right-Sized Replacement Facilities. The determination of any such Right-Sized Replacement Facility, similar to proposals submitted through the competitive window in section 1.8, shall consider all viable transmission technologies, including alternative transmission technologies in accordance with section 1.8(c)(2). The Office of the Interconnection will notify the Transmission Expansion Advisory Committee of any identified Right-Sized Replacement Facilities for review and comment and explain its conclusions.

(b) A Transmission Owner that is the owner of the existing asset that has been identified and selected to be a Right-Sized Replacement Facility shall be designated to construct and own or finance any facilities identified and selected as a Right-Sized Replacement Facility.

1.8 Development of Long-Term Transmission Projects to Address Identified Long-Term Transmission Needs.

(a) **Pre-Qualification Process**. All entities desiring to be eligible to be a Designated Entity of a Long-Term Transmission Project(s) must pre-qualify to be a Designated Entity in accordance with the terms and conditions set forth in Operating Agreement, Schedule 6, section 1.5.8(a).

(b) **Posting of Long-Term Transmission Needs**. Following identification of Long-Term Transmission Needs in the Long-Term Regional Transmission Plan studies described in this Operating Agreement, Schedule 6-C and the PJM Manuals, and after consideration of identified Long-Term Transmission Needs which can be addressed by a Right-Sized Replacement Facility pursuant to section 1.7, and as part of opening the proposal window, the Office of the Interconnection shall post on the PJM website all Long-Term Transmission Need information, including the studies for each Long-Term Scenario, a recommended set of Long-Term Transmission Needs to be addressed classified into Core LT Needs and Additional LT Needs, the system conditions considered, and policy requirements, including federal, state, Tribal, and local policy objectives. For each Long-Term Transmission Need that may be addressed through right-sizing an In-Kind Replacement Facility Need pursuant to section 1.7, the Office of the Interconnection will post for informational purposes the Long-Term Transmission Need, the relevant In-Kind Replacement Facility Need, the identified Right-Sized Replacement Facility, and any incidental system impacts caused by the Right-Sized Replacement Facility that would need to be addressed. The Office of the Interconnection also shall post an explanation regarding why certain Long-Term Transmission Needs, if any, were identified but were not to be addressed through proposals, including whether such needs were determined to be more appropriately addressed in a different planning process or through subsequent Long-Term Regional Transmission Planning cycles.

(c) **Project Proposal Windows**. The Office of the Interconnection shall provide notice to stakeholders of a 120 to 180-day proposal window for all posted Long-Term Transmission Needs. The Office of the Interconnection may shorten or lengthen a proposal window that is not yet opened based on, among other things: (1) complexity of the violations or system conditions and the anticipated lead-times associated with the proposals; and (2) whether there is sufficient time remaining in the relevant planning cycle to accommodate a standard proposal window and timely address the violation or system conditions. In the event that the Office of the Interconnection determines to lengthen or shorten a proposal window, it will post on the PJM website the new proposal window period and an explanation as to the reasons for the change. The Office of the Interconnection may lengthen a proposal window that already is opened based on one or more of the following criteria: (i) material changes in assumptions or conditions relating to the underlying drivers for a Long-Term Transmission Need; (ii) availability of new or changed information regarding the nature of the violations and the facilities involved; and (iii) time remaining in the relevant proposal window at the time of communicating the change. During these windows, the Office of the Interconnection will accept proposals from existing Transmission Owners and Nonincumbent Developers for potential transmission enhancements to address the posted Long-Term Transmission Needs.

(1) All proposals submitted in the proposal windows must, in accordance with the PJM Manuals, contain: (i) the name and address of the proposing entity; (ii) a statement whether the entity intends to be the Designated Entity for the proposed project; (iii) the location of proposed project, including source and sink, if applicable; (iv) relevant engineering studies, and other relevant information as described in the PJM Manuals pertaining to the proposed project; (v) to the extent any component of the proposal would operate at voltages less than 200 kV, a justification supporting the inclusion of such component(s) as necessary to address the Long-Term Transmission Need; (vi) the projected in-service date supported by, at least, a proposed initial construction schedule including projected dates on which needed permits are required to be obtained in order to meet the projected in-service date; (vii) cost estimates and analyses that provide sufficient detail for the Office of Interconnection to review and analyze the proposed cost of the project (in present day dollars); and (viii) a $10,000 non-refundable deposit must be included with each project proposal submitted by a proposing entity that indicates an intention to be the Designated Entity.

(2) In addition, each proposal must detail how the project sponsor considered the following alternative transmission technologies in addressing the Long-Term Transmission Need(s) to be addressed by the proposal: (i) dynamic line ratings; (ii) advanced power flow control devices; (iii) advanced conductors; and (iv) transmission switching. To the extent such an alternative transmission technology is not part of the proposal, the proposal must provide a sufficiently detailed justification explaining why the alternative transmission technology is not part of the proposal. Such consideration and justification should be consistent with the best practices related to alternative transmission technologies set forth in the PJM Manuals and technical reference guides posted by the Office of the Interconnection.

(3)(i) In addition, any proposing entity indicating its intention to be the Designated Entity will be responsible for and must pay all actual costs incurred by the Office of the Interconnection to evaluate the submitted project proposal. To the extent the Office of the Interconnection incurs costs to evaluate multiple submitted project proposals where such costs are not severable by individual project proposal, the Office of the Interconnection shall invoice equal shares of the non-severable costs among the project proposals that cause such non-severable costs to be incurred. Notwithstanding this method of invoicing non-severable costs, non-severable costs will be jointly and severally owed by the proposing entities that cause such costs to be incurred.

(3)(ii) All non-refundable deposits will be credited towards the actual costs incurred by the Office of the Interconnection as a result of the evaluation of a submitted project proposal.

(3)(iii) Following the close of a proposal window but before the Office of the Interconnection incurs any third-party consultant work costs to evaluate a submitted project proposal, the Office of the Interconnection will issue to the proposing entity an initial invoice seeking payment of estimated costs to evaluate each submitted project proposal. The estimated costs will be determined by considering the: potential cost of consultant work, historical estimates for project proposals of similar scope, complexity and nature of the need, and/or technology and nature of the project proposal. The Office of the Interconnection may issue additional invoices to the proposing entity prior to the completion of the evaluation activities associated with a project proposal if the Office of the Interconnection receives updated actual cost information and/or upon consideration of the factors specified in this section.

(3)(iv) At the completion of the evaluation activities associated with a project proposal, the Office of the Interconnection will reconcile the actual costs with monies paid and, to the extent necessary, issue either a final invoice or refund.

(3)(v) The proposing party must pay any invoiced costs within fifteen (15) calendar days of the Office of the Interconnection sending the invoice to the proposing entity or its agent. For good cause shown, this fifteen (15) calendar day time period may be extended by the Office of the Interconnection. If the proposing entity fails to pay any invoice within the time period specified and/or extended by the Office of the Interconnection in accordance with this section, the proposing entity's pre-qualification status may be suspended and the proposing entity will be ineligible to be a Designated Entity for any projects that do not yet have an executed Designated Entity Agreement. Such a suspension and/or ineligibility will remain in place until the proposing entity pays in full all outstanding monies owed to the Office of the Interconnection as a result of the evaluation of the proposing entity's project proposal(s).

(4) Proposals from all entities (both existing Transmission Owners and Nonincumbent Developers) that indicate the entity intends to be a Designated Entity, also must contain information to the extent not previously provided pursuant to section 1.8(a) demonstrating: (i) technical and engineering qualifications of the entity, its affiliate, partner, or parent company relevant to construction, operation, and maintenance of the proposed project; (ii) experience of the entity, its affiliate, partner, or parent company in developing, constructing, maintaining, and operating the type of transmission facilities contained in the project proposal; (iii) evidence of transmission facilities the entity, its affiliate, partner, or parent company previously constructed, maintained, or operated; (iv) the ability of the entity or its affiliate, partner, or parent company to obtain adequate financing relative to the proposed project, which may include a letter of intent from a financial institution approved by the Office of the Interconnection or such other evidence of the financial resources available to finance the construction, operation, and maintenance of the proposed project; (v) the managerial ability of the entity, its affiliate, partner, or parent company to contain costs and adhere to construction schedules for the proposed project, including a description of verifiable past achievement of these goals; (vi) a demonstration of other advantages the entity may have to construct, operate, and maintain the proposed project, including any binding cost commitment proposal the entity may wish to submit; and (vii) any other information that may assist the Office of the Interconnection in evaluating the proposed project. To the extent that an entity submits a cost commitment proposal the entity shall submit sufficient information for the Office of Interconnection to determine the binding nature of the proposal with respect to critical elements of project development. The Office of the Interconnection may not alter

the requirements for proposal submission to require the submission of a binding cost commitment proposal, in whole or in part, or otherwise mandate or unilaterally alter the terms of any such proposal or the requirements for proposal submission, the submission of any such proposals at all times remaining voluntary.

(5) The Office of the Interconnection may request additional reports or information from an existing Transmission Owner or Nonincumbent Developers that it determines are reasonably necessary to evaluate its specific project proposal pursuant to the criteria set forth in sections 1.9, 1.10, 1.11, and 1.15. If the Office of the Interconnection determines any of the information provided in a proposal is deficient, including the information required by section 1.8(c)(2) regarding alternative transmission technologies, or it requires additional reports or information to analyze the submitted proposal, the Office of the Interconnection shall notify the proposing entity of such deficiency or request. Within 10 Business Days of receipt of the notification of deficiency and/or request for additional reports or information, or other reasonable time period as determined by the Office of the Interconnection, the proposing entity shall provide the necessary information.

(6) The request for additional reports or information by the Office of the Interconnection pursuant to section 1.8(c)(5) may be used only to clarify a proposed project as submitted. In response to the Office of the Interconnection's request for additional reports or information, the proposing entity (whether an existing Transmission Owner or Nonincumbent Developer) may not submit a new project proposal or modifications to a proposed project once the proposal window is closed. In the event that the proposing entity fails to timely cure the deficiency or provide the requested reports or information regarding a proposed project, the proposed project will not be considered for inclusion in the recommended Long-Term Regional Transmission Plan.

(7)(i) The Office of the Interconnection may work with one or more project sponsors, including the Transmission Owner of an identified Right-Sized Replacement Facility, to modify submitted proposals, including an identified Right-Sized Replacement Facility, so as to adjust the submitted proposed projects to best address the posted Long-Term Transmission Needs in a more efficient or cost-effective manner.

(7)(ii) In addition to the process specified in section 1.7, the Office of the Interconnection shall consult with the Transmission Owner listing an In-Kind Replacement Facility Need to review and/or consider modifying an identified Right-Sized Replacement Facility. To the extent the Office of the Interconnection, through its review of proposals, determines that there may be an additional opportunity for right-sizing of an In-Kind Replacement Facility Need to address a posted Long-Term Transmission Need, the Office of the Interconnection shall consult with the Transmission Owner listing such In-Kind Replacement Facility Need regarding identification of an additional Right-Sized Replacement Facility. As part of consultations under this section regarding a Right-Sized Replacement Facility, the Transmission Owner shall provide the Office of the Interconnection with estimated cost of an anticipated replacement facility that would otherwise address the associated In-Kind Replacement Need absent the Right-

Sized Replacement Facility.

(8) Within 60 days of the closing of the proposal window, the Office of the Interconnection may notify the proposing entity that additional per project fees are required if the Office of the Interconnection determines the proposing entity's submittal includes multiple project proposals or components. Within 15 Business Days of receipt of the notification of insufficient funds by the Office of the Interconnection, the proposing entity shall submit such funds or notify the Office of the Interconnection which of the project proposals the Office of the Interconnection should evaluate based on the fee(s) submitted.

(d) **Posting and Review of Proposals**. Following the close of a proposal window, the Office of the Interconnection shall post on the PJM website all proposals submitted pursuant to section 1.8(c) and all identified Right-Sized Replacement Facilities. The Office of the Interconnection shall review and evaluate all proposals submitted during a proposal window, including the justification for the inclusion or exclusion of alternative transmission technologies based on the information submitted in accordance with section 1.8(c)(2). In accordance with sections 1.9, 1.10, and 1.11, the Office of the Interconnection shall evaluate all identified Right-Sized Replacement Facilities and each proposal submitted during a proposal window and identify proposals for inclusion in the Core Plan and the All-in-One Plan. Proposals that were not preliminarily selected in the All-in-One Plan in accordance with section 1.12(b) shall be separately identified and eligible for voluntary funding opportunities, where the Office of the Interconnection deems appropriate, in accordance with section 1.14.

1.9 Evaluation of Proposals to Address Posted Long-Term Transmission Needs.

(a) The Office of the Interconnection may evaluate proposals, including any identified Right-Sized Replacement Facilities, individually or in conjunction with other proposals to determine the more efficient or cost-effective solution for addressing the identified Long-Term Transmission Needs. In determining whether a proposal submitted pursuant to section 1.8(c), individually or in combination with other proposals, is the more efficient or cost-effective solution and therefore should be included in the recommended Long-Term Regional Transmission Plan, the Office of the Interconnection, based on its engineering judgment and taking into account sensitivity studies and scenario analyses considered pursuant to section 1.6, shall consider, at a minimum, the following criteria and as further described in the PJM Manuals, to the extent applicable: (i) the extent to which the proposal would address and solve the posted Long-Term Transmission Need and not create or exacerbate other Long-Term Transmission Needs, including the proposal's expected in-service date relative to the requested in-service date; (ii) the extent to which the proposal would have secondary benefits, such as addressing additional or other system reliability, operational performance, or economic efficiency needs; (iii) the ability to timely complete the project and project development feasibility; (iv) the robustness of the proposal, including the expandability of the proposed Transmission Facility(ies); (v) constructability, including the maximization of existing rights-of-way; (vi) the benefits, as determined in part in accordance with section 1.9(b), including the maximization of benefits, all other things equal; (vii) costs; and (viii) other factors affecting the cost-effectiveness of the proposed solution, including the quality and effectiveness of any voluntarily-submitted binding cost commitment proposal related to Transmission Facilities which caps project construction costs (either in whole or in part), project total return on equity (including incentive adders), or capital structure. The Office of the Interconnection shall use its engineering judgment in evaluating the proposals. In scrutinizing the cost of project proposals, the Office of the Interconnection shall determine for each proposal, the comparative risks to be borne by ratepayers as a result of the proposal's binding cost commitment or the use of non-binding cost estimates. Such comparative analysis shall summarize, in a clear and transparent manner, the rationale by which the Office of the Interconnection scrutinized the cost and overall cost-effectiveness of each finalist's proposal, including any binding cost commitments. Such comparative analysis shall be presented to the Transmission Expansion Advisory Committee for review and comment. In evaluating any cost, return on equity and/or capital structure proposal, the Office of the Interconnection is not making a determination that the cost, return on equity or capital structure results in just and reasonable rates, which shall be addressed in the required rate filing with the Commission. Stakeholders seeking to dispute a particular return on equity analysis utilized in the evaluation process may address such disputes with the Designated Entity in the applicable rate proceeding where the Designated Entity seeks approval of such rates from the Commission. The Office of the Interconnection may modify the technical specifications of a proposal, in accordance with the PJM Manuals and in consultation with the proposing entity, which may result in the modified proposal being determined to be the more efficient or cost-effective proposal for recommendation to the PJM Board.

(b) For each proposal submitted pursuant to section 1.8(c), the Office of the Interconnection will evaluate, at a minimum, the following benefits associated with installation of the proposal over a 20-year planning horizon starting from the estimated in-service date of the Long-Term

Transmission Project: (i) the avoidance or deferral of any transmission facilities and/or replacement of aging transmission infrastructure, including cost savings associated with accelerating the development of a Long-Term Transmission Project start date in lieu of implementing a Short-term Project or replacement facility; (ii) reduction in loss of load probability or planning reserve margin; (iii) production cost savings; (iv) reduction in transmission energy losses; (v) any reduction in transmission congestion resulting from transmission outages; (vi) mitigation of extreme weather events and unexpected system conditions; (vii) capacity cost benefits from reduced peak losses or the line loss component of the corresponding reduced loss of load benefit; and (viii) any other financially quantifiable benefit to customers resulting from a Long-Term Transmission Project. The Office of the Interconnection, in accordance with the PJM Manuals, may measure the foregoing benefits through a production cost simulation model and other models, as appropriate, accounting for both normal operating conditions and extreme weather events, except with respect to the benefit in section (b)(i) which may be measured on an avoided cost basis.

1.10 Criteria for Considering Inclusion of a Project in the Core Plan.

(a) After the close of the competitive window described in section 1.8, the Office of the Interconnection, based on its evaluation of proposals, individually and in conjunction with other proposals, and identified Right-Sized Replacement Facilities in accordance with section 1.9 and in accordance with the PJM Manuals and its engineering judgment, shall develop a Core Plan addressing the posted Core LT Needs, such that the Core Plan, when considered as a portfolio of Long-Term Transmission Projects, shall address identified Core Needs while meeting a Core Plan Benefit-to-Cost Ratio of not less than 1:1.

(1) The Core Plan Benefit-to-Cost Ratio shall be equal to the quotient of [the benefits of the portfolio of the Long-Term Transmission Projects included in the Core Plan] divided by [the costs of the portfolio of the Long-Term Transmission Projects included in the Core Plan], where benefits will be the present value of all benefits determined in accordance with sections 1.9(b) provided by all Long-Term Transmission Projects included in the Core Plan for the first 20 years' of the projects' lives, and costs will be the present value of all costs determined in accordance with section 1.9(a) for the first 20 years' of the projects' lives.

(2) For any proposal that could address a posted Core LT Need but such proposal was not identified for inclusion in the Core Plan, the Office of the Interconnection shall provide an explanation why such proposal was not identified for inclusion as part of the posting made in accordance with section 1.12(a).

(b) If the Office of the Interconnection determines that none of the proposed Long-Term Transmission Projects received during a proposal window would address or sufficiently address a posted Core LT Need that the Office of the Interconnection determines should be addressed, the Office of the Interconnection may propose a Long-Term Transmission Project to solve the posted Core LT Need for inclusion in the recommended Long-Term Regional Transmission Plan and will present such Long-Term Transmission Project to the Transmission Expansion Advisory Committee for review and comment. If the Office of the Interconnection proposes a specific project to address such need, the Transmission Owner(s) in the Zone(s) where the Long-Term Transmission Project is to be located shall be the Designated Entity(ies) for the Project. Alternatively, the Office of the Interconnection may open a 30-day (or longer) window, in accordance with the PJM Manuals, to solicit proposals to address such need. In such event, the Office of the Interconnection shall present to the Transmission Expansion Advisory Committee the results of such window, including any Long-Term Transmission Project identified by the Office of the Interconnection as the more efficient or cost-effective solution.

(c) In evaluating proposals to address a Core LT Need, to the extent the Office of the Interconnection determines that the more efficient or cost-effective solution to address such need may be a Short-term Project either proposed pursuant to section 1.8 above or developed through the Regional Transmission Expansion Plan Protocol in Operating Agreement, Schedule 6, the Office of the Interconnection may address such transmission need through the Regional Transmission Expansion Plan process in Operating Agreement, Schedule 6.

1.11 Criteria for Considering Inclusion of a Project in the All-in-One Plan.

(a) After the close of the competitive window described in section 1.8, the Office of the Interconnection, based on its evaluation of proposals, individually and in conjunction with other proposals, in accordance with section 1.9 and in accordance with the PJM Manuals and its engineering judgment, shall develop an All-in-One Plan that addresses the posted Core LT Needs plus those Additional LT Needs holistically in accordance with the criteria is this section. Any Long-Term Transmission Project (or portion thereof) included in the All-in-One Plan to address one or more related Additional LT Needs, in whole or in part, shall have an All-in-One Incremental Plan Benefit-to-Cost Ratio of no less than 1.25:1. To the extent no Additional LT Need may be addressed in whole or in part through a proposal submitted pursuant to section 1.8 for failure to meet the All-in-One Plan Incremental Benefit-to-Cost Ratio, the All-in-One Plan will be identical to the Core Plan.

(1) The All-in-One Plan Incremental Benefit-to-Cost Ratio shall equal the quotient of [the sum of all the incremental benefits of the Long-Term Transmission Project's facilities associated with addressing Additional LT Need(s) as compared to the benefits of such Long-Term Transmission Project's facilities associated with addressing Core LT Need(s)] divided by [the sum of all the incremental costs of the Long-Term Transmission Project's facilities associated with addressing Additional LT Need(s) as compared to the costs of such Long-Term Transmission Project's facilities associated with addressing Core LT Need(s)], where benefits will be the present value of all benefits determined in accordance with section 1.9(b) determined for at least the first 20 years' of the Long-Term Transmission Project's life, and costs will be the present value of the costs determined in accordance with section 1.9(a) determined for the same timeframe as the benefits.

(2) For any proposal that could address a posted Additional LT Need but was not identified for inclusion in the initial All-in-One Plan, the Office of the Interconnection shall provide an explanation why such proposal was not identified as part of the posting made in accordance with section 1.12(a).

(b) If none of the proposed Long-Term Transmission Projects received during a proposal window would address or sufficiently address a posted Additional LT Need, the Office of the Interconnection may propose a Long-Term Transmission Project to solve the posted Additional LT Need for inclusion in the recommended Long-Term Regional Transmission Plan and will present such Long-Term Transmission Project to the Transmission Expansion Advisory Committee for review and comment. If the Office of the Interconnection proposes a specific project to address such need, the Transmission Owner(s) in the Zone(s) where the Long-Term Transmission Project is to be located shall be the Designated Entity(ies) for the Project. Alternatively, the Office of the Interconnection may open a 30-day (or longer) window, in accordance with the PJM Manuals, to solicit proposals to address such need. In such event, the Office of the Interconnection shall present to the Transmission Expansion Advisory Committee the results of such window, including any Long-Term Transmission Project identified by the Office of the Interconnection as the more efficient or cost-effective solution. The project(s) identified shall meet the All-in-One Incremental Plan Benefit-to-Cost Ratio.

1.12 Posting and Review of the Core Plan and the All-in-One Plan.

(a) The Office of the Interconnection shall post on the PJM website and present to both the PJM Area Relevant State Entities Committee and the Transmission Expansion Advisory Committee for review and comment the Core Plan and the All-in-One Plan and any proposals that would address Long-Term Transmission Needs but were not identified for inclusion in the Core Plan and/or All-in-One Plan. Such posting shall occur within three years of the commencement of the Long-Term Regional Transmission Plan study process, as provided in section 1.4.1.

(b) Prior to posting the Core Plan and the All-in-One Plan in accordance with section 1.12(a), the Office of the Interconnection shall preliminarily evaluate, considering the criteria in section 1.9, each Long-Term Transmission Project identified in the Core Plan and/or All-in-One Plan to determine whether selection would be timely and appropriate of any such project to be included in the recommended Long-Term Regional Transmission Plan. In such evaluation for preliminary selection, the Office of the Interconnection shall consider each Long-Term Transmission Project's development and implementation timeline, with particular consideration of whether such timeline must commence prior to the completion of the next Long-Term Regional Transmission Plan cycle. As part of the information posted in accordance with section 1.12(a), the Office of the Interconnection shall identify whether each Long-Term Transmission Project included in the Core Plan and/or All-in-One Plan has been preliminarily selected for inclusion in the recommended Long-Term Regional Transmission Plan.

(c) Based on review and comment by both the PJM Area Relevant State Entities Committee and the Transmission Expansion Advisory Committee, the Office of the Interconnection may, if it deems necessary, conduct further study and evaluation. The Office of the Interconnection shall post on the PJM website and present to both the PJM Area Relevant State Entities Committee and the Transmission Expansion Advisory Committee any revised Core Plan and the All-in-One Plan for review and comment. After consultation with both the PJM Area Relevant State Entities Committee and the Transmission Expansion Advisory Committee, the Office of the Interconnection shall determine the All-in-One Plan for determining the recommended Long-Term Regional Transmission Plan consistent with this Operating Agreement, Schedule 6-C.

1.13 State Opt-Out from Cost Responsibility for Long-Term Transmission Project(s) Addressing Additional LT Needs.

[Reserved]

1.14 Voluntary Funding for Long-Term Transmission Project(s) Addressing Additional LT Needs.

[Reserved]

1.15 Identification of the Designated Entity for a Long-Term Transmission Project.

1.15.1 Entity-Specific Criteria Considered in Determining the Designated Entity for a Long-Term Transmission Project.

In determining whether the entity proposing a Long-Term Transmission Project recommended for inclusion in the Long-Term Regional Transmission Plan shall be the Designated Entity, the Office of the Interconnection shall consider: (i) whether in its proposal, the entity indicated its intent to be the Designated Entity; (ii) whether the entity is pre-qualified to be a Designated Entity pursuant to Operating Agreement, Schedule 6-C, section 1.8(a); (iii) information provided either in the proposing entity's submission pursuant to the Operating Agreement, Schedule 6-C, section 1.8(a) or 1.8(c)(4) relative to the specific proposed project that demonstrates: (1) the technical and engineering experience of the entity or its affiliate, partner, or parent company, including its previous record regarding construction, maintenance, and operation of transmission facilities relative to the project proposed; (2) ability of the entity or its affiliate, partner, or parent company to construct, maintain, and operate transmission facilities, as proposed, (3) capability of the entity to adhere to standardized construction, maintenance, and operating practices, including the capability for emergency response and restoration of damaged equipment; (4) experience of the entity in acquiring rights of way; and (iv) any other factors that may be relevant to the proposed project, including but not limited to whether the proposal includes the entity's previously selected project(s) included in the plan.

1.15.2 Designated Entity.

(a) **Notification of Designated Entity.** Within 15 Business Days of PJM Board approval of the Long-Term Regional Transmission Plan, the Office of the Interconnection shall notify the entities that have been designated as the Designated Entities for projects included in the Long-Term Regional Transmission Plan of such designations. In such notices, the Office of the Interconnection shall provide: (i) the needed in-service date of the project; and (ii) a date by which all necessary state approvals should be obtained to timely meet the needed in-service date of the project. The Office of the Interconnection shall use these dates as part of its on-going monitoring of the progress of the project to ensure that the project is completed by its needed in-service date.

(b) **Acceptance of Designation**. Within 30 days of receiving notification of its designation as a Designated Entity, the existing Transmission Owner or Nonincumbent Developer shall notify the Office of the Interconnection of its acceptance of such designation and submit to the Office of the Interconnection a development schedule, which shall include, but not be limited to, milestones necessary to develop and construct the project to achieve the required in-service date, including milestone dates for obtaining all necessary authorizations and approvals, including but not limited to, state approvals. For good cause, the Office of the Interconnection may extend the deadline for submitting the development schedule. The Office of the Interconnection then shall review the development schedule and within 15 days or other reasonable time as required by the Office of the Interconnection: (i) notify the Designated Entity of any issues regarding the development schedule identified by the Office of the Interconnection that may need to be addressed to ensure that the project meets its needed in-service date; and (ii) tender to the

Designated Entity an executable Designated Entity Agreement setting forth the rights and obligations of the parties. To retain its status as a Designated Entity, within 60 days of receiving an executable Designated Entity Agreement (or other such period as mutually agreed upon by the Office of the Interconnection and the Designated Entity), the Designated Entity (both existing Transmission Owners and Nonincumbent Developers) shall submit to the Office of the Interconnection a form of security as necessary and in accordance with the terms of the Designated Entity Agreement, to cover the incremental costs of construction resulting from reassignment of the project, and return to the Office of the Interconnection an executed Designated Entity Agreement containing a mutually agreed upon development schedule. In the alternative, the Designated Entity may request dispute resolution pursuant to the Operating Agreement, Schedule 5, or request that the Designated Entity Agreement be filed unexecuted with the Commission. Challenges to the Designated Entity Agreements are subject to the Federal Power Act's just and reasonable standard.

(c) **Transmission Owners Required to be the Designated Entity**. Notwithstanding anything to the contrary in this Operating Agreement, Schedule 6-C, in all events, the Transmission Owner(s) in whose Zone(s) a Long-Term Transmission Project or a discrete component of a project proposed pursuant to the Operating Agreement, Schedule 6-C, section 1.8(c) is to be located will be the Designated Entity for the project (or a discrete component of the project), when the Long-Term Transmission Project or project component (except for a Right-Sized Replacement Facility) is: (i) a Transmission Owner Upgrade, including any upgrade using an alternative transmission technology; (ii) located solely within a Transmission Owner's Zone and the costs of the project are allocated solely to the Transmission Owner's Zone; (iii) located solely within a Transmission Owner's Zone and is not selected in the Regional Transmission Expansion Plan for purposes of cost allocation; or (iv) proposed to be located on a Transmission Owner's existing right of way and the project would alter the Transmission Owner's use and control of its existing right of way under state law. Transmission Owner shall be the Designated Entity when required by state law, regulation or administrative agency order with regard to Long-Term Transmission Projects or portions of such Long-Term Transmission Projects located within that state.

1.16 Development of the Recommended Long-Term Regional Transmission Plan.

(a) The Office of the Interconnection shall be responsible for the development of the Long-Term Regional Transmission Plan. Following the development of the All-in-One Plan, the Office of the Interconnection shall develop a recommended Long-Term Regional Transmission Plan for incorporation into the Regional Transmission Expansion Plan and approval by the PJM Board. Prior to presenting any recommended Long-Term Regional Transmission Plan to the PJM Board, the Office of the Interconnection shall consult with the PJM Area Relevant State Entities Committee and Transmission Expansion Advisory Committee on such recommended Long-Term Regional Transmission Plan, including providing sufficiently detailed determinations for stakeholders to understand the recommendations.

(b) To develop such recommended plan, the Office of the Interconnection may optimize the All-in-One Plan consistent with (1) the outcome of the State Opt-out mechanism in section 1.13; and (2) any voluntary funding agreements to arrive at the more efficient or cost-effective set of solutions. Then, the Office of the Interconnection shall evaluate, considering the criteria in section 1.9, each Long-Term Transmission Project identified in the optimized All-in-One Plan to determine whether selection would be timely and appropriate for recommendation of any such Long-Term Transmission Projects for inclusion in the recommended Long-Term Regional Transmission Plan. In such evaluation, the Office of the Interconnection shall consider each Long-Term Transmission Project's development and implementation timeline, with particular consideration of whether such timeline must commence prior to the completion of the next Long-Term Regional Transmission Plan cycle. Any Long-Term Transmission Project supported by a voluntary funding agreement, either executed or unexecuted and that has been filed by the Office of the Interconnection with the Commission shall be selected if it is timely and appropriate for inclusion in the recommended Long-Term Regional Transmission Plan.

(c) The recommended Long-Term Regional Transmission Plan shall be based on (1) all Long-Term Transmission Projects in the All-in-One Plan selected in accordance with section 1.16(b); and (2) all Long-Term Transmission Projects supported by a voluntary funding agreement pursuant to section 1.14.

(d) The recommended Long-Term Regional Transmission Plan shall identify the Transmission Owner and/or Designated Entity to construct, own and, unless otherwise provided, finance each recommended Long-Term Transmission Project.

(e) The recommended Long-Term Regional Transmission Plan shall identify, for each recommended Long-Term Transmission Project, the cost allocations consistent with [Tariff, Schedule 12], including a quantification of how the estimated benefits are imputed to each Zone, as such benefits can be reasonably estimated.

1.17 Approval of the recommended Long-Term Regional Transmission Plan.

(a) Based on the studies and analyses performed by the Office of the Interconnection under this Operating Agreement, Schedule 6-C, the PJM Board shall approve the recommended Long-Term Regional Transmission Plan as part of the Regional Transmission Expansion Plan; provided, however, that such approval shall be conditional as to Long-Term Transmission Projects supported by voluntary funding agreements for which the FERC has not accepted a cost allocation methodology. In accordance with Operating Agreement, Schedule 6, sections 1.6 and 1.7, as part of approving the recommended Long-Term Regional Transmission Plan and incorporating it into the Regional Transmission Expansion Plan, the PJM Board shall approve the cost allocations for the selected Long-Term Transmission Projects consistent with Tariff, Schedule 12.

(b) The Office of the Interconnection shall publish the current, approved Long-Term Regional Transmission Plan on the PJM website. Within 60 days after each occasion when the PJM Board approves a Long-Term Regional Transmission Plan, or an addition to such a plan, that designates one or more Transmission Owner(s) or Designated Entity(ies) to construct a Long-Term Transmission Project (in whole or in part), the Office of the Interconnection shall file with FERC a report identifying the component of the Long-Term Transmission Project, its estimated cost, the entity or entities that will be responsible for constructing and owning or financing each component, and the cost responsibility assignments for each included Long-Term Transmission Project.

(c) Following PJM Board approval, the recommended Long-Term Regional Transmission Plan will be incorporated into the Regional Transmission Expansion Plan, and shall be documented, posted publicly, and provided to the Applicable Regional Entities consistent with Operating Agreement, Schedule 6, section 1.6(d).

1.18 Obligation to Build Selected Long-Term Transmission Projects.

(a) In accordance with Operating Agreement, Schedule 6, section 1.7, and subject to the requirements of applicable law, government regulations and approvals, including, without limitation, requirements to obtain any necessary state or local siting, construction and operating permits, to the availability of required financing, to the ability to acquire necessary right-of-way, and to the right to recover, pursuant to appropriate financial arrangements and tariffs or contracts, all reasonably incurred costs, plus a reasonable return on investment, Transmission Owners or Designated Entities designated as the appropriate entities to construct, own and/or finance Long-Term Transmission Project selected in the Long-Term Regional Transmission Plan and incorporated into the Regional Transmission Expansion Plan shall construct, own and/or finance such facilities or enter into appropriate contracts to fulfill such obligations. Nothing herein shall require any Transmission Owner to construct, finance or own any enhancements or expansions specified in the Long-Term Regional Transmission Plan for which the plan designates an entity other than a Transmission Owner as the appropriate entity to construct, own and/or finance such enhancements or expansions.

1.19 Interregional Expansions

[Reserved]

1.20 Relationship to the PJM Open Access Transmission Tariff.

Nothing herein shall modify the rights and obligations of an Eligible Customer or a Transmission Customer with respect to required studies and completion of necessary enhancements or expansions. An Eligible Customer or Transmission Customer electing to follow the procedures in the PJM Tariff instead of the procedures provided herein, shall also be responsible for the related costs. The enhancement and expansion study process under this Protocol shall be funded as a part of the operating budget of the Office of the Interconnection.

Attachment B

Revisions to the
PJM Operating Agreement

Proposed Definitions
and Schedule 6, section 1.5

(Marked/Redline Format)

Definitions A - B

30-minute Reserve:

"30-minute Reserve" shall mean the reserve capability of generation resources that can be converted fully into energy or Economic Load Response Participant resources whose demand can be reduced within 30 minutes of a request from the Office of the Interconnection dispatcher, and is comprised of Synchronized Reserve, Non-Synchronized Reserve and Secondary Reserve.

30-minute Reserve Requirement:

"30-minute Reserve Requirement" shall mean the megawatts required to be maintained in a Reserve Zone or Reserve Sub-zone, as Secondary Reserve, absent any increase to account for additional reserves scheduled to address operational uncertainty. The 30-minute Reserve Requirement is calculated in accordance with the PJM Manuals. The requirement can be satisfied by any combination of Synchronized Reserve, Non Synchronized Reserve or Secondary Reserve resources.

Acceleration Request:

"Acceleration Request" shall mean a request pursuant to Operating Agreement, Schedule 1, section 1.9.4A and the parallel provisions of Tariff, Attachment K-Appendix, to accelerate or reschedule a transmission outage scheduled pursuant to Operating Agreement, Schedule 1, section 1.9.2 or Operating Agreement, Schedule 1, section 1.9.4 and the parallel provisions of Tariff, Attachment K-Appendix, section 1.9.2 and Tariff, Attachment K-Appendix, section 1.9.4.

Act:

"Act" shall mean the Delaware Limited Liability Company Act, Title 6, §§ 18-101 to 18-1109 of the Delaware Code.

Active and Significant Business Interest:

"Active and Significant Business Interest" is a term that shall be used to assess the scope of a Member's PJM membership and shall be based on a Member's activity in the PJM RTO and/or Interchange Energy Markets. A Member's Active and Significant Business Interest shall: 1) be determined relative to the scope of the Member's PJM membership and activity in the PJM RTO and/or Interchange Energy Markets considering, among other things, the Member's public statements and/or regulatory filings regarding its PJM activities; and 2) reflect a substantial contributor to the Member's recent market activity, revenues, costs, investment, and/or earnings when considering the Member and its corporate affiliates' interests within the PJM footprint.

Additional LT Needs:

"Additional LT Needs" shall mean the Long-Term Transmission Needs identified by the Office of the Interconnection in accordance with Operating Agreement, Schedule 6-C, section 1.6.2(b).

Affected Member:

"Affected Member" shall mean a Member of PJM which as a result of its participation in PJM's markets or its membership in PJM provided confidential information to PJM, which confidential information is requested by, or is disclosed to an Authorized Person under a Non-Disclosure Agreement.

Affiliate:

"Affiliate" shall mean any two or more entities, one of which Controls the other or that are under common Control. "Control," as that term is used in this definition, shall mean the possession, directly or indirectly, of the power to direct the management or policies of an entity. Ownership of publicly-traded equity securities of another entity shall not result in Control or affiliation for purposes of the Tariff or Operating Agreement if the securities are held as an investment, the holder owns (in its name or via intermediaries) less than 10 percent (10%) of the outstanding securities of the entity, the holder does not have representation on the entity's board of directors (or equivalent managing entity) or vice versa, and the holder does not in fact exercise influence over day-to-day management decisions. Unless the contrary is demonstrated to the satisfaction of the Members Committee, Control shall be presumed to arise from the ownership of or the power to vote, directly or indirectly, ten percent or more of the voting securities of such entity.

Agreement, Operating Agreement of the PJM Interconnection, L.L.C., Operating Agreement or PJM Operating Agreement:

"Agreement," "Operating Agreement of the PJM Interconnection, L.L.C.," "Operating Agreement" or "PJM Operating Agreement" shall mean this Amended and Restated Operating Agreement of PJM Interconnection, L.L.C. dated as of April 1, 1997 and as amended and restated as of June 2, 1997, including all Schedules, Exhibits, Appendices, addenda or supplements thereto, as amended from time to time thereafter, among the Members of PJM Interconnection L.L.C., on file with the Commission.

All-in-One Plan:

"All-in-One Plan" shall mean a set of Long-Term Transmission Projects addressing Core LT Needs and Additional LT Needs holistically, as determined in accordance with Operating Agreement, Schedule 6-C, section 1.11.

All-in-One Plan Incremental Benefit-to-Cost-Ratio:

"All-in-One Plan Incremental Benefit-to-Cost-Ratio" shall mean the minimum criteria used to identify Long-Term Transmission Projects to address Additional LT Needs and be identified for inclusion in the All-in-One Plan determined in accordance with Operating Agreement, Schedule 6-C, section 1.11.

Annual Meeting of the Members:

“Annual Meeting of the Members” shall mean the meeting specified in Operating Agreement, section 8.3.1.

Applicable Regional Entity:

“Applicable Regional Entity” shall mean the Regional Entity for the region in which a Network Customer, Transmission Customer, New Service Customer, or Transmission Owner operates.

Applicable Standards:

“Applicable Standards” shall mean the requirements and guidelines of NERC, the Applicable Regional Entity, and the Control Area in which the Customer Facility is electrically located; the PJM Manuals; and Applicable Technical Requirements and Standards.

Associate Member:

“Associate Member” shall mean an entity that satifies the requirements of Operating Agreement, section 11.7.

Auction Revenue Rights:

“Auction Revenue Rights” or “ARRs” shall mean the right to receive the revenue from the Financial Transmission Right auction, as further described in Operating Agreement, Schedule 1, section 7.4 and the parallel provisions of Tariff, Attachment K-Appendix, section 7.4.

Auction Revenue Rights Credits:

“Auction Revenue Rights Credits” shall mean the allocated share of total FTR auction revenues or costs credited to each holder of Auction Revenue Rights, calculated and allocated as specified in Operating Agreement, Schedule 1, section 7.4.3, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.4.3.

Authorized Commission:

“Authorized Commission” shall mean (i) a State public utility commission that regulates the distribution or supply of electricity to retail customers and is legally charged with monitoring the operation of wholesale or retail markets serving retail suppliers or customers within its State or (ii) an association or organization comprised exclusively of State public utility commissions described in the immediately preceding clause (i).

Authorized Person:

“Authorized Person” shall have the meaning set forth in Operating Agreement, section 18.17.4.

Balancing Congestion Charges:

“Balancing Congestion Charges” shall be equal to the sum of congestion charges collected from Market Participants that are purchasing energy in the Real-time Energy Market minus [the sum of congestion charges paid to Market Participants that are selling energy in the Real-time Energy Market plus any congestion charges calculated pursuant to the Joint Operating Agreement between the Midcontinent Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C. (PJM Rate Schedule FERC No. 38), plus any congestion charges calculated pursuant to the Joint Operating Agreement Among and Between New York Independent System Operator Inc. and PJM Interconnection, L.L.C. (PJM Rate Schedule FERC No. 45), plus any congestion charges calculated pursuant to agreements between the Office of the Interconnection and other entities, plus any charges or credits calculated pursuant to Operating Agreement, Schedule 1, section 3.8, and the parallel provisions of Tariff, Attachment K-Appendix, section 3.8, as applicable)].

Batch Load Economic Load Response Participant Resource:

“Batch Load Economic Load Response Participant Resource” shall mean an Economic Load Response Participant Resource that has a cyclical production process such that at most times during the process it is consuming energy, but at consistent regular intervals, ordinarily for periods of less than ten minutes, it reduces its consumption of energy for its production processes to minimal or zero megawatts.

Behind The Meter Generation:

“Behind The Meter Generation” shall refer to a generating unit that delivers energy to load without using the Transmission System or any distribution facilities (unless the entity that owns or leases the distribution facilities has consented to such use of the distribution facilities and such consent has been demonstrated to the satisfaction of the Office of the Interconnection); provided, however, that Behind The Meter Generation does not include (i) at any time, any portion of such generating unit’s capacity that is designated as a Generation Capacity Resource, or (ii) in any hour, any portion of the output of such generating unit that is sold to another entity for consumption at another electrical location or into the PJM Interchange Energy Market.

Board Member:

“Board Member” shall mean a member of the PJM Board.

Definitions C - D

Candidate In-Kind Replacement Facility Needs List:

"Candidate In-Kind Replacement Facility Needs List" shall have the meaning set forth in Tariff, Attachment M-5.

Capacity Resource:

"Capacity Resource" shall have the meaning provided in the Reliability Assurance Agreement.

Capacity Storage Resource:

"Capacity Storage Resource" shall mean any Energy Storage Resource that participates in the Reliability Pricing Model or is otherwise treated as capacity in PJM's markets such as through a Fixed Resource Requirement Capacity Plan.

Catastrophic Force Majeure:

"Catastrophic Force Majeure" shall not include any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, or curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, unless as a consequence of any such action, event, or combination of events, either (i) all, or substantially all, of the Transmission System is unavailable, or (ii) all, or substantially all, of the interstate natural gas pipeline network, interstate rail, interstate highway or federal waterway transportation network serving the PJM Region is unavailable. The Office of the Interconnection shall determine whether an event of Catastrophic Force Majeure has occurred for purposes of this Agreement, the PJM Tariff, and the Reliability Assurance Agreement, based on an examination of available evidence. The Office of the Interconnection's determination is subject to review by the Commission.

Charge Economic Maximum Megawatts:

"Charge Economic Maximum Megawatts" shall mean the greatest magnitude of megawatt power consumption available for charging in economic dispatch by an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource in Continuous Mode or in Charge Mode. Charge Economic Maximum Megawatts shall be the Economic Minimum for an Energy Storage Resource or Open-Loop Hybrid Resource in Charge Mode or in Continuous Mode.

Charge Economic Minimum Megawatts:

"Charge Economic Minimum Megawatts" shall mean the smallest magnitude of megawatt power consumption available for charging in economic dispatch by an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource in Charge Mode. Charge Economic Minimum Megawatts shall be the Economic Maximum for an Energy Storage Resource or Open-Loop Hybrid Resource in Charge Mode.

Charge Mode:

"Charge Mode" shall mean the mode of operation of an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource that only includes negative megawatt quantities (i.e., the Energy Storage Resource Model Participant or Open-Loop Hybrid Resource is only withdrawing megawatts from the grid).

Charge Ramp Rate:

"Charge Ramp Rate" shall mean the Ramping Capability of an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource in Charge Mode.

Closed-Loop Hybrid Resource:

"Closed-Loop Hybrid Resource" shall mean a Hybrid Resource without a storage component, or that does not operate by charging its storage component from the grid.

Cold/Warm/Hot Notification Time:

"Cold/Warm/Hot Notification Time" shall mean the time interval between PJM notification and the beginning of the start sequence for a generating unit that is currently in its cold/warm/hot temperature state. The start sequence may include steps such as any valve operation, starting feed water pumps, startup of auxiliary equipment, etc.

Cold/Warm/Hot Start-up Time:

For all generating units that are not combined cycle units, "Cold/Warm/Hot Start-up Time" shall mean the time interval, measured in hours, from the beginning of the start sequence to the point after generator breaker closure, which is typically indicated by telemetered or aggregated State Estimator megawatts greater than zero for a generating unit in its cold/warm/hot temperature state. For combined cycle units, "Cold/Warm/Hot Start-up Time" shall mean the time interval from the beginning of the start sequence to the point after first combustion turbine generator breaker closure in its cold/warm/hot temperature state, which is typically indicated by telemetered or aggregated State Estimator megawatts greater than zero. For all generating units, the start sequence may include steps such as any valve operation, starting feed water pumps, startup of auxiliary equipment, etc. Other more detailed actions that could signal the beginning of the start sequence could include, but are not limited to, the operation of pumps, condensers, fans, water chemistry evaluations, checklists, valves, fuel systems, combustion turbines, starting engines or systems, maintaining stable fuel/air ratios, and other auxiliary equipment necessary for startup.

Cold Weather Alert:

"Cold Weather Alert" shall mean the notice that PJM provides to PJM Members, Transmission Owners, resource owners and operators, customers, and regulators to prepare personnel and facilities for expected extreme cold weather conditions.

Co-Located Resource:

"Co-Located Resource" shall mean a component of a Mixed Technology Facility that operates in the capacity, energy, and/or ancillary services market(s) as a separate resource from the other components of such facility.

Committed Offer:

The "Committed Offer shall mean 1) for pool-scheduled resources, an offer on which a resource was scheduled by the Office of the Interconnection for a particular clock hour for an Operating Day, and 2) for self-scheduled resources, either the offer on which the Market Seller has elected to schedule the resource or the applicable offer for the resource determined pursuant to Operating Agreement, Schedule 1, section 6.4, and the parallel provisions of Tariff, Attachment K-Appendix, section 6.4, or Operating Agreement, Schedule 1, section 6.6, and the parallel provisions of Tariff, Attachment K-Appendix, section 6.6, for a particular clock hour for an Operating Day.

Compliance Monitoring and Enforcement Program:

"Compliance Monitoring and Enforcement Program" shall mean the program to be used by the NERC and the Regional Entities to monitor, assess and enforce compliance with the NERC Reliability Standards. As part of a Compliance Monitoring and Enforcement Program, NERC and the Regional Entities may, among other things, conduct investigations, determine fault and assess monetary penalties.

Composite Energy Offer:

"Composite Energy Offer" for generation resources shall mean the sum (in $/MWh) of the Incremental Energy Offer and amortized Start-Up Costs and amortized No-load Costs, and for Economic Load Response Participant resources the sum (in $/MWh) of the Incremental Energy Offer and amortized shutdown costs, as determined in accordance with Operating Agreement, Schedule 1, section 2.4 and Operating Agreement, Schedule 1, section 2.4A and the PJM Manuals.

Condense Energy Use:

"Condense Energy Use" shall mean the power (MW) used by a condensing resource while operating in condensing mode. The value must be less than or equal to the actual power consumed.

Condense Startup Cost:

"Condense Startup Cost" shall mean the applicable costs for a resource to transition from offline state to operate in condensing mode. Condense Startup Cost shall consist primarily of the unit's start heat input (adjusted by the performance factor) times the fuel cost associated with the transition from offline state to operate in condensing mode. It also may include operating costs, Maintenance Adders, emissions allowances/adders, and station service cost associated with the transition from offline state to operate in condensing mode. Condense Startup Cost shall be capped at the applicable Start-Up Cost of the Cost-Based Offer.

Condense to Generate Cost:

"Condense to Generate Cost" shall mean the applicable costs for a resource to transition from operating in condensing mode to operating in generating mode. Condense to Generate Cost shall consist primarily of the unit's start heat input (adjusted by the performance factor) times the fuel cost associated with the transition from operating in condensing mode to operating in generating mode. It also may include operating costs, Maintenance Adders, emissions allowances/adders, and station service cost associated with the transition from operating in condensing mode to operating in generating mode. Condense to Generate Cost shall be capped at the applicable Start-Up Cost of the Cost-Based Offer.

Congestion Price:

"Congestion Price" shall mean the congestion component of the Locational Marginal Price, which is the effect on transmission congestion costs (whether positive or negative) associated with increasing the output of a generation resource or decreasing the consumption by a Demand Resource, based on the effect of increased generation from or consumption by the resource on transmission line loadings, calculated as specified in Operating Agreement, Schedule 1, section 2, and the parallel provisions of Tariff, Attachment K-Appendix, section 2.

Consolidated Transmission Owners Agreement, PJM Transmission Owners Agreement or Transmission Owners Agreement:

"Consolidated Transmission Owners Agreement," "PJM Transmission Owners Agreement" or Transmission Owners Agreement" shall mean that certain Consolidated Transmission Owners Agreement, dated as of December 15, 2005, by and among the Transmission Owners and by and between the Transmission Owners and PJM Interconnection, L.L.C. on file with the Commission, as amended from time to time.

Continuous Mode:

"Continuous Mode" shall mean the mode of operation of an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource that includes both negative and positive megawatt quantities (i.e., the Energy Storage Resource Model Participant or Open-Loop Hybrid Resource is capable of continually and immediately transitioning from withdrawing megawatt quantities from the grid to injecting megawatt quantities onto the grid or injecting megawatts to withdrawing megawatts). Energy Storage Resource Model Participants or Open-Loop Hybrid Resource operating in Continuous Mode are considered to have an unlimited ramp rate.

Continuous Mode requires Discharge Economic Maximum Megawatts to be zero or correspond to an injection, and Charge Economic Maximum Megawatts to be zero or correspond to a withdrawal.

Control Area:

"Control Area" shall mean an electric power system or combination of electric power systems bounded by interconnection metering and telemetry to which a common automatic generation control scheme is applied in order to:

(a) match the power output of the generators within the electric power system(s) and energy purchased from entities outside the electric power system(s), with the load within the electric power system(s);

(b) maintain scheduled interchange with other Control Areas, within the limits of Good Utility Practice;

(c) maintain the frequency of the electric power system(s) within reasonable limits in accordance with Good Utility Practice and the criteria of NERC and each Applicable Regional Entity;

(d) maintain power flows on transmission facilities within appropriate limits to preserve reliability; and

(e) provide sufficient generating capacity to maintain operating reserves in accordance with Good Utility Practice.

Control Zone:

"Control Zone" shall mean one Zone or multiple contiguous Zones, as designated in the PJM Manuals.

Coordinated External Transaction:

"Coordinated External Transaction" shall mean a transaction to simultaneously purchase and sell energy on either side of a CTS Enabled Interface in accordance with the procedures of Operating Agreement, Schedule 1, section 1.13 and the parallel provisions of Tariff, Attachment K-Appendix, section 1.13.

Coordinated Transaction Scheduling:

"Coordinated Transaction Scheduling" or "CTS" shall mean the scheduling of Coordinated External Transactions at a CTS Enabled Interface in accordance with the procedures of Operating Agreement, Schedule 1, section 1.13, and the parallel provisions of Tariff, Attachment K-Appendix, section 1.13.

Core LT Needs:

"Core LT Needs" shall mean Long-Term Transmission Needs identified by the Office of the Interconnection in accordance with Operating Agreement, Schedule 6-C, section 1.6.2(a).

Core Plan:

"Core Plan" shall mean a set of Long-Term Transmission Projects addressing Core LT Needs that, as a portfolio, meets the Core Plan Benefit-to-Cost Ratio, as set forth in Operating Agreement, Schedule 6-C, section 1.10(a)(1).

Core Plan Benefit-to-Cost-Ratio:

"Core Plan Benefit-to-Cost-Ratio" shall mean the minimum criteria used to identify Long-Term Transmission Projects for inclusion in the Core Plan, determined in accordance with Operating Agreement, Schedule 6-C, section 1.10.

Counterparty:

"Counterparty" shall mean PJMSettlement as the contracting party, in its name and own right and not as an agent, to an agreement or transaction with a Market Participant or other entities, including the agreements and transactions with customers regarding transmission service and other transactions under the PJM Tariff and this Operating Agreement. PJMSettlement shall not be a counterparty to (i) any bilateral transactions between Members, or (ii) any Member's self-supply of energy to serve its load, or (iii) any Member's self-schedule of energy reported to the extent that energy serves that Member's own load.

Credit Breach:

"Credit Breach" shall mean (a) the failure of a Participant to perform, observe, meet or comply with any requirements of Tariff, Attachment Q or other provisions of the Agreements, other than a Financial Default, or (b) a determination by PJM and notice to the Participant that a Participant represents an unreasonable credit risk to the PJM Markets; that, in either event, has not been cured or remedied after any required notice has been given and any cure period has elapsed.

CTS Enabled Interface:

"CTS Enabled Interface" shall mean an interface between the PJM Control Area and an adjacent Control Area at which the Office of the Interconnection has authorized the use of Coordinated Transaction Scheduling ("CTS"). The CTS Enabled Interfaces between the PJM Control Area and the New York Independent System Operator, Inc. Control Area shall be designated in Joint Operating Agreement Among and Between New York Independent System Operator Inc. and PJM Interconnection, L.L.C. (PJM Rate Schedule FERC No. 45) Schedule A. The CTS Enabled Interfaces between the PJM Control Area and the Midcontinent Independent System Operator, Inc. shall be designated consistent with Joint Operating Agreement between Midcontinent Independent System Operator, Inc. and PJM Interconnection, L.L.C, Attachment 3, section 2.

CTS Interface Bid:

"CTS Interface Bid" shall mean a unified real-time bid to simultaneously purchase and sell energy on either side of a CTS Enabled Interface in accordance with the procedures of Operating Agreement, Schedule 1, section 1.13, and the parallel provisions of Tariff, Attachment K-Appendix, section 1.13.

Curtailment Service Provider:

"Curtailment Service Provider" or "CSP" shall mean a Member or a Special Member, which action on behalf of itself or one or more other Members or non-Members, participates in the PJM Interchange Energy Market, Ancillary Services markets, and/or Reliability Pricing Model by causing a reduction in demand.

Day-ahead Congestion Price:

"Day-ahead Congestion Price" shall mean the Congestion Price resulting from the Day-ahead Energy Market.

Day-ahead Energy Market:

"Day-ahead Energy Market" shall mean the schedule of commitments for the purchase or sale of energy and payment of Transmission Congestion Charges developed by the Office of the Interconnection as a result of the offers and specifications submitted in accordance with Operating Agreement, Schedule 1, section 1.10, and the parallel provisions of Tariff, Attachment K-Appendix, section 1.10.

Day-ahead Energy Market Injection Congestion Credits:

"Day-ahead Energy Market Injection Congestion Credits" shall mean those congestion credits paid to Market Participants for supply transactions in the Day-ahead Energy Market including generation schedules, Increment Offers, Up-to Congestion Transactions, import transactions, and Day-ahead Pseudo-Tie Transactions.

Day-ahead Energy Market Transmission Congestion Charges:

"Day-ahead Energy Market Transmission Congestion Charges" shall be equal to the sum of Day-ahead Energy Market Withdrawal Congestion Charges minus [the sum of Day-ahead Energy Market Injection Congestion Credits plus any congestion charges calculated pursuant to the Joint Operating Agreement between the Midcontinent Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C. (PJM Rate Schedule FERC No. 38), plus any congestion charges calculated pursuant to the Joint Operating Agreement Among and Between New York Independent System Operator Inc. and PJM Interconnection, L.L.C. (PJM Rate Schedule FERC No. 45), plus any congestion charges calculated pursuant to agreements between the Office of the Interconnection and other entities, as applicable)].

Day-ahead Energy Market Withdrawal Congestion Charges:

"Day-ahead Energy Market Withdrawal Congestion Charges" shall mean those congestion charges collected from Market Participants for withdrawal transactions in the Day-ahead Energy Market from transactions including Demand Bids, Decrement Bids, Up-to Congestion Transactions, Export Transactions, and Day-ahead Pseudo-Tie Transactions.

Day-ahead Loss Price:

"Day-ahead Loss Price" shall mean the Loss Price resulting from the Day-ahead Energy Market.

Day-ahead Prices:

"Day-ahead Prices" shall mean the Locational Marginal Prices resulting from the Day-ahead Energy Market.

Day-Ahead Pseudo-Tie Transaction:

"Day-Ahead Pseudo-Tie Transaction" shall mean a transaction scheduled in the Day-ahead Energy Market to the PJM-MISO interface from a generator within the PJM balancing authority area that Pseudo-Ties into the MISO balancing authority area.

Day-ahead Settlement Interval:

"Day-ahead Settlement Interval" shall mean the interval used by settlements, which shall be every one clock hour.

Day-ahead System Energy Price:

"Day-ahead System Energy Price" shall mean the System Energy Price resulting from the Day-ahead Energy Market.

Decrement Bid:

"Decrement Bid" shall mean a type of Virtual Transaction that is a bid to purchase energy at a specified location in the Day-ahead Energy Market. A cleared Decrement Bid results in scheduled load at the specified location in the Day-ahead Energy Market.

Default Allocation Assessment:

"Default Allocation Assessment" shall mean the assessment determined pursuant to Operating Agreement, section 15.2.2.

Demand Bid:

"Demand Bid" shall mean a bid, submitted by a Load Serving Entity in the Day-ahead Energy Market, to purchase energy at its contracted load location, for a specified timeframe and megawatt quantity, that if cleared will result in energy being scheduled at the specified location in the Day-ahead Energy Market and in the physical transfer of energy during the relevant Operating Day.

Demand Bid Limit:

"Demand Bid Limit" shall mean the largest MW volume of Demand Bids that may be submitted by a Load Serving Entity for any hour of an Operating Day, as determined pursuant to Operating Agreement, Schedule 1, section 1.10.1B, and the parallel provisions of Tariff, Attachment K-Appendix, section 1.10.1B.

Demand Bid Screening:

"Demand Bid Screening" shall mean the process by which Demand Bids are reviewed against the applicable Demand Bid Limit, and rejected if they would exceed that limit, as determined pursuant to Operating Agreement, Schedule 1, section 1.10.1B, and the parallel provisions of Tariff, Attachment K-Appendix, section 1.10.1B.

Demand Resource:

"Demand Resource" shall have the meaning provided in the Reliability Assurance Agreement.

Designated Entity:

"Designated Entity" shall mean an entity, including an existing Transmission Owner or Nonincumbent Developer, designated by the Office of the Interconnection with the responsibility to construct, own, operate, maintain, and finance Immediate-need Reliability Projects, Short-term Projects, Long-lead Projects, or Economic-based Enhancements or Expansions pursuant to Operating Agreement, Schedule 6, section 1.5.8.

Direct Charging Energy:

"Direct Charging Energy" shall mean the energy that an Energy Storage Resource or Open-Loop Hybrid Resource purchases from the PJM Interchange Energy Market and (i) later resells to the PJM Interchange Energy Market; or (ii) is lost to conversion inefficiencies, provided that such inefficiencies are an unavoidable component of the conversion, storage, and discharge process that is used to resell energy back to the PJM Interchange Energy Market.

Direct Load Control:

"Direct Load Control" shall mean load reduction that is controlled directly by the Curtailment Service Provider's market operations center or its agent, in response to PJM instructions.

Discharge Economic Maximum Megawatts:

"Discharge Economic Maximum Megawatts" shall mean the maximum megawatt power output available for discharge in economic dispatch by an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource in Continuous Mode or in Discharge Mode. Discharge Economic Maximum Megawatts shall be the Economic Maximum for an Energy Storage Resource or Open-Loop Hybrid Resource in Discharge Mode or in Continuous Mode.

Discharge Economic Minimum Megawatts:

"Discharge Economic Minimum Megawatts" shall mean the minimum megawatt power output available for discharge in economic dispatch by an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource in Discharge Mode. Discharge Economic Minimum Megawatts shall be the Economic Minimum for an Energy Storage Resource or Open-Loop Hybrid Resource in Discharge Mode.

Discharge Mode:

"Discharge Mode" shall mean the mode of operation of an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource that only includes positive megawatt quantities (i.e., the Energy Storage Resource Model Participant or Open-Loop Hybrid Resource is only injecting megawatts onto the grid).

Discharge Ramp Rate:

"Discharge Ramp Rate" shall mean the Ramping Capability of an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource in Discharge Mode.

Dispatch Rate:

"Dispatch Rate" shall mean the control signal, expressed in dollars per megawatt-hour, calculated and transmitted continuously and dynamically to direct the output level of all generation resources dispatched by the Office of the Interconnection in accordance with the Offer Data.

Dispatched Charging Energy:

"Dispatched Charging Energy" shall mean Direct Charging Energy that an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource receives from the electric grid pursuant to PJM dispatch while providing one of the following services in the PJM markets: Energy Imbalance Service pursuant to Tariff, Schedule 4; Regulation; Tier 2 Synchronized Reserves; or Reactive Service. Energy Storage Resource Model Participants and Open-Loop Hybrid Resource shall be considered to be providing Energy Imbalance Service when they are dispatchable by PJM in real-time.

Dynamic Schedule:

“Dynamic Schedule” shall have the same meaning set forth in the NERC Glossary of Terms Used in NERC Reliability Standards.

Dynamic Transfer:

“Dynamic Transfer” shall mean a Pseudo-Tie or Dynamic Schedule.

Definitions I - L

Immediate-need Reliability Project:

"Immediate-need Reliability Project" shall mean a reliability-based transmission enhancement or expansion that the Office of the Interconnection has identified to resolve a need that must be addressed within three years or less from the year the Office of the Interconnection identified the existing or projected limitations on the Transmission System that gave rise to the need for such enhancement or expansion pursuant to the study process described in Operating Agreement, Schedule 6, section 1.5.3.

Inadvertent Interchange:

"Inadvertent Interchange" shall mean the difference between net actual energy flow and net scheduled energy flow into or out of the individual Control Areas operated by PJM.

Increment Offer:

"Increment Offer" shall mean a type of Virtual Transaction that is an offer to sell energy at a specified location in the Day-ahead Energy Market. A cleared Increment Offer results in scheduled generation at the specified location in the Day-ahead Energy Market.

Incremental Energy Offer:

"Incremental Energy Offer" shall mean the cost in dollars per MWh of providing an additional MWh from a synchronized unit. It consists primarily of the cost of fuel, as determined by the unit's incremental heat rate (adjusted by the performance factor) times the fuel cost. It also includes operating costs, Maintenance Adders, emissions allowances, tax credits, and energy market opportunity costs.

Incremental Multi-Driver Project:

"Incremental Multi-Driver Project" shall mean a Multi-Driver Project that is planned as described in Operating Agreement, Schedule 6, section 1.5.10(h).

Information Request:

"Information Request" shall mean a written request, in accordance with the terms of the Operating Agreement for disclosure of confidential information pursuant to Operating Agreement, section 18.17.4.

In-Kind Replacement Facility Need:

"In-Kind Replacement Facility Need" shall have the meaning set forth in Tariff, Attachment M-5.

Integer Relaxation:

"Integer Relaxation" shall mean the process by which the commitment status variable for an Eligible Fast-Start Resource is allowed to vary between zero and one, inclusive of zero and one, as further described in Operating Agreement, Schedule 1, section 2.2.

Interface Pricing Point:

"Interface Pricing Point" shall have the meaning specified in Operating Agreement, Schedule 1, section 2.6A, and the parallel provisions of Tariff, Attachment K-Appendix, section 2.6A.

Internal Market Buyer:

"Internal Market Buyer" shall mean a Market Buyer making purchases of energy from the PJM Interchange Energy Market for ultimate consumption by end-users inside the PJM Region that are served by Network Transmission Service

Interregional Transmission Project:

"Interregional Transmission Project" shall mean transmission facilities that would be located within two or more neighboring transmission planning regions and are determined by each of those regions to be a more efficient or cost effective solution to regional transmission needs.

LLC:

"LLC" shall mean PJM Interconnection, L.L.C., a Delaware limited liability company.

Load Management:

"Load Management" shall mean a Demand Resource ("DR") as defined in the Reliability Assurance Agreement.

Load Management Event:

"Load Management Event" shall mean a) a single temporally contiguous dispatch of Demand Resources in a Compliance Aggregation Area during an Operating Day, or b) multiple dispatches of Demand Resources in a Compliance Aggregation Area during an Operating Day that are temporally contiguous.

Load Reduction Event:

"Load Reduction Event" shall mean a reduction in demand by a Member or Special Member for the purpose of participating in the PJM Interchange Energy Market.

Load Serving Charging Energy:

“Load Serving Charging Energy” shall mean energy that is purchased from the PJM Interchange Energy Market and stored in an Energy Storage Resource or Open-Loop Hybrid Resource for later resale to end-use load.

Load Serving Entity:

“Load Serving Entity” or “LSE” shall mean any entity (or the duly designated agent of such an entity), including a load aggregator or power marketer, (i) serving end-users within the PJM Region, and (ii) that has been granted the authority or has an obligation pursuant to state or local law, regulation or franchise to sell electric energy to end-users located within the PJM Region. Load Serving Entity shall include any end-use customer that qualifies under state rules or a utility retail tariff to manage directly its own supply of electric power and energy and use of transmission and ancillary services.

Local Plan:

“Local Plan” shall include Supplemental Projects as identified by the Transmission Owners within their zone and Subregional RTEP projects developed to comply with all applicable reliability criteria, including Transmission Owners’ planning criteria or based on market efficiency analysis and in consideration of Public Policy Requirements.

Location:

“Location” as used in the Economic Load Response rules shall mean an end-use customer site as defined by the relevant electric distribution company account number.

Locational Marginal Price:

“Locational Marginal Price” or “LMP” shall mean the market clearing marginal price for energy at the location the energy is delivered or received, calculated as specified in Operating Agreement, Schedule 1, section 2, and the parallel provisions of Tariff, Attachment K-Appendix, section 2.

LOC Deviation:

“LOC Deviation,” shall mean, for units other than wind or solar units, Hybrid Resources, or Energy Storage Resource Model Participants, the LOC Deviation shall equal the desired megawatt amount for the resource determined according to the point on the Final Offer curve corresponding to the Real-time Settlement Interval real-time Locational Marginal Price at the resource’s bus and adjusted for any reduction in megawatts due to Regulation, Synchronized Reserve, or Secondary Reserve assignments and limited to the lesser of the unit’s Economic Maximum or the unit’s Generation Resource Maximum Output, minus the actual output of the unit. For wind or solar units, Hybrid Resources, or Energy Storage Resource Model Participants, the LOC Deviation shall mean the deviation of the generating unit’s output equal to the lesser of the PJM forecasted output, inclusive of state of charge, for the unit or the desired megawatt amount for the resource determined according to the point on the Final Offer curve corresponding to the Real-time Settlement Interval real-time Locational Marginal Price at the resource's bus and adjusted for any reduction in megawatts due to Regulation, Synchronized Reserve, or Secondary Reserve assignments, and shall be limited to the lesser of the unit's Economic Maximum or the unit's Generation Resource Maximum Output, minus the actual output of the unit, where the actual output of the unit is floored at 0.

Long-lead Project:

"Long-lead Project" shall mean a transmission enhancement or expansion with an in-service date more than five years from the year in which, pursuant to Operating Agreement, Schedule 6, section 1.5.8(c), the Office of the Interconnection posts the violations, system conditions, or Public Policy Requirements to be addressed by the enhancement or expansion.

Long-Term Regional Transmission Plan:

"Long-Term Regional Transmission Plan" shall mean a regional transmission plan developed on a sufficiently long-term, forward-looking, and comprehensive basis that identifies Long-Term Transmission Needs, identifies Long-Term Transmission Projects that meet such needs, measures the benefits of those Transmission Facilities, and evaluates those Transmission Facilities for potential selection in the regional transmission plan for purposes of cost allocation as the more efficient or cost-effective regional Transmission Facilities to meet Long-Term Transmission Needs with consideration of benefits to consumers relative to costs without over-building.

Long-Term Scenario:

"Long-Term Scenario" shall mean a scenario developed in accordance with Operating Agreement, Schedule 6-C, section 1.5, that incorporates various assumptions using best available data inputs about the future electric power system over a sufficiently long-term, forward-looking transmission planning horizon to identify Long-Term Transmission Needs and enable the identification and evaluation of Transmission Facilities to meet such Long-Term Transmission Needs.

Long-Term Transmission Need:

"Long-Term Transmission Need" shall mean transmission needs identified by the Office of the Interconnection pursuant to Operating Agreement, Schedule 6-C, resolution of which may require a Long-Term Transmission Project.

Long-Term Transmission Project:

"Long-Term Transmission Project" shall mean one or more enhancement(s) or expansion(s) of the Transmission System identified through the Long-Term Regional Transmission Plan process that, on an aggregate basis of all components, addresses a Long-Term Transmission Need or common set of Long-Term Transmission Needs.

Loss Price:

"Loss Price" shall mean the loss component of the Locational Marginal Price, which is the effect on transmission loss costs (whether positive or negative) associated with increasing the output of a generation resource or decreasing the consumption by a Demand Resource based on the effect of increased generation from or consumption by the resource on transmission losses, calculated as specified in Operating Agreement, Schedule 1, section 2, and the parallel provisions of Tariff, Attachment K-Appendix, section 2.

Definitions O - P

Offer Data:

"Offer Data" shall mean the scheduling, operations planning, dispatch, new resource, and other data and information necessary to schedule and dispatch generation resources and Demand Resource(s) for the provision of energy and other services and the maintenance of the reliability and security of the Transmission System in the PJM Region, and specified for submission to the PJM Interchange Energy Market for such purposes by the Office of the Interconnection.

Office of the Interconnection:

"Office of the Interconnection" shall mean the employees and agents of PJM Interconnection, L.L.C. subject to the supervision and oversight of the PJM Board, acting pursuant to the Operating Agreement.

Office of the Interconnection Control Center:

"Office of the Interconnection Control Center" shall mean the equipment, facilities and personnel used by the Office of the Interconnection to coordinate and direct the operation of the PJM Region and to administer the PJM Interchange Energy Market, including facilities and equipment used to communicate and coordinate with the Market Participants in connection with transactions in the PJM Interchange Energy Market or the operation of the PJM Region.

On-Site Generators:

"On-Site Generators" shall mean generation facilities or portions of a generation facility (including Behind The Meter Generation) that (i) are not Generation Capacity Resources, (ii) are not injecting into the grid for the portion of a generation facility that participates as an Economic Load Response Participant or as a Demand Resource, (iii) are either synchronized or non-synchronized to the Transmission System, and (iv) can be used to reduce demand for the purpose of participating in the PJM Interchange Energy Market.

Open Access Same-Time Information System (OASIS) or PJM Open Access Same-time Information System:

"Open Access Same-Time Information System," "PJM Open Access Same-time Information System" or "OASIS" shall mean the electronic communication system and information system and standards of conduct contained in Part 37 and Part 38 of the Commission's regulations and all additional requirements implemented by subsequent Commission orders dealing with OASIS for the collection and dissemination of information about transmission services in the PJM Region, established and operated by the Office of the Interconnection in accordance with FERC standards and requirements.

Open-Loop Hybrid Resource:

"Open-Loop Hybrid Resource" shall mean a Hybrid Resource with a storage component that operates by charging its storage component from the grid.

Operating Day:

"Operating Day" shall mean the daily 24 hour period beginning at midnight for which transactions on the PJM Interchange Energy Market are scheduled.

Operating Margin:

"Operating Margin" shall mean the incremental adjustments, measured in megawatts, required in PJM Region operations in order to accommodate, on a first contingency basis, an operating contingency in the PJM Region resulting from operations in an interconnected Control Area. Such adjustments may result in constraints causing Transmission Congestion Charges, or may result in Ancillary Services charges pursuant to the PJM Tariff.

Operating Margin Customer:

"Operating Margin Customer" shall mean a Control Area purchasing Operating Margin pursuant to an agreement between such other Control Area and the LLC.

Operating Reserve:

"Operating Reserve" shall mean the amount of generating capacity scheduled to be available for a specified period of an Operating Day to ensure the reliable operation of the PJM Region, as specified in the PJM Manuals.

Operating Reserve Demand Curve:

"Operating Reserve Demand Curve" shall mean a curve with prices on the y-axis and megawatts on the x-axis, which defines the relationship between each incremental megawatt of reserves that can be used to meet a given reserve requirement.

Operator-initiated Commitment:

"Operator-initiated Commitment" shall mean a commitment after the Day-ahead Energy Market and Day-ahead Scheduling Reserves Market, whether manual or automated, for a reason other than minimizing the total production costs of serving load.

Original PJM Agreement:

"Original PJM Agreement" shall mean that certain agreement between certain of the Members, originally dated September 26, 1956, and as amended and supplemented up to and including December 31, 1996, relating to the coordinated operation of their electric supply systems and the interchange of electric capacity and energy among their systems.

Other Supplier:

"Other Supplier" shall mean a Member that: (i) is engaged in buying, selling or transmitting electric energy, capacity, ancillary services, financial transmission rights or other services available under PJM's governing documents in or through the Interconnection or has a good faith intent to do so, and; (ii) does not qualify for the Generation Owner, Electric Distributor, Transmission Owner or End-Use Customer sectors.

PJM Area Relevant State Entities Committee:

"PJM Area Relevant State Entities Committee" shall mean the voluntary, independent committee consisting of any State entity responsible for electric utility regulation or siting electric transmission facilities within the State or portion of a State located in the PJM Region, including any State entity as may be designated for that purpose by the law of such State. The term PJM Area Relevant State Entities Committee shall mean the committee established through the Organization of PJM States, Inc. in 2024 or any succeeding committee.

PJM Board:

"PJM Board" shall mean the Board of Managers of the LLC, acting pursuant to the Operating Agreement, except when such term is being used in Tariff, Attachment M, in which case PJM Board shall mean the Board of Managers of PJM or its designated representative, exclusive of any members of PJM Management.

PJM Control Area:

"PJM Control Area" shall mean the Control Area recognized by NERC as the PJM Control Area.

PJM Dispute Resolution Procedures:

"PJM Dispute Resolution Procedures" shall mean the procedures for the resolution of disputes set forth in Operating Agreement, Schedule 5.

PJM Governing Agreements:

"PJM Governing Agreements" shall mean the PJM Open Access Transmission Tariff, the Operating Agreement, the Consolidated Transmission Owners Agreement, the Reliability Assurance Agreement, or any other applicable agreement approved by the FERC and intended to govern the relationship by and among PJM and any of its Members.

PJM Interchange:

"PJM Interchange" shall mean the following, as determined in accordance with the Operating Agreement and Tariff: (a) for a Market Participant that is a Network Service User, the amount by which its interval Equivalent Load exceeds, or is exceeded by, the sum of the interval outputs of its operating generating resources; or (b) for a Market Participant that is not a Network Service User, the amount of its Spot Market Backup; or (c) the interval scheduled deliveries of Spot Market Energy by a Market Seller from an External Resource; or (d) the interval net metered output of any other Market Seller; or (e) the interval scheduled deliveries of Spot Market Energy to an External Market Buyer; or (f) the interval scheduled deliveries to an Internal Market Buyer that is not a Network Service User.

PJM Interchange Energy Market:

"PJM Interchange Energy Market" shall mean the regional competitive market administered by the Office of the Interconnection for the purchase and sale of spot electric energy at wholesale in interstate commerce and related services established pursuant to Operating Agreement, Schedule 1, and the parallel provisions of Tariff, Attachment K-Appendix.

PJM Interchange Export:

"PJM Interchange Export" shall mean the following, as determined in accordance with the Operating Agreement and Tariff: (a) for a Market Participant that is a Network Service User, the amount by which its interval Equivalent Load is exceeded by the sum of the interval outputs of its operating generating resources; or (b) for a Market Participant that is not a Network Service User, the amount of its Spot Market Backup sales; or (c) the interval scheduled deliveries of Spot Market Energy by a Market Seller from an External Resource; or (d) the interval net metered output of any other Market Seller.

PJM Interchange Import:

"PJM Interchange Import" shall mean the following, as determined in accordance with the Operating Agreement and Tariff: (a) for a Market Participant that is a Network Service User, the amount by which its interval Equivalent Load exceeds the sum of the interval outputs of its operating generating resources; or (b) for a Market Participant that is not a Network Service User, the amount of its Spot Market Backup purchases; or (c) the interval scheduled deliveries of Spot Market Energy to an External Market Buyer; or (d) the interval scheduled deliveries to an Internal Market Buyer that is not a Network Service User.

PJM Manuals:

"PJM Manuals" shall mean the instructions, rules, procedures and guidelines established by the Office of the Interconnection for the operation, planning, and accounting requirements of the PJM Region and the PJM Interchange Energy Market.

PJM Mid-Atlantic Region:

"PJM Mid-Atlantic Region" shall mean the aggregate of the Transmission Facilities of Atlantic City Electric Company, Baltimore Gas and Electric Company, Delmarva Power and Light Company, Jersey Central Power and Light Company, Mid-Atlantic Interstate Transmission, LLC, PECO Energy Company, PPL Electric Utilities Corporation, Potomac Electric Power Company, Public Service Electric and Gas Company, and Rockland Electric Company.

PJM Region:

“PJM Region” shall mean the aggregate of the Zones within PJM as set forth in Tariff, Attachment J.

PJMSettlement:

“PJMSettlement” or “PJM Settlement, Inc.” shall mean PJM Settlement, Inc. (or its successor), established by PJM as set forth in Operating Agreement, section 3.3.

PJM South Region:

“PJM South Region” shall mean the Transmission Facilities of Virginia Electric and Power Company.

PJM Tariff, Tariff, O.A.T.T., OATT or PJM Open Access Transmission Tariff:

“PJM Tariff,” “Tariff,” “O.A.T.T.,” or “PJM Open Access Transmission Tariff” shall mean that certain “PJM Open Access Transmission Tariff”, including any schedules, appendices, or exhibits attached thereto, on file with FERC and as amended from time to time thereafter.

PJM West Region:

“PJM West Region” shall mean the Zones of Allegheny Power; Commonwealth Edison Company (including Commonwealth Edison Co. of Indiana); AEP East Affiliate Companies; The Dayton Power and Light Company; the Duquesne Light Company; American Transmission Systems, Incorporated; Duke Energy Ohio, Inc., Duke Energy Kentucky, Inc. and East Kentucky Power Cooperative, Inc.

Planning Period:

“Planning Period” shall have the meaning specified in the Reliability Assurance Agreement.

Planning Period Balance:

“Planning Period Balance” shall mean the entire period of time remaining in the Planning Period following the month that a monthly auction is conducted.

Planning Period Quarter:

“Planning Period Quarter” shall mean any of the following three month periods in the Planning Period: June, July and August; September, October and November; December, January and February; or March, April and May.

Point-to-Point Transmission Service:

"Point-to-Point Transmission Service" shall mean the reservation and transmission of capacity and energy on either a firm or non-firm basis from the Point(s) of Delivery under Tariff, Part II.

PRD Curve:

"PRD Curve" shall have the meaning provided in the Reliability Assurance Agreement.

PRD Provider:

"PRD Provider" shall have the meaning provided in the Reliability Assurance Agreement.

PRD Reservation Price:

"PRD Reservation Price" shall have the meaning provided in the Reliability Assurance Agreement.

PRD Substation:

"PRD Substation" shall have the meaning provided in the Reliability Assurance Agreement.

Pre-Emergency Load Response Program:

"Pre-Emergency Load Response Program" shall be the program by which Curtailment Service Providers may be compensated by PJM for Demand Resources that will reduce load when dispatched by PJM during pre-emergency conditions, and is described in Operating Agreement, Schedule 1, section 8 and the parallel provisions of Tariff, Attachment K-appendix, section 8.

President:

"President" shall have the meaning specified in Operating Agreement, section 9.2.

Price Responsive Demand:

"Price Responsive Demand" shall have the meaning provided in the Reliability Assurance Agreement.

Primary Reserve:

"Primary Reserve" shall mean the total reserve capability of generation resources that can be converted fully into energy or Economic Load Response Participant resources whose demand can be reduced within ten minutes of a request from the Office of the Interconnection dispatcher, and is comprised of both Synchronized Reserve and Non-Synchronized Reserve.

Primary Reserve Alert:

"Primary Reserve Alert" shall mean a notification from PJM to alert Members of an anticipated shortage of Operating Reserve capacity for a future critical period.

Primary Reserve Requirement:

"Primary Reserve Requirement" shall mean the megawatts required to be maintained in a Reserve Zone or Reserve Sub-zone as Primary Reserve absent any increase to account for additional reserves scheduled to address operational uncertainty. The Primary Reserve Requirement is calculated in accordance with the PJM Manuals. The requirement can be satisfied by any combination of Synchronized Reserve or Non-Synchronized Reserve resources.

Prohibited Securities:

"Prohibited Securities" shall mean the Securities of a Member, Eligible Customer, or Nonincumbent Developer, or their Affiliates, if:

(1) the primary business purpose of the Member or Eligible Customer, or their Affiliates, is to buy, sell or schedule energy, power, capacity, ancillary services or transmission services as indicated by an industry code within the "Electric Power Generation, Transmission, and Distribution" industry group under the North American Industry Classification System ("NAICS") or otherwise determined by the Office of the Interconnection;

(2) the Nonincumbent Developer has been pre-qualified as eligible to be a Designated Entity pursuant to Operating Agreement, Schedule 6;

(3) the total (gross) financial settlements regarding the use of transmission capacity of the Transmission System and/or transactions in the centralized markets that the Office of the Interconnection administers under the Tariff and the Operating Agreement for all Members or Eligible Customers affiliated with the publicly traded company during its most recently completed fiscal year is equal to or greater than 0.5% of its gross revenues for the same time period; or

(4) the total (gross) financial settlements regarding the use of transmission capacity of the Transmission System and/or transactions in the centralized markets that the Office of the Interconnection administers under the Tariff and the Operating Agreement for all Members or Eligible Customers affiliated with the publicly traded company during the prior calendar year is equal to or greater than 3% of the total transactions for which PJMSettlement is a Counterparty pursuant to Operating Agreement, section 3.3 for the same time period.

The Office of the Interconnection shall compile and maintain a list of the Prohibited Securities publicly traded and post this list for all employees and distribute the list to the Board Members.

Proportional Multi-Driver Project:

"Proportional Multi-Driver Project" shall mean a Multi-Driver Project that is planned as described in Operating Agreement, Schedule 6, section 1.5.10(h).

Pseudo-Tie:

"Pseudo-Tie shall have the same meaning set forth in the NERC Glossary of Terms Used in NERC Reliability Standards.

Public Policy Objectives:

"Public Policy Objectives" shall refer to Public Policy Requirements, as well as public policy initiatives of state or federal entities that have not been codified into law or regulation but which nonetheless may have important impacts on long term planning considerations.

Public Policy Requirements:

"Public Policy Requirements" shall refer to policies pursued by: (a) state or federal entities, where such policies are reflected in duly enacted statutes or regulations, including but not limited to, state renewable portfolio standards and requirements under Environmental Protection Agency regulations; and (b) local governmental entities such as a municipal or county government, where such policies are reflected in duly enacted laws or regulations passed by the local governmental entity.

Definitions Q - R

Ramping Capability:

"Ramping Capability" shall mean the sustained rate of change of generator output, in megawatts per minute.

Real-time Congestion Price:

"Real-time Congestion Price" shall mean the Congestion Price resulting from the Office of the Interconnection's dispatch of the PJM Interchange Energy Market in the Operating Day.

Real-time Loss Price:

"Real-time Loss Price" shall mean the Loss Price resulting from the Office of the Interconnection's dispatch of the PJM Interchange Energy Market in the Operating Day.

Real-time Offer:

"Real-time Offer" shall mean a new offer or an update to a Market Seller's existing cost-based or market-based offer for a clock hour, submitted for use after the close of the Day-ahead Energy Market.

Real-time Prices:

"Real-time Prices" shall mean the Locational Marginal Prices resulting from the Office of the Interconnection's dispatch of the PJM Interchange Energy Market in the Operating Day.

Real-time Energy Market:

"Real-time Energy Market" shall mean the purchase or sale of energy and payment of Transmission Congestion Charges for quantity deviations from the Day-ahead Energy Market in the Operating Day.

Real-time Settlement Interval:

"Real-time Settlement Interval" shall mean the interval used by settlements, which shall be every five minutes.

Real-time System Energy Price:

"Real-time System Energy Price" shall mean the System Energy Price resulting from the Office of the Interconnection's dispatch of the PJM Interchange Energy Market in the Operating Day.

Regional Entity:

"Regional Entity" shall mean an organization that NERC has delegated the authority to propose and enforce reliability standards pursuant to the Federal Power Act.

Regional RTEP Project:

"Regional RTEP Project" shall mean a transmission expansion or enhancement rated at 230 kV or above which is required for compliance with the following PJM criteria: system reliability, operational performance or economic criteria, pursuant to a determination by the Office of the Interconnection.

Registered Entity:

"Registered Entity" shall mean the entity registered under the NERC Functional Model and NERC Rules of Procedures for the purpose of compliance with NERC Reliability Standards and responsible for carrying out the tasks within a NERC function without regard to whether a task or tasks are performed by another entity pursuant to the terms of the PJM Governing Agreements.

Regulation:

"Regulation" shall mean the capability of a specific generation resource or Demand Resource with appropriate telecommunications, control and response capability to separately increase and decrease its output or adjust load in response to a regulating control signal, in accordance with the specifications in the PJM Manuals.

Regulation Requirement:

"Regulation Requirement" shall mean the required megawatts of performance-adjusted Regulation capability to be maintained in a Regulation Zone. The Regulation Requirement is defined as a set megawatt value by commitment interval and can increase to account for additional operational uncertainty, in accordance with the PJM Manuals.

Regulation Zone:

"Regulation Zone" shall mean any of those one or more geographic areas, each consisting of a combination of one or more Control Zone(s) as designated by the Office of the Interconnection in the PJM Manuals, relevant to provision of, and requirements for, regulation service.

Related Parties:

"Related Parties" shall mean, solely for purposes of the governance provisions of the Operating Agreement: (i) any generation and transmission cooperative and one of its distribution cooperative members; and (ii) any joint municipal agency and one of its members. For purposes of the Operating Agreement, representatives of state or federal government agencies shall not be deemed Related Parties with respect to each other, and a public body's regulatory authority, if any, over a Member shall not be deemed to make it a Related Party with respect to that Member.

Relevant Electric Retail Regulatory Authority:

"Relevant Electric Retail Regulatory Authority" shall mean an entity that has jurisdiction over and establishes prices and policies for competition for providers of retail electric service to end-customers, such as the city council for a municipal utility, the governing board of a cooperative utility, the state public utility commission or any other such entity.

Reliability Assurance Agreement or PJM Reliability Assurance Agreement:

"Reliability Assurance Agreement" or "PJM Reliability Assurance Agreement" shall mean that certain Reliability Assurance Agreement Among Load-Serving Entities in the PJM Region, on file with FERC as PJM Interconnection, L.L.C. Rate Schedule FERC. No. 44, and as amended from time to time thereafter.

Reliability Coordinator:

"Reliability Coordinator" shall have the same meaning set forth in the NERC Glossary of Terms used in NERC Reliability Standards.

Reserve Penalty Factor:

"Reserve Penalty Factor" shall mean the cost, in $/MWh, associated with being unable to meet a specific reserve requirement in a Reserve Zone or Reserve Sub-zone. A Reserve Penalty Factor will be defined for each reserve requirement in a Reserve Zone or Reserve Sub-zone.

Reserve Sub-zone:

"Reserve Sub-zone" shall mean any of those geographic areas wholly contained within a Reserve Zone, consisting of a combination of a portion of one or more Control Zone(s) as designated by the Office of the Interconnection in the PJM Manuals, relevant to provision of, and requirements for, reserve service.

Reserve Zone:

"Reserve Zone" shall mean any of those geographic areas consisting of a combination of one or more Control Zone(s) as designated by the Office of the Interconnection in the PJM Manuals, relevant to provision of, and requirements for, reserve service.

Residual Auction Revenue Rights:

"Residual Auction Revenue Rights" shall mean incremental stage 1 Auction Revenue Rights created within a Planning Period by an increase in transmission system capability, including the return to service of existing transmission capability, that was not modeled pursuant to Operating Agreement, Schedule 1, section 7.5, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.5 in compliance with Operating Agreement, Schedule 1, section 7.4.2(h), and the parallel provisions of Tariff, Attachment K-Appendix, section 7.4.2(h), and, if modeled, would have increased the amount of stage 1 Auction Revenue Rights allocated pursuant to Operating Agreement, Schedule 1, section 7.4.2, and the parallel provisions of Attachment K-Appendix, section 7.4.2; provided that, the foregoing notwithstanding, Residual Auction Revenue Rights shall exclude: 1) Incremental Auction Revenue Rights allocated pursuant to Tariff, Part VI; and 2) Auction Revenue Rights allocated to entities that are assigned cost responsibility pursuant to Operating Agreement, Schedule 6 for transmission upgrades that create such rights.

Residual Metered Load:

"Residual Metered Load" shall mean all load remaining in an electric distribution company's fully metered franchise area(s) or service territory(ies) after all nodally priced load of entities serving load in such area(s) or territory(ies) has been carved out.

Revenue Data for Settlements:

"Revenue Data for Settlements" shall mean energy quantities used in accounting and billing as determined pursuant to Tariff, Attachment K-Appendix and the corresponding provisions of Operating Agreement, Schedule 1.

Right-Sized Replacement Facility:

"Right-Sized Replacement Facility" shall mean a Long-Term Transmission Project that (1) is identified by the Office of the Interconnection through the Long-Term Regional Transmission Plan study process; (2) addresses an In-Kind Replacement Facility Need as identified by a Transmission Owner pursuant to Tariff, Attachment M-5; (3) meets a Long-Term Transmission Need; (4) results in more than an incidental increase in capacity compared to the existing transmission facility; and (5) is located in the same general right-of-way or uses or expands an existing right-of-way of the existing transmission facility.

1.5 Procedure for Development of the Regional Transmission Expansion Plan.

1.5.1 Commencement of the Process.

(a) The Office of the Interconnection shall initiate the enhancement and expansion study process if: (i) required as a result of a need for transfer capability identified by the Office of the Interconnection in its evaluation of requests for interconnection with the Transmission System or for firm transmission service with a term of one year or more; (ii) required to address a need identified by the Office of the Interconnection in its on-going evaluation of the Transmission System's market efficiency and operational performance; (iii) required as a result of the Office of the Interconnection's assessment of the Transmission System's compliance with NERC Reliability Standards, more stringent reliability criteria, if any, or PJM planning and operating criteria; (iv) required to address constraints or available transfer capability shortages, including, but not limited to, available transfer capability shortages that prevent the simultaneous feasibility of stage 1A Auction Revenue Rights allocated pursuant to the Operating Agreement, Schedule 1, section 7.4.2(b), constraints or shortages as a result of expected generation retirements, constraints or shortages based on an evaluation of load forecasts, or system reliability needs arising from proposals for the addition of Transmission Facilities in the PJM Region; or (v) expansion of the Transmission System is proposed by one or more Transmission Owners, Interconnection Customers, Network Service Users or Transmission Customers, or any party that funds Network Upgrades pursuant to the Operating Agreement, Schedule 1, section 7.8. The Office of the Interconnection may initiate the enhancement and expansion study process to address or consider, where appropriate, requirements or needs arising from sensitivity studies, modeling assumption variations, scenario analyses, and Public Policy Objectives.

(b) The Office of the Interconnection shall notify the Transmission Expansion Advisory Committee participants of, as well as publicly notice, the commencement of an enhancement and expansion study. The Transmission Expansion Advisory Committee participants shall notify the Office of the Interconnection in writing of any additional transmission considerations they would like to have included in the Office of the Interconnection's analyses.

1.5.2 Development of Scope, Assumptions and Procedures.

Once the need for an enhancement and expansion study has been established, the Office of the Interconnection shall consult with the Transmission Expansion Advisory Committee and the Subregional RTEP Committees, as appropriate, to prepare the study's scope, assumptions and procedures.

1.5.3 Scope of Studies.

In conducting the enhancement and expansion studies, the Office of the Interconnection shall not limit its analyses to bright line tests to identify and evaluate potential Transmission System limitations, violations of planning criteria, or transmission needs. In addition to the bright line tests, the Office of the Interconnection shall employ sensitivity studies, modeling assumption variations, and scenario analyses, and shall also consider Public Policy Objectives in the studies and analyses, so as to mitigate the possibility that bright line metrics may inappropriately include or exclude transmission projects from the transmission plan. Sensitivity studies, modeling assumption variations, and scenario analyses shall take account of potential changes in expected future system conditions, including, but not limited to, load levels, transfer levels, fuel costs, the level and type of generation, generation patterns (including, but not limited to, the effects of assumptions regarding generation that is at risk for retirement and new generation to satisfy Public Policy Objectives), demand response, and uncertainties arising from estimated times to construct transmission upgrades. The Office of the Interconnection shall use the sensitivity studies, modeling assumption variations and scenario analyses in evaluating and choosing among alternative solutions to reliability, market efficiency and operational performance needs. The Office of the Interconnection shall provide the results of its studies and analyses to the Transmission Expansion Advisory Committee to consider the impact that sensitivities, assumptions, and scenarios may have on Transmission System needs and the need for transmission enhancements or expansions. Enhancement and expansion studies shall be completed by the Office of the Interconnection in collaboration with the affected Transmission Owners, as required. In general, enhancement and expansion studies shall include:

(a) An identification of existing and projected limitations on the Transmission System's physical, economic and/or operational capability or performance, with accompanying simulations to identify the costs of controlling those limitations. Potential enhancements and expansions will be proposed to mitigate limitations controlled by non-economic means.

(b) Evaluation and analysis of potential enhancements and expansions, including alternatives thereto, needed to mitigate such limitations.

(c) Identification, evaluation and analysis of potential transmission expansions and enhancements, demand response programs, and other alternative technologies as appropriate to maintain system reliability.

(d) Identification, evaluation and analysis of potential enhancements and expansions for the purposes of supporting competition, market efficiency, operational performance, and Public Policy Requirements in the PJM Region.

(e) Identification, evaluation and analysis of upgrades to support Incremental Auction Revenue Rights requested pursuant to the Operating Agreement, Schedule 1, section 7.8.

(f) Identification, evaluation and analysis of upgrades to support all transmission customers, including native load and network service customers.

(g) Engineering studies needed to determine the effectiveness and compliance of recommended enhancements and expansions, with the following PJM criteria: system reliability, operational performance, and market efficiency.

(h) Identification, evaluation and analysis of potential enhancements and expansions designed to ensure that the Transmission System's capability can support the simultaneous feasibility of all stage 1A Auction Revenue Rights allocated pursuant to the Operating Agreement, Schedule 1, section 7.4.2(b). Enhancements and expansions related to stage 1A

Auction Revenue Rights identified pursuant to this Section shall be recommended for inclusion in the Regional Transmission Expansion Plan together with a recommended in-service date based on the results of the ten (10) year stage 1A simultaneous feasibility analysis. Any such recommended enhancement or expansion under this Operating Agreement, Schedule 6, section 1.5.3(h) shall include, but shall not be limited to, the reason for the upgrade, the cost of the upgrade, the cost allocation identified pursuant to the Operating Agreement, Schedule 6, section 1.5.6(m) and an analysis of the benefits of the enhancement or expansion, provided that any such upgrades will not be subject to a market efficiency cost/benefit analysis.

1.5.4 Supply of Data.

(a) The Transmission Owners shall provide to the Office of the Interconnection on an annual or periodic basis as specified by the Office of the Interconnection, any information and data reasonably required by the Office of the Interconnection to perform the Regional Transmission Expansion Plan, including but not limited to the following: (i) a description of the total load to be served from each substation; (ii) the amount of any interruptible loads included in the total load (including conditions under which an interruption can be implemented and any limitations on the duration and frequency of interruptions); (iii) a description of all generation resources to be located in the geographic region encompassed by the Transmission Owner's transmission facilities, including unit sizes, VAR capability, operating restrictions, and any must-run unit designations required for system reliability or contract reasons; the (iv) current local planning information, including all criteria, assumptions and models used by the Transmission Owners, such as those used to develop Supplemental Projects. The data required under this Section shall be provided in the form and manner specified by the Office of the Interconnection.

(b) In addition to the foregoing, the Transmission Owners, those entities requesting transmission service and any other entities proposing to provide Transmission Facilities to be integrated into the PJM Region shall supply any other information and data reasonably required by the Office of the Interconnection to perform the enhancement and expansion study.

(c) The Office of the Interconnection also shall solicit from the Members, Transmission Customers and other interested parties, including but not limited to electric utility regulatory agencies within the States in the PJM Region, Independent State Agencies Committee, and the State Consumer Advocates, information required by, or anticipated to be useful to, the Office of the Interconnection in its preparation of the enhancement and expansion study, including information regarding potential sensitivity studies, modeling assumption variations, scenario analyses, and Public Policy Objectives that may be considered.

(d) The Office of the Interconnection shall supply to the Transmission Expansion Advisory Committee and the Subregional RTEP Committees reasonably required information and data utilized to develop the Regional Transmission Expansion Plan. Such information and data shall be provided pursuant to the appropriate protection of confidentiality provisions and Office of the Interconnection's CEII process.

(e) The Office of the Interconnection shall provide access through the PJM website, to the Transmission Owner's local planning information, including all criteria, assumptions and models used by the Transmission Owners in their internal planning processes, including the development of Supplemental Projects ("Local Plan Information"). Local Plan Information shall be provided consistent with: (1) any applicable confidentiality provisions set forth in the Operating Agreement, section 18.17; (2) the Office of the Interconnection's CEII process; and (3) any applicable copyright limitations. Notwithstanding the foregoing, the Office of the Interconnection may share with a third party Local Plan Information that has been designated as confidential, pursuant to the provisions for such designation as set forth in the Operating Agreement, section 18.17 and subject to: (i) agreement by the disclosing Transmission Owner consistent with the process set forth in this Operating Agreement; and (ii) an appropriate non-disclosure agreement to be executed by PJM Interconnection, L.L.C., the Transmission Owner and the requesting third party. With the exception of confidential, CEII and copyright protected information, Local Plan Information will be provided for full review by the Planning Committee, the Transmission Expansion Advisory Committee, and the Subregional RTEP Committees.

1.5.5 Coordination of the Regional Transmission Expansion Plan.

(a) The Regional Transmission Expansion Plan shall be developed in accordance with the principles of interregional coordination with the Transmission Systems of the surrounding Regional Entities and with the local transmission providers, through the Transmission Expansion Advisory Committee and the Subregional RTEP Committee.

(b) The Regional Transmission Expansion Plan shall be developed taking into account the processes for coordinated regional transmission expansion planning established under the following agreements:

- Joint Operating Agreement Between the Midwest Independent System Operator, Inc. and PJM Interconnection, L.L.C., which is found at http://www.pjm.com/~/media/documents/agreements/joa-complete.ashx;

- Northeastern ISO/RTO Planning Coordination Protocol, which is described at Schedule 6-B and found at http://www.pjm.com/~/media/documents/agreements/northeastern-iso-rto-planning-coordination-protocol.ashx;

- Joint Operating Agreement Among and Between New York Independent System Operator Inc., which is found at http://www.pjm.com/~/media/documents/agreements/nyiso-pjm.ashx;

- Interregional Transmission Coordination Between the SERTP and PJM Regions, which is found at Operating Agreement, Schedule 6-A ;

- Allocation of Costs of Certain Interregional Transmission Projects Located in the PJM and SERTP Regions, which is located at Tariff, Schedule 12-B;

- Joint Reliability Coordination Agreement Between PJM Interconnection, L.L.C., Tennessee Valley Authority, and Louisville Gas and Electric Company and Kentucky Utilities.

(i) Coordinated regional transmission expansion planning shall also incorporate input from parties that may be impacted by the coordination efforts, including but not limited to, the Members, Transmission Customers, electric utility regulatory agencies in the PJM Region, and the State Consumer Advocates, in accordance with the terms and conditions of the applicable regional coordination agreements.

(ii) An entity, including existing Transmission Owners and Nonincumbent Developers, may submit potential Interregional Transmission Projects pursuant to the Operating Agreement, Schedule 6, section 1.5.8.

(c) The Regional Transmission Expansion Plan shall be developed by the Office of the Interconnection in consultation with the Transmission Expansion Advisory Committee during the enhancement and expansion study process.

(d) The Regional Transmission Expansion Plan shall be developed taking into account the processes for coordination of the regional and subregional systems.

1.5.6 Development of the Recommended Regional Transmission Expansion Plan.

(a) The Office of the Interconnection shall be responsible for the development of the Regional Transmission Expansion Plan and for conducting the studies, including sensitivity studies and scenario analyses on which the plan is based. The Regional Transmission Expansion Plan, including the Regional RTEP Projects, the Subregional RTEP Projects and the Supplemental Projects shall be developed through an open and collaborative process with opportunity for meaningful participation through the Transmission Expansion Advisory Committee and the Subregional RTEP Committees.

(b) The Transmission Expansion Advisory Committee and the Subregional RTEP Committees shall each facilitate a minimum of one initial assumptions meeting to be scheduled at the commencement of the Regional Transmission Expansion Plan process. The purpose of the assumptions meeting shall be to provide an open forum to discuss the following: (i) the assumptions to be used in performing the evaluation and analysis of the potential enhancements and expansions to the Transmission Facilities; (ii) Public Policy Requirements identified by the states for consideration in the Office of the Interconnection's transmission planning analyses; (iii) Public Policy Objectives identified by stakeholders for consideration in the Office of the Interconnection's transmission planning analyses; (iv) the impacts of regulatory actions, projected changes in load growth, demand response resources, energy efficiency programs, price responsive demand, generating additions and retirements, market efficiency and other trends in the industry; and (v) alternative sensitivity studies, modeling assumptions and scenario analyses proposed by the Committee participants. Prior to the initial assumptions meeting, the Transmission Expansion Advisory Committee and Subregional RTEP Committees participants will be afforded the opportunity to provide input and submit suggestions regarding the information identified in items (i) through (v) of this subsection. Following the assumptions meeting and prior to performing the evaluation and analyses of transmission needs, the Office of the Interconnection shall determine the range of assumptions to be used in the studies and scenario analyses, based on the advice and recommendations of the Transmission Expansion Advisory Committee and Subregional RTEP Committees and, through the Independent State Agencies, the statement of Public Policy Requirements provided individually by the states and any state member's assessment or prioritization of Public Policy Objectives proposed by other stakeholders. The Office of the Interconnection shall document and publicly post its determination for review. Such posting shall include an explanation of those Public Policy Requirements and Public Policy Objectives adopted at the assumptions stage to be used in performing the evaluation and analysis of transmission needs. Following identification of transmission needs and prior to evaluating potential enhancements and expansions to the Transmission System the Office of the Interconnection shall publicly post all transmission need information identified as described further in the Operating Agreement, Schedule 6, section 1.5.8(b) herein to support the role of the Subregional RTEP Committees in the development of the Local Plan and support the role of Transmission Expansion Advisory Committee in the development of the Regional Transmission Expansion Plan. The Office of the Interconnection shall also post an explanation of why other Public Policy Requirements and Public Policy Objectives introduced by stakeholders at the assumptions stage were not adopted.

(c) The Subregional RTEP Committees shall also schedule and facilitate meetings related to Supplemental Projects, as described in the Tariff, Attachment M-3.

(d) After the assumptions meeting(s), the Transmission Expansion Advisory Committee and the Subregional RTEP Committees shall facilitate additional meetings and shall post all communications required to provide early opportunity for the committee participants (as defined in the Operating Agreement, Schedule 6, sections 1.3(b) and 1.3(c)) to review, evaluate and offer comments and alternatives to the following arising from the studies performed by the Office of the Interconnection, including sensitivity studies and scenario analyses: (i) any identified violations of reliability criteria and analyses of the market efficiency and operational performance of the Transmission System; (ii) potential transmission solutions, including any acceleration, deceleration or modifications of a potential expansion or enhancement based on the results of sensitivities studies and scenario analyses; and (iii) the proposed Regional Transmission Expansion Plan. These meetings will be scheduled as deemed necessary by the Office of the Interconnection or upon the request of the Transmission Expansion Advisory Committee or the Subregional RTEP Committees. The Office of the Interconnection will provide updates on the status of the development of the Regional Transmission Expansion Plan at these meetings or at the regularly scheduled meetings of the Planning Committee.

(e) In addition, the Office of the Interconnection shall facilitate periodic meetings with the Independent State Agencies Committee to discuss: (i) the assumptions to be used in performing the evaluation and analysis of the potential enhancements and expansions to the Transmission Facilities; (ii) regulatory initiatives, as appropriate, including state regulatory agency initiated programs, and other Public Policy Objectives, to consider including in the Office of the Interconnection's transmission planning analyses; (iii) the impacts of regulatory actions, projected changes in load growth, demand response resources, energy efficiency programs, generating capacity, market efficiency and other trends in the industry; and (iv) alternative sensitivity studies, modeling assumptions and scenario analyses proposed by Independent State Agencies Committee. At such meetings, the Office of the Interconnection also shall discuss the current status of the enhancement and expansion study process. The Independent State Agencies Committee may request that the Office of Interconnection schedule additional meetings as necessary. The Office of the Interconnection shall inform the Transmission Expansion Advisory Committee and the Subregional RTEP Committees, as appropriate, of the input of the Independent State Agencies Committee and shall consider such input in developing the range of assumptions to be used in the studies and scenario analyses described in section (b), above.

(f) Upon completion of its studies and analysis, including sensitivity studies and scenario analyses the Office of the Interconnection shall post on the PJM website the violations, system conditions, economic constraints, and Public Policy Requirements as detailed in the Operating Agreement, Schedule 6, section 1.5.8(b) to afford entities an opportunity to submit proposed enhancements or expansions to address the posted violations, system conditions, economic constraints and Public Policy Requirements as provided for in the Operating Agreement, Schedule 6, section 1.5.8(c). Following the close of a proposal window, the Office of the Interconnection shall: (i) post all proposals submitted pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c); (ii) consider proposals submitted during the proposal windows consistent with the Operating Agreement, Schedule 6, section 1.5.8(d) and develop a recommended plan. Following review by the Transmission Expansion Advisory Committee of proposals, the Office of the Interconnection, based on identified needs and the timing of such needs, and taking into account the sensitivity studies, modeling assumption variations and scenario analyses considered pursuant to the Operating Agreement, Schedule 6, section 1.5.3, shall determine, which more efficient or cost-effective enhancements and expansions shall be included in the recommended plan, including solutions identified as a result of the sensitivity studies, modeling assumption variations, and scenario analyses, that may accelerate, decelerate or modify a potential reliability, market efficiency or operational performance expansion or enhancement identified as a result of the sensitivity studies, modeling assumption variations and scenario analyses, shall be included in the recommended plan. The Office of the Interconnection shall post the proposed recommended plan for review and comment by the Transmission Expansion Advisory Committee. The Transmission Expansion Advisory Committee shall facilitate open meetings and communications as necessary to provide opportunity for the Transmission Expansion Advisory Committee participants to collaborate on the preparation of the recommended enhancement and expansion plan. The Office of the Interconnection also shall invite interested parties to submit comments on the plan to the Transmission Expansion Advisory Committee and to the Office of the Interconnection before submitting the recommended plan to the PJM Board for approval.

(g) The recommended plan shall separately identify enhancements and expansions for the three PJM subregions, the PJM Mid-Atlantic Region, the PJM West Region, and the PJM South Region, and shall incorporate recommendations from the Subregional RTEP Committees.

(h) The recommended plan shall separately identify enhancements and expansions that are classified as Supplemental Projects.

(i) The recommended plan shall identify enhancements and expansions that relieve transmission constraints and which, in the judgment of the Office of the Interconnection, are economically justified. Such economic expansions and enhancements shall be developed in accordance with the procedures, criteria and analyses described in the Operating Agreement, Schedule 6, sections 1.5.7 and 1.5.8.

(j) The recommended plan shall identify enhancements and expansions proposed by a state or states pursuant to the Operating Agreement, Schedule 6, section 1.5.9.

(k) The recommended plan shall include proposed Merchant Transmission Facilities within the PJM Region and any other enhancement or expansion of the Transmission System requested by any participant which the Office of the Interconnection finds to be compatible with the Transmission System, though not required pursuant to the Operating Agreement, Schedule 6, 1.5.6, or Tariff Parts VII or VIII, provided that (1) the requestor has complied, to the extent applicable, with the procedures and other requirements of the Tariff, Parts IV and VI, or Tariff, Parts VII or VIII, as applicable; (2) the proposed enhancement or expansion is consistent with applicable reliability standards, operating criteria and the purposes and objectives of the regional planning protocol; (3) the requestor shall be responsible for all costs of such enhancement or expansion (including, but not necessarily limited to, costs of siting, designing, financing, constructing, operating and maintaining the pertinent facilities), and (4) except as otherwise provided by the Tariff, Parts IV and VI, , or Tariff, Parts VII or VIII, as applicable with respect to Merchant Network Upgrades, the requestor shall accept responsibility for ownership, construction, operation and maintenance of the enhancement or expansion through an undertaking satisfactory to the Office of the Interconnection.

(l) For each enhancement or expansion that is included in the recommended plan, the plan shall consider, based on the planning analysis: other input from participants, including any indications of a willingness to bear cost responsibility for such enhancement or expansion; and, when applicable, relevant projects being undertaken to ensure the simultaneous feasibility of Stage 1A ARRs, to facilitate Incremental ARRs pursuant to the provisions of the Operating Agreement, Schedule 1, section 7.8, or to facilitate upgrades pursuant to the Tariff, Parts II, III, or VI, or Tariff, Parts VII or VIII, as applicable and designate one or more Transmission Owners or other entities to construct, own and, unless otherwise provided, finance the recommended transmission enhancement or expansion. Any designation under this paragraph of one or more entities to construct, own and/or finance a recommended transmission enhancement or expansion shall also include a designation of partial responsibility among them. Nothing herein shall prevent any Transmission Owner or other entity designated to construct, own and/or finance a recommended transmission enhancement or expansion from agreeing to undertake its responsibilities under such designation jointly with other Transmission Owners or other entities.

(m) Based on the planning analysis and other input from participants, including any indications of a willingness to bear cost responsibility for an enhancement or expansion, the recommended plan shall, for any enhancement or expansion that is included in the plan, designate (1) the Market Participant(s) in one or more Zones, or any other party that has agreed to fully fund upgrades pursuant to this Agreement or the PJM Tariff, that will bear cost responsibility for such enhancement or expansion, as and to the extent provided by any provision of the PJM Tariff or this Agreement, (2) in the event and to the extent that no provision of the PJM Tariff or this Agreement assigns cost responsibility, the Market Participant(s) in one or more Zones from which the cost of such enhancement or expansion shall be recovered through charges established pursuant to the Tariff, Schedule 12, and (3) in the event and to the extent that the Coordinated System Plan developed under the Joint Operating Agreement Between the Midwest Independent System Operator, Inc. and PJM Interconnection, L.L.C. assigns cost responsibility, the Market Participant(s) in one or more Zones from which the cost of such enhancement or expansion shall be recovered. Any designation under clause (2) of the preceding sentence (A) shall further be based on the Office of the Interconnection's assessment of the contributions to the need for, and benefits expected to be derived from, the pertinent enhancement or expansion by affected Market Participants and, (B) subject to FERC review and approval, shall be incorporated in any amendment to the Tariff, Schedule 12 that establishes a Transmission Enhancement Charge Rate in connection with an economic expansion or enhancement developed under the Operating Agreement, Schedule 6, sections 1.5.6(i) and 1.5.7, (C) the costs associated with expansions and enhancements required to ensure the simultaneous feasibility of stage 1A Auction Revenue Rights allocated pursuant to the Operating Agreement, Schedule 1, section 7 shall (1) be allocated across transmission zones based on each zone's stage 1A eligible Auction Revenue Rights flow contribution to the total stage 1A eligible Auction Revenue Rights flow on the facility that limits stage 1A ARR feasibility and (2) within each transmission zone the Network Service Users and Transmission Customers that are eligible to receive stage 1A Auction Revenue Rights shall be the Responsible Customers under the Tariff, Schedule 12, section (b) for all expansions and enhancements included in the Regional Transmission Expansion Plan to ensure the simultaneous feasibility of stage 1A Auction Revenue Rights, and (D) the costs associated with expansions and enhancements required to reduce to zero the Locational Price Adder for LDAs as described in the Tariff, Attachment DD, section 15 shall (1) be allocated across Zones based on each Zone's pro rata share of load in such LDA and (2) within each Zone, to all LSEs serving load in such LDA pro rata based on such load.

Any designation under clause (3), above, (A) shall further be based on the Office of the Interconnection's assessment of the contributions to the need for, and benefits expected to be derived from, the pertinent enhancement or expansion by affected Market Participants, and (B), subject to FERC review and approval, shall be incorporated in an amendment to a Schedule of the PJM Tariff which establishes a charge in connection with the pertinent enhancement or expansion. Before designating fewer than all customers using Point-to-Point Transmission Service or Network Integration Transmission Service within a Zone as customers from which the costs of a particular enhancement or expansion may be recovered, Transmission Provider shall consult, in a manner and to the extent that it reasonably determines to be appropriate in each such instance, with affected state utility regulatory authorities and stakeholders. When the plan designates more than one responsible Market Participant, it shall also designate the proportional responsibility among them. Notwithstanding the foregoing, with respect to any facilities that the Regional Transmission Expansion Plan designates to be owned by an entity other than a Transmission Owner, the plan shall designate that entity as responsible for the costs of such facilities.

(n) Certain Regional RTEP Project(s) and Subregional RTEP Project(s) may not be required for compliance with the following PJM criteria: system reliability, market efficiency or operational performance, pursuant to a determination by the Office of the Interconnection.

These Supplemental Projects shall be separately identified in the RTEP and are not subject to approval by the PJM Board.

1.5.7 Development of Economic-based Enhancements or Expansions.

(a) Each year the Transmission Expansion Advisory Committee shall review and comment on the assumptions to be used in performing the market efficiency analysis to identify enhancements or expansions that could relieve transmission constraints that have an economic impact ("economic constraints"). Such assumptions shall include, but not be limited to, the discount rate used to determine the present value of the Total Annual Enhancement Benefit and Total Enhancement Cost, and the annual revenue requirement, including the recovery period, used to determine the Total Enhancement Cost. The discount rate shall be based on the Transmission Owners' most recent after-tax embedded cost of capital weighted by each Transmission Owner's total transmission capitalization. Each year, each Transmission Owner will be requested to provide the Office of the Interconnection with the Transmission Owner's most recent after-tax embedded cost of capital, total transmission capitalization, and levelized carrying charge rate, including the recovery period. The recovery period shall be consistent with recovery periods allowed by the Commission for comparable facilities. Prior to PJM Board consideration of such assumptions, the assumptions shall be presented to the Transmission Expansion Advisory Committee for review and comment. Following review and comment by the Transmission Expansion Advisory Committee, the Office of the Interconnection shall submit the assumptions to be used in performing the market efficiency analysis described in this Operating Agreement, Schedule 6, section 1.5.7 to the PJM Board for consideration.

(b) Following PJM Board consideration of the assumptions, the Office of the Interconnection shall perform a market efficiency analysis to compare the costs and benefits of: (i) accelerating reliability-based enhancements or expansions already included in the Regional Transmission Plan that if accelerated also could relieve one or more economic constraints; (ii) modifying reliability–based enhancements or expansions already included in the Regional Transmission Plan that as modified would relieve one or more economic constraints; and (iii) adding new enhancements or expansions that could relieve one or more economic constraints, but for which no reliability-based need has been identified. Economic constraints include, but are not limited to, constraints that cause: (1) significant historical gross congestion; (2) pro-ration of Stage 1B ARR requests as described in the Operating Agreement, Schedule 1, section 7.4.2(c); or (3) significant simulated congestion as forecasted in the market efficiency analysis. The timeline for the market efficiency analysis and comparison of the costs and benefits for items in the Operating Agreement, Schedule 6, section 1.5.7(b)(i-iii) is described in the PJM Manuals.

(c) The process for conducting the market efficiency analysis described in subsection (b) above shall include the following:

(i) The Office of the Interconnection shall identify and provide to the Transmission Expansion Advisory Committee a list of economic constraints to be evaluated in the market efficiency analysis.

(ii) The Office of the Interconnection shall identify any planned reliability-based enhancements or expansions already included in the Regional Transmission Expansion Plan, which if accelerated would relieve such constraints, and present any such proposed reliability-based enhancements and expansions to be accelerated to the Transmission Expansion Advisory Committee for review and comment. The PJM Board, upon consideration of the advice of the Transmission Expansion Advisory Committee, thereafter shall consider and vote to approve any accelerations.

(iii) The Office of the Interconnection shall evaluate whether including any additional Economic-based Enhancements or Expansions in the Regional Transmission Expansion Plan or modifications of existing Regional Transmission Expansion Plan reliability-based enhancements or expansions would relieve an economic constraint. In addition, pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c), any market participant may submit to the Office of the Interconnection a proposal to construct an additional Economic-based Enhancement or Expansion to relieve an economic constraint. Upon completion of its evaluation, including consideration of any eligible market participant proposed Economic-based Enhancements or Expansions, the Office of the Interconnection shall present to the Transmission Expansion Advisory Committee a description of new Economic-based Enhancements or Expansions for review and comment. Upon consideration and advice of the Transmission Expansion Advisory Committee, the PJM Board shall consider any new Economic-based Enhancements or Expansions for inclusion in the Regional Transmission Plan and for those enhancements and expansions it approves, the PJM Board shall designate (a) the entity or entities that will be responsible for constructing and owning or financing the additional Economic-based Enhancements or Expansions, (b) the estimated costs of such enhancements and expansions, and (c) the market participants that will bear responsibility for the costs of the additional Economic-based Enhancements or Expansions pursuant to the Operating Agreement, Schedule 6, section 1.5.6(m). In the event the entity or entities designated as responsible for construction, owning or financing a designated new Economic-based Enhancement or Expansion declines to construct, own or finance the new Economic-based Enhancement or Expansion, the enhancement or expansion will not be included in the Regional Transmission Expansion Plan but will be included in the report filed with the FERC in accordance with the Operating Agreement, Schedule 6, sections 1.6 and 1.7. This report also shall include information regarding PJM Board approved accelerations of reliability-based enhancements or expansions that an entity declines to accelerate.

(d) To determine the economic benefits of accelerating or modifying planned reliability-based enhancements or expansions or of constructing additional Economic-based Enhancements or Expansions and whether such Economic-based Enhancements or Expansion are eligible for inclusion in the Regional Transmission Expansion Plan, the Office of the Interconnection shall perform and compare market simulations with and without the proposed accelerated or modified planned reliability-based enhancements or expansions or the additional Economic-based Enhancements or Expansions as applicable, using the Benefit/Cost Ratio calculation set forth below in this Operating Agreement, Schedule 6, section 1.5.7(d). An Economic-based Enhancement or Expansion shall be included in the Regional Transmission Expansion Plan recommended to the PJM Board, if the relative benefits and costs of the Economic-based Enhancement or Expansion meet a Benefit/Cost Ratio Threshold of at least 1.25:1.

The Benefit/Cost Ratio shall be determined as follows:

Benefit/Cost Ratio = [Present value of the Total Annual Enhancement Benefit for the 15 year *period starting with the RTEP Year (defined as current year plus five) minus benefits for years when the project is not yet in-service*] ÷ [Present value of the Total Enhancement Cost for the *same* 15 year *period*]

Where

Total Annual Enhancement Benefit = Energy Market Benefit + Reliability Pricing Model Benefit

and

For economic-based enhancements and expansions for which cost responsibility is assigned pursuant to the Tariff, Schedule 12, section (b)(i) the Energy Market Benefit is as follows:

Energy Market Benefit = [.50] * [Change in Total Energy Production Cost] + [.50] * [Change in Load Energy Payment]

For economic-based enhancements and expansions for which cost responsibility is assigned pursuant to the Tariff, Schedule 12, section (b)(v) the Energy Market Benefit is as follows:

Energy Market Benefit = [1] * [Change in Load Energy Payment]
and

Change in Total Energy Production Cost = [the estimated total annual fuel costs, variable O&M costs, and emissions costs of the dispatched resources in the PJM Region without the Economic-based Enhancement or Expansion] – [the estimated total annual fuel costs, variable O&M costs, and emissions costs of the dispatched resources in the PJM Region with the Economic-based Enhancement or Expansion]. The change in costs for purchases from outside of the PJM Region and sales to outside the PJM Region will be captured, if appropriate. Purchases will be valued at the Load Weighted LMP and sales will be valued at the Generation Weighted LMP.

and

Change in Load Energy Payment = [the annual sum of (the hourly estimated zonal load megawatts for each Zone) * (the hourly estimated zonal Locational Marginal Price for each Zone without the Economic-based Enhancement or Expansion)] – [the annual sum of (the hourly estimated zonal load megawatts for each Zone) * (the hourly estimated zonal Locational Marginal Price for each Zone with the Economic-based Enhancement or Expansion)] – [the change in value of transmission rights for each Zone with the Economic-based Enhancement or Expansion (as measured using currently allocated Auction Revenue Rights plus additional Auction Revenue Rights made available by the proposed acceleration or modification of the planned reliability-based enhancement or expansion or new Economic-based Enhancement or Expansion)]. The Change in the Load Energy Payment shall be the sum of the Change in the Load Energy Payment only of the Zones that show a decrease in the Load Energy Payment.

And

For economic-based enhancements and expansions for which cost responsibility is assigned pursuant to the Tariff, Schedule 12, section (b)(i) the Reliability Pricing Benefit is as follows:

Reliability Pricing Benefit = [.50] * [Change in Total System Capacity Cost] + [.50] * [Change in Load Capacity Payment]

and

For economic-based enhancements or expansions for which cost responsibility is assigned pursuant to the Tariff, Schedule 12, section (b)(v) the Reliability Pricing Benefit is as follows:

Reliability Pricing Benefit = [1] * [Change in Load Capacity Payment]

Change in Total System Capacity Cost = [the sum of (the megawatts that are estimated to be cleared in the Base Residual Auction under the Tariff, Attachment DD) * (the prices that are estimated to be contained in the Sell Offers for each such cleared megawatt without the Economic-based Enhancement or Expansion) * (the number of days in the study year)] – [the sum of (the megawatts that are estimated to be cleared in the Base Residual Auction under the Tariff, Attachment DD) * (the prices that are estimated to be contained in the Sell Offers for each such cleared megawatt with the Economic-based Enhancement or Expansion) * (the number of days in the study year)]

and

Change in Load Capacity Payment = [the sum of (the estimated zonal load megawatts in each Zone) * (the estimated Final Zonal Capacity Prices under the Tariff, Attachment DD without the Economic-based Enhancement or Expansion) * (the number of days in the study year)] – [the sum of (the estimated zonal load megawatts in each Zone) * (the estimated Final Zonal Capacity Prices under the Tariff, Attachment DD with the Economic-based Enhancement or Expansion) * (the number of days in the study year)]. The Change in Load Capacity Payment shall take account of the change in value of Capacity Transfer Rights in each Zone, including any additional Capacity Transfer Rights made available by the proposed acceleration or modification of the planned reliability-based enhancement or expansion or new Economic-based Enhancement or Expansion. The Change in the Load Capacity Payment shall be the sum of the change in the Load Capacity Payment only of the Zones that show a decrease in the Load Capacity Payment.

and

Total Enhancement Cost (except for accelerations of planned reliability-based enhancements or expansions) = the estimated annual revenue requirement for the Economic-based Enhancement or Expansion.

Total Enhancement Cost (for accelerations of planned reliability-based enhancements or expansions) = the estimated change in annual revenue requirement resulting from the acceleration of the planned reliability-based enhancement or expansion, taking account of all of the costs incurred that would not have been incurred but for the acceleration of the planned reliability-based enhancement or expansion.

(e) For informational purposes only, to assist the Office of the Interconnection and the Transmission Expansion Advisory Committee in evaluating the economic benefits of accelerating planned reliability-based enhancements or expansions or of constructing a new Economic-based Enhancement or Expansion, the Office of the Interconnection shall calculate and post on the PJM website the change in the following metrics on a zonal and system-wide basis: (i) total energy production costs (fuel costs, variable O&M costs and emissions costs);(ii) total load energy payments (zonal load MW times zonal load Locational Marginal Price); (iii) total generator revenue from energy production (generator MW times generator Locational Marginal Price); (iv) Financial Transmission Right credits (as measured using currently allocated Auction Revenue Rights plus additional Auction Revenue Rights made available by the proposed acceleration or modification of a planned reliability-based enhancement or expansion or new Economic-based Enhancement or Expansion); (v) marginal loss surplus credit; and (vi) total capacity costs and load capacity payments under the Office of the Interconnection's Commission-approved capacity construct.

(f) To assure that new Economic-based Enhancements or Expansions included in the Regional Transmission Expansion Plan continue to be cost beneficial, the Office of the Interconnection annually shall review the costs and benefits of constructing such enhancements and expansions. In the event that there are changes in these costs and benefits, the Office of the Interconnection shall review the changes in costs and benefits with the Transmission Expansion Advisory Committee and recommend to the PJM Board whether the new Economic-based Enhancements or Expansions continue to provide measurable benefits, as determined in accordance with subsection (d), and should remain in the Regional Transmission Expansion Plan. The annual review of the costs and benefits of constructing new Economic-based Enhancements or Expansions included in the Regional Transmission Expansion Plan shall include review of changes in cost estimates of the Economic-based Enhancement or Expansion, and changes in system conditions, including but not limited to, changes in load forecasts, and anticipated Merchant Transmission Facilities, generation, and demand response, consistent with the requirements of the Operating Agreement, Schedule 6, section 1.5.7(i). The Office of the Interconnection will not be required to review annually the costs and benefits of constructing Economic-based Enhancements or Expansions with capital costs less than $20 million if, based on updated cost estimates and the original benefits, the Benefit/Cost Ratio remains at or above 1.25. The Office of the Interconnection shall no longer be required to review costs and benefits of constructing Economic-based Enhancements and Expansions once: (i) a certificate of public convenience and necessity or its equivalent is granted by the state or relevant regulatory authority in which such enhancements or expansions will be located; or (ii) if a certificate of public convenience and necessity or its equivalent is not required by the state or relevant regulatory authority in which an economic-based enhancement or expansion will be located, once construction activities commence at the project site.

(g) For new economic enhancements or expansions with costs in excess of $50 million, an independent review of such costs shall be performed to assure both consistency of estimating practices and that the scope of the new Economic-based Enhancements or Expansions is consistent with the new Economic-based Enhancements or Expansions as recommended in the market efficiency analysis.

(h) At any time, market participants may submit to the Office of the Interconnection requests to interconnect Merchant Transmission Facilities or generation facilities pursuant to the Tariff, Parts IV and VI that could address an economic constraint. In the event the Office of the Interconnection determines that the interconnection of such facilities would relieve an economic constraint, the Office of the Interconnection may designate the project as a "market solution" and, in the event of such designation, the Tariff, Part VI, Subpart B, section 216, as applicable, shall apply to the project.

(i) The assumptions used in the market efficiency analysis described in subsection (b) and any review of costs and benefits pursuant to subsection (f) shall include, but not be limited to, the following:

(i) Timely installation of Qualifying Transmission Upgrades, that are committed to the PJM Region as a result of any Reliability Pricing

Model Auction pursuant to the Tariff, Attachment DD or any FRR Capacity Plan pursuant to the RAA, Schedule 8.1.

(ii) Availability of Generation Capacity Resources, as defined by the RAA, section 1.33, that are committed to the PJM Region as a result of any Reliability Pricing Model Auction pursuant to the Tariff, Attachment DD or any FRR Capacity Plan pursuant to the RAA, Schedule 8.1.

(iii) Availability of Demand Resources that are committed to the PJM Region as a result of any Reliability Pricing Model Auction pursuant to the Tariff, Attachment DD or any FRR Capacity Plan pursuant to the RAA, Schedule 8.1.

(iv) Addition of Customer Facilities or Generating Facilities, as applicable, pursuant to an executed Interconnection Service Agreement or executed Interim Interconnection Service Agreement for which Interconnection Service Agreement is expected to be executed, or Generating Facilities pursuant to an executed Generation Interconnection Agreement or executed Engineering and Procurement Agreement for which Generation Interconnection Agreement is expected to be executed. Facilities with an executed Facilities Study Agreement or suspended Interconnection Service Agreement, or that have an approved Decision Point II submission, under Tariff Part VII or VIII, as applicable, may be included by the Office of the Interconnection after review with the Transmission Expansion Advisory Committee.

(v) Addition of Customer-Funded Upgrades pursuant to an executed Interconnection Construction Service Agreement or an Upgrade Construction Service Agreement.

(vi) Expected level of demand response over at least the ensuing fifteen years based on analyses that consider historic levels of demand response, expected demand response growth trends, impact of capacity prices, current and emerging technologies.

(vii) Expected levels of potential new generation and generation retirements over at least the ensuing fifteen years based on analyses that consider generation trends based on existing generation on the system, generation in the PJM interconnection queues or Cycles as applicable and Capacity Resource Clearing Prices under the Tariff, Attachment DD. If the Office of the Interconnection finds that the PJM reserve requirement is not met in any of its future year market efficiency analyses then it will model Customer Facilities or Generating Facilities pursuant to an executed Facilities Study Agreement approved Decision Point II submission under Tariff Part VII or VIII, or suspended Interconnection Service Agreement, ranked by their commercial probability. Commercial probability utilizes historical data from the PJM interconnection queues or Cycles as applicable to determine the likelihood of a Customer Facility or Generating Facility, pursuant to an executed Facilities Study Agreement approved Decision Point II submission under Tariff Part VII or VIII, or suspended Interconnection Service Agreement, reaching commercial operation. If the Office of the Interconnection finds that the PJM reserve requirement is not met in any of its future year market efficiency analyses, following inclusion of the Customer Facilities or Generating Facilities discussed above in this section 1.5.7(i)(vii), then it will model adequate future generation based on type and location of generation in existing PJM interconnection queues or Cycles as applicable and, if necessary, add transmission enhancements to address congestion that arises from such modeling.

(viii) Items (i) through (v) will be included in the market efficiency assumptions if qualified for consideration by the PJM Board. In the event that any of the items listed in (i) through (v) above qualify for inclusion in the market efficiency analysis assumptions, however, because of the timing of the qualification the item was not included in the assumptions used in developing the most recent Regional Transmission Expansion Plan, the Office of the Interconnection, to the extent necessary, shall notify any entity constructing an Economic-based Enhancement or Expansion that may be affected by inclusion of such item in the assumptions for the next market efficiency analysis described in subsection (b) and any review of costs and benefits pursuant to subsection (f) that the need for the Economic-based Enhancement or Expansion may be diminished or obviated as a result of the inclusion of the qualified item in the assumptions for the next annual market efficiency analysis or review of costs and benefits.

(j) For informational purposes only, with regard to Economic-based Enhancements or Expansions that are included in the Regional Transmission Expansion Plan pursuant to subsection (d) of this section 1.5.7, the Office of the Interconnection shall perform sensitivity analyses consistent with the Operating Agreement, Schedule 6, section 1.5.3 and shall provide the results of such sensitivity analyses to the Transmission Expansion Advisory Committee.

1.5.8 Development of Long-lead Projects, Short-term Projects, Immediate-need Reliability Projects, and Economic-based Enhancements or Expansions.

(a) **Pre-Qualification Process**.

(a)(1) On September 1 of each year, the Office of the Interconnection shall open a thirty-day pre-qualification window for entities, including existing Transmission Owners and Nonincumbent Developers, to submit to the Office of the Interconnection: (i) applications to pre-qualify as eligible to be a Designated Entity; or (ii) updated information as described in the Operating Agreement, Schedule 6, section 1.5.8(a)(3). Pre-qualification applications shall contain the following information: (i) name and address of the entity; (ii) the technical and engineering qualifications of the entity or its affiliate, partner, or parent company; (iii) the demonstrated experience of the entity or its affiliate, partner, or parent company to develop, construct, maintain, and operate transmission facilities, including a list or other evidence of transmission facilities the entity, its affiliate, partner, or parent company previously developed, constructed, maintained, or operated; (iv) the previous record of the entity or its affiliate, partner, or parent company regarding construction, maintenance, or operation of transmission facilities both inside and outside of the PJM Region; (v) the capability of the entity or its affiliate, partner, or parent company to adhere to standardized construction, maintenance and operating practices; (vi) the financial statements of the entity or its affiliate, partner, or parent company for the most recent fiscal quarter, as well as the most recent three fiscal years, or the period of existence of the entity, if shorter, or such other evidence demonstrating an entity's or its affiliate's, partner's, or parent company's current and expected financial capability acceptable to the Office of the Interconnection; (vii) a commitment by the entity to execute the Consolidated Transmission Owners Agreement, if the entity becomes a Designated Entity; (viii) evidence demonstrating the ability of the entity or its affiliate, partner, or parent company to address and timely remedy failure of facilities; (ix) a description of the experience of the entity or its affiliate, partner, or parent company in acquiring rights of way; and (x) such other supporting information that the Office of Interconnection requires to make the pre-qualification determinations consistent with this Operating Agreement, Schedule 6, section 1.5.8(a).

(a)(2) No later than October 31, the Office of the Interconnection shall notify the entities that submitted pre-qualification applications or updated information during the annual thirty-day pre-qualification window, whether they are, or will continue to be, pre-qualified as eligible to be a Designated Entity. In the event the Office of the Interconnection determines that an entity (i) is not, or no longer will continue to be, pre-qualified as eligible to be a Designated Entity, or (ii) provided insufficient information to determine pre-qualification, the Office of the Interconnection shall inform that the entity it is not pre-qualified and include in the notification the basis for its determination. The entity then may submit additional information, which the Office of the Interconnection shall consider in re-evaluating whether the entity is, or will continue to be, pre-qualified as eligible to be a Designated Entity. If the entity submits additional information by November 30, the Office of the Interconnection shall notify the entity of the results of its re-evaluation no later than December 15. If the entity submits additional information after November 30, the Office of the Interconnection shall use reasonable efforts to re-evaluate the application, with the additional information, and notify the entity of its determination as soon as practicable. No later than December 31, the Office of the Interconnection shall post on the PJM website the list of entities that are pre-qualified as eligible to be Designated Entities. If an entity is notified by the Office of the Interconnection that it does not pre-qualify or will not continue to be pre-qualified as eligible to be a Designated Entity, such entity may request dispute resolution pursuant to the Operating Agreement, Schedule 5.

(a)(3) In order to continue to pre-qualify as eligible to be a Designated Entity, such entity must confirm its information with the Office of the Interconnection no later than three years following its last submission or sooner if necessary as required below. In the event the information on which the entity's pre-qualification is based changes with respect to the upcoming year, such entity must submit to the Office of the Interconnection all updated information during the annual thirty-day pre-qualification window and the timeframes for notification in the Operating Agreement, Schedule 6, section 1.5.8(a)(2) shall apply. In the event the information on which the entity's pre-qualification is based changes with respect to the current year, such entity must submit to the Office of the Interconnection all updated information at the time the information changes and the Office of the Interconnection shall use reasonable efforts to evaluate the updated information and notify the entity of its determination as soon as practicable.

(a)(4) As determined by the Office of the Interconnection, an entity may submit a pre-qualification application outside the annual thirty-day pre-qualification window for good cause shown. For a pre-qualification application received outside of the annual thirty-day pre-qualification window, the Office of the Interconnection shall use reasonable efforts to process the application and notify the entity as to whether it pre-qualifies as eligible to be a Designated Entity as soon as practicable.

(a)(5) To be designated as a Designated Entity for any project proposed pursuant to the Operating Agreement, Schedule 6, section 1.5.8, existing Transmission Owners and Nonincumbent Developers must be pre-qualified as eligible to be a Designated Entity pursuant to this Operating Agreement, Schedule 6, section 1.5.8(a). This Operating Agreement, Schedule 6, section 1.5.8(a) shall not apply to entities that desire to propose projects for inclusion in the recommended plan but do not intend to be a Designated Entity.

(b) **Posting of Transmission System Needs**. Following identification of existing and projected limitations on the Transmission System's physical, economic and/or operational capability or performance in the enhancement and expansion analysis process described in this Operating Agreement, Schedule 6 and the PJM Manuals, and after consideration of non-transmission solutions, and prior to evaluating potential enhancements and expansions to the Transmission System, the Office of the Interconnection shall publicly post on the PJM website all transmission need information, including violations, system conditions, and economic constraints, and Public Policy Requirements, including (i) federal Public Policy Requirements; (ii) state Public Policy Requirements identified or agreed-to by the states in the PJM Region, which could be addressed by potential Short-term Projects, Long-lead Projects or projects determined pursuant to the State Agreement Approach in the Operating Agreement, Schedule 6, section 1.5.9, as applicable. Such posting shall support the role of the Subregional RTEP Committees in the development of the Local Plans and support the role of the Transmission Expansion Advisory Committee in the development of the Regional Transmission Expansion Plan. The Office of the Interconnection also shall post an explanation regarding why transmission needs associated with federal or state Public Policy Requirements were identified but were not selected for further evaluation.

(c) **Project Proposal Windows**. The Office of the Interconnection shall provide notice to stakeholders of a 60-day proposal window for Short-term Projects and a 120-day proposal window for Long-lead Projects and Economic-based Enhancements or Expansions. The specifics regarding whether or not the following types of violations or projects are subject to a proposal window are detailed in the Operating Agreement, Schedule 6, section 1.5.8(m) for Immediate-need Reliability Projects; Operating Agreement, Schedule 6, section 1.5.8(n) for reliability violations on transmission facilities below 200 kV; and Operating Agreement, Schedule 6, section 1.5.8(p) for violations on transmission substation equipment. The Office of Interconnection may shorten a proposal window should an identified need require a shorter proposal window to meet the needed in-service date of the proposed enhancements or expansions, or extend a proposal window as needed to accommodate updated information regarding system conditions. The Office of the Interconnection may shorten or lengthen a proposal window that is not yet opened based on one or more of the following criteria: (1) complexity of the violation or system condition; and (2) whether there is sufficient time remaining in the relevant planning cycle to accommodate a standard proposal window and timely address the violation or system condition. The Office of the Interconnection may lengthen a proposal window that already is opened based on or more of the following criteria: (i) changes in assumptions or conditions relating to the underlying need for the project, such as load growth or Reliability Pricing Model auction results; (ii) availability of new or changed information regarding the nature of the violations and the facilities involved; and (iii) time remaining in the relevant proposal window. In the event that the Office of the Interconnection determines to lengthen or shorten a proposal window, it will post on the PJM website the new proposal window period and an explanation as to the reasons for the change in the proposal window period. During these windows, the Office of the Interconnection will accept proposals from existing Transmission Owners and Nonincumbent Developers for potential enhancements or expansions to address the posted violations, system conditions, economic constraints, as well as Public Policy Requirements.

(c)(1) All proposals submitted in the proposal windows must contain: (i) the name and address of the proposing entity; (ii) a statement whether the entity intends to be the Designated Entity for the proposed project; (iii) the location of proposed project, including source and sink, if applicable; (iv) relevant engineering studies, and other relevant information as described in the PJM Manuals pertaining to the proposed project; (v) a detailed explanation regarding how the following alternative transmission technologies were analyzed in developing the proposal, and why each of these technologies were included in, or excluded from, the proposal: (a) dynamic line ratings, (b) advanced power flow control devices, (c) advanced conductors, and (d) transmission switching technologies; (vi) a proposed initial construction schedule including projected dates on which needed permits are required to be obtained in order to meet the required in-service date; (vii) cost estimates and analyses that provide sufficient detail for the Office of Interconnection to review and analyze the proposed cost of the project; and (viii) with the exception of project proposals submitted with cost estimates of $5 million or less, a $5,000 non-refundable deposit must be included with each project proposal submitted by a proposing entity that indicates an intention to be the Designated Entity.

(c)(1)(i) In addition, any proposing entity indicating its intention to be the Designated Entity will be responsible for and must pay all actual costs incurred by the

Transmission Provider to evaluate the submitted project proposal. To the extent the Transmission Provider incurs costs to evaluate multiple submitted project proposals where such costs are not severable by individual project proposal, the Transmission Provider shall invoice equal shares of the non-severable costs among the project proposals that cause such non-severable costs to be incurred. Notwithstanding this method of invoicing non-severable costs, non-severable costs will be jointly and severally owed by the proposing entities that cause such costs to be incurred.

(c)(1)(ii) All non-refundable deposits will be credited towards the actual costs incurred by the Transmission Provider as a result of the evaluation of a submitted project proposal.

(c)(1)(iii) Following the close of a proposal window but before the Transmission Provider incurs any third-party consultant work costs to evaluate a submitted project proposal, the Transmission Provider will issue to the proposing entity an initial invoice seeking payment of estimated costs to evaluate each submitted project proposal. The estimated costs will be determined by considering the: potential cost of consultant work, historical estimates for project proposals of similar scope, complexity and nature of the need, and/or technology and nature of the project proposal. The Transmission Provider may issue additional invoices to the proposing entity prior to the completion of the evaluation activities associated with a project proposal if the Transmission Provider receives updated actual cost information and/or upon consideration of the factors specified in this section.

(c)(1)(iv) At the completion of the evaluation activities associated with a project proposal, the Transmission Provider will reconcile the actual costs with monies paid and, to the extent necessary, issue either a final invoice or refund.

(c)(1)(v) The proposing party must pay any invoiced costs within fifteen (15) calendar days of the Transmission Provider sending the invoice to the proposing entity or its agent. For good cause shown, this fifteen (15) calendar day time period may be extended by the Transmission Provider. If the proposing entity fails to pay any invoice within the time period specified and/or extended by the Transmission Provider in accordance with this section, the proposing entity's pre-qualification status may be suspended and the proposing entity will be ineligible to be a Designated Entity for any projects that do not yet have an executed Designated Entity Agreement. Such a suspension and/or ineligibility will remain in place until the proposing entity pays in full all outstanding monies owed to the Transmission Provider as a result of the evaluation of the proposing entity's project proposal(s).

(c)(2) Proposals from all entities (both existing Transmission Owners and Nonincumbent Developers) that indicate the entity intends to be a Designated Entity, also must contain information to the extent not previously provided pursuant to the Operating Agreement, Schedule 6, section 1.5.8(a) demonstrating: (i) technical and engineering qualifications of the entity, its affiliate, partner, or parent company relevant to construction, operation, and maintenance of the proposed project; (ii) experience of the entity, its affiliate, partner, or parent company in developing, constructing, maintaining, and operating the type of transmission facilities contained in the project proposal; (iii) the emergency response capability of the entity that will be operating and maintaining the proposed project; (iv) evidence of transmission facilities the entity, its affiliate, partner, or parent company previously constructed, maintained, or operated; (v) the ability of the entity or its affiliate, partner, or parent company to obtain adequate financing relative to the proposed project, which may include a letter of intent from a financial institution approved by the Office of the Interconnection or such other evidence of the financial resources available to finance the construction, operation, and maintenance of the proposed project; (vi) the managerial ability of the entity, its affiliate, partner, or parent company to contain costs and adhere to construction schedules for the proposed project, including a description of verifiable past achievement of these goals; (vii) a demonstration of other advantages the entity may have to construct, operate, and maintain the proposed project, including any binding cost commitment proposal the entity may wish to submit; and (viii) any other information that may assist the Office of the Interconnection in evaluating the proposed project. To the extent that an entity submits a cost containment proposal the entity shall submit sufficient information for the Office of Interconnection to determine the binding nature of the proposal with respect to critical elements of project development. PJM may not alter the requirements for proposal submission to require the submission of a binding cost containment proposal, in whole or in part, or otherwsise mandate or unilaterally alter the terms of any such proposal or the requirements for proposal submission, the submission of any such proposals at all times remaining voluntary.

(c)(3) The Office of the Interconnection may request additional reports or information from an existing Transmission Owner or Nonincumbent Developers that it determines are reasonably necessary to evaluate its specific project proposal pursuant to the criteria set forth in the Operating Agreement, Schedule 6, sections 1.5.8(e) and 1.5.8(f). If the Office of the Interconnection determines any of the information provided in a proposal is deficient or it requires additional reports or information to analyze the submitted proposal, the Office of the Interconnection shall notify the proposing entity of such deficiency or request. Within 10 Business Days of receipt of the notification of deficiency and/or request for additional reports or information, or other reasonable time period as determined by the Office of the Interconnection, the proposing entity shall provide the necessary information.

(c)(4) The request for additional reports or information by the Office of the Interconnection pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c)(3) may be used only to clarify a proposed project as submitted. In response to the Office of the Information's request for additional reports or information, the proposing entity (whether an existing Transmission Owner or Nonincumbent Developer) may not submit a new project proposal or modifications to a proposed project once the proposal window is closed. In the event that the proposing entity fails to timely cure the deficiency or provide the requested reports or information regarding a proposed project, the proposed project will not be considered for inclusion in the recommended plan.

(c)(5) Within 30 days of the closing of the proposal window, the Office of the Interconnection may notify the proposing entity that additional per project fees are required if the Office of the Interconnection determines the proposing entity's submittal includes multiple project proposals. Within 10 Business Days of receipt of the notification of insufficient funds by the Office of the Interconnection, the proposing entity shall submit such funds or notify the

Office of the Interconnection which of the project proposals the Office of the Interconnection should evaluate based on the fee(s) submitted.

(d) **Posting and Review of Projects**. Following the close of a proposal window, the Office of the Interconnection shall post on the PJM website all proposals submitted pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c). All proposals addressing state Public Policy Requirements shall be provided to the applicable states in the PJM Region for review and consideration as a Supplemental Project or a state public policy project consistent with the Operating Agreement, Schedule 6, section 1.5.9. The Office of the Interconnection shall review all proposals submitted during a proposal window and determine and present to the Transmission Expansion Advisory Committee the proposals that merit further consideration for inclusion in the recommended plan. In making this determination, the Office of the Interconnection shall consider the criteria set forth in the Operating Agreement, Schedule 6, sections 1.5.8(e) and 1.5.8(f). The Office of the Interconnection shall post on the PJM website and present to the Transmission Expansion Advisory Committee for review and comment descriptions of the proposed enhancements and expansions, including any proposed Supplemental Projects or state public policy projects identified by a state(s). Based on review and comment by the Transmission Expansion Advisory Committee, the Office of the Interconnection may, if necessary conduct further study and evaluation. The Office of the Interconnection shall post on the PJM website and present to the Transmission Expansion Advisory Committee the revised enhancements and expansions for review and comment. After consultation with the Transmission Expansion Advisory Committee, the Office of the Interconnection shall determine the more efficient or cost-effective transmission enhancements and expansions for inclusion in the recommended plan consistent with this Operating Agreement, Schedule 6.

(e) **Criteria for Considering Inclusion of a Project in the Recommended Plan**. In determining whether a Short-term Project or Long-lead Project proposed pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c), individually or in combination with other Short-term Projects or Long-lead Projects, is the more efficient or cost-effective solution and therefore should be included in the recommended plan, the Office of the Interconnection, taking into account sensitivity studies and scenario analyses considered pursuant to the Operating Agreement, Schedule 6, section 1.5.3, shall consider the following criteria, to the extent applicable: (i) the extent to which a Short-term Project or Long-lead Project would address and solve the posted violation, system condition, or economic constraint; (ii) the extent to which the relative benefits of the project meets a Benefit/Cost Ratio Threshold of at least 1.25:1 as calculated pursuant to the Operating Agreement, Schedule 6, section 1.5.7(d); (iii) the extent to which the Short-term Project or Long-lead Project would have secondary benefits, such as addressing additional or other system reliability, operational performance, economic efficiency issues or federal Public Policy Requirements or state Public Policy Requirements identified by the states in the PJM Region; and (iv) the ability to timely complete the project, and project development feasibility; and (v) other factors such as cost-effectiveness, including the quality and effectiveness of any voluntary-submitted binding cost commitment proposal related to Transmission Facilities which caps project construction costs (either in whole or in part), project total return on equity (including incentive adders), or capital structure. In scrutinizing the cost of project proposals, the Office of Interconnection shall determine for each project finalist's proposal, including any Transmission Owner Upgrades, the comparative risks to be borne by ratepayers as a result of the proposal's binding cost commitment or the use of non-binding cost estimates. Such comparative analysis shall detail, in a clear and transparent manner, the method by which the Office of Interconnection scrutinized the cost and overall cost-effectiveness of each finalist's proposal, including any binding cost commitments. Such comparative analysis shall be presented to the TEAC for review and comment. In evaluating any cost, ROE and/or capital structure proposal, PJM is not making a determination that the cost, ROE or capital structure results in just and reasonable rates, which shall be addressed in the required rate filing with the FERC. Stakeholders seeking to dispute a particular ROE analysis utilized in the selection process may address such disputes with the Designated Entity in the applicable rate proceeding where the Designated Entity seeks approval of such rates from the Commission. PJM may modify the technical specifications of a proposal, as outlined in the PJM Manuals, which may result in the modified proposal being determined to be the more efficient or cost-effective proposal for recommendation to the PJM Board. Neither PJM, the Designated Entity nor any stakeholders are waiving any of their respective FPA section 205 or 206 rights through this process. Challenges to the Designated Entity Agreements are subject to the just and reasonable standard.

(f) **Entity-Specific Criteria Considered in Determining the Designated Entity for a Project**. In determining whether the entity proposing a Short-term Project, Long-lead Project or Economic-based Enhancement or Expansion recommended for inclusion in the plan shall be the Designated Entity, the Office of the Interconnection shall consider: (i) whether in its proposal, the entity indicated its intent to be the Designated Entity; (ii) whether the entity is pre-qualified to be a Designated Entity pursuant to Operating Agreement, Schedule 6, section 1.5.8(a); (iii) information provided either in the proposing entity's submission pursuant to the Operating Agreement, Schedule 6, section 1.5.8(a) or 1.5.8(c)(2) relative to the specific proposed project that demonstrates: (1) the technical and engineering experience of the entity or its affiliate, partner, or parent company, including its previous record regarding construction, maintenance, and operation of transmission facilities relative to the project proposed; (2) ability of the entity or its affiliate, partner, or parent company to construct, maintain, and operate transmission facilities, as proposed, (3) capability of the entity to adhere to standardized construction, maintenance, and operating practices, including the capability for emergency response and restoration of damaged equipment; (4) experience of the entity in acquiring rights of way; (5) evidence of the ability of the entity, its affiliate, partner, or parent company to secure a financial commitment from an approved financial institution(s) agreeing to finance the construction, operation, and maintenance of the project, if it is accepted into the recommended plan; and (iv) any other factors that may be relevant to the proposed project, including but not limited to whether the proposal includes the entity's previously designated project(s) included in the plan.

(g) **Procedures if No Long-lead Project or Economic-based Enhancement or Expansion Proposal is Determined to be the More Efficient or Cost-Effective Solution**. If the Office of the Interconnection determines that none of the proposed Long-lead Projects received during the Long-lead Project proposal window would be the more efficient or cost-effective solution to resolve a posted violation, or system condition, the Office of the Interconnection may re-evaluate and re-post on the PJM website the unresolved violations, or system conditions pursuant to the Operating Agreement, Schedule 6, section 1.5.8(b), provided such re-evaluation and re-posting would not affect the ability of the Office of the Interconnection to timely address the identified reliability need. In the event that re-posting and conducting such re-evaluation would prevent the Office of the Interconnection from timely addressing the existing and projected limitations on the Transmission System that give rise to the need for an enhancement or expansion, the Office of the Interconnection shall propose a project to solve the posted violation, or system condition for inclusion in the recommended plan and shall present such project to the Transmission Expansion Advisory Committee for review and comment. The Transmission Owner(s) in the Zone(s) where the project is to be located shall be the Designated Entity(ies) for such project. In determining whether there is insufficient time for re-posting and re-evaluation, the Office of the Interconnection shall develop and post on the PJM website a transmission solution construction timeline for input and review by the Transmission Expansion Advisory Committee that will include factors such as, but not limited to: (i) deadlines for obtaining regulatory approvals, (ii) dates by which long lead equipment should be acquired, (iii) the time necessary to complete a proposed solution to meet the required in-service date, and (iv) other time-based factors impacting the feasibility of achieving the required in-service date. Based on input from the Transmission Expansion Advisory Committee and the time frames set forth in the construction timeline, the Office of the Interconnection shall determine whether there is sufficient time to conduct a re-evaluation and re-post and timely address the existing and projected limitations on the Transmission System that give rise to the need for an enhancement or expansion. To the extent that an economic constraint remains unaddressed, the economic constraint will be re-evaluated and re-posted.

(h) **Procedures if No Short-term Project Proposal is Determined to be the More Efficient or Cost-Effective Solution**. If the Office of the Interconnection determines that none of the proposed Short-term Projects received during a Short-term Project proposal window would be the more efficient or cost-effective solution to resolve a posted violation or system condition, the Office of the Interconnection shall propose a Short-term Project to solve the posted violation, or system condition for inclusion in the recommended plan and will present such Short-term Project to the Transmission Expansion Advisory Committee for review and comment. The Transmission Owner(s) in the Zone(s) where the Short-term Project is to be located shall be the Designated Entity(ies) for the Project.

(i) **Notification of Designated Entity**. Within 15 Business Days of PJM Board approval of the Regional Transmission Expansion Plan, the Office of the Interconnection shall notify the entities that have been designated as the Designated Entities for projects included in the Regional Transmission Expansion Plan of such designations. In such notices, the Office of the Interconnection shall provide: (i) the needed in-service date of the project; and (ii) a date by which all necessary state approvals should be obtained to timely meet the needed in-service date of the project. The Office of the Interconnection shall use these dates as part of its on-going monitoring of the progress of the project to ensure that the project is completed by its needed in-service date.

(j) **Acceptance of Designation**. Within 30 days of receiving notification of its designation as a Designated Entity, the existing Transmission Owner or Nonincumbent Developer shall notify the Office of the Interconnection of its acceptance of such designation and submit to the Office of the Interconnection a development schedule, which shall include, but not be limited to, milestones necessary to develop and construct the project to achieve the required in-service date, including milestone dates for obtaining all necessary authorizations and approvals, including but not limited to, state approvals. For good cause shown, the Office of the Interconnection may extend the deadline for submitting the development schedule. The Office of the Interconnection then shall review the development schedule and within 15 days or other reasonable time as required by the Office of the Interconnection: (i) notify the Designated Entity of any issues regarding the development schedule identified by the Office of the Interconnection that may need to be addressed to ensure that the project meets its needed in-service date; and (ii) tender to the Designated Entity an executable Designated Entity Agreement setting forth the rights and obligations of the parties. To retain its status as a Designated Entity, within 60 days of receiving an executable Designated Entity Agreement (or other such period as mutually agreed upon by the Office of the Interconnection and the Designated Entity), the Designated Entity (both existing Transmission Owners and Nonincumbent Developers) shall submit to the Office of the Interconnection a letter of credit as determined by the Office of Interconnection to cover the incremental costs of construction resulting from reassignment of the project, and return to the Office of the Interconnection an executed Designated Entity Agreement containing a mutually agreed upon development schedule. Notwithstanding the foregoing, a Designated Entity is not required to provide a letter of credit to the extent (i) the Designated Entity is a Transmission Owner and (ii) the project was selected (A) pursuant to Operating Agreement, Schedule 6, sections 1.5.8(g), 1.5.8(h), or 1.5.8(m)(1); or (B) through a proposal window conducted pursuant to Operating Agreement, Schedule 6, section 1.5.8(c) in which no Nonincumbent Developer submitted a competing proposal to address the need identified by the Office of the Interconnection. In the alternative, the Designated Entity may request dispute resolution pursuant to the Operating Agreement, Schedule 5, or request that the Designated Entity Agreement be filed unexecuted with the Commission.

(k) **Failure of Designated Entity to Meet Milestones**. In the event the Designated Entity fails to comply with one or more of the requirements of the Operating Agreement, Schedule 6, section 1.5.8(j); or fails to meet a milestone in the development schedule set forth in the Designated Entity Agreement that causes a delay of the project's in-service date, the Office of the Interconnection shall re-evaluate the need for the Short-term Project or Long-lead Project, and based on that re-evaluation may: (i) retain the Short-term Project or Long-lead Project in the Regional Transmission Expansion Plan; (ii) remove the Short-term Project or Long-lead Project from the Regional Transmission Expansion Plan; or (iii) include an alternative solution in the Regional Transmission Expansion Plan. If the Office of the Interconnection retains the Short-term or Long-term Project in the Regional Transmission Expansion Plan, it shall determine whether the delay is beyond the Designated Entity's control and whether to retain the Designated Entity or to designate the Transmission Owner(s) in the Zone(s) where the project is located as Designated Entity(ies) for the Short-term Project or Long-lead Project. If the Designated Entity is the Transmission Owner(s) in the Zone(s) where the project is located, the Office of the Interconnection shall seek recourse through the Consolidated Transmission Owners Agreement or FERC, as appropriate. Any modifications to the Regional Transmission Expansion Plan pursuant to this section shall be presented to the Transmission Expansion Advisory Committee for review and comment and approved by the PJM Board.

(l) **Transmission Owners Required to be the Designated Entity**. Notwithstanding anything to the contrary in this Operating Agreement, Schedule 6, section 1.5.8, in all events, the Transmission Owner(s) in whose Zone(s) a project proposed pursuant to the Operating

Agreement, Schedule 6, section 1.5.8(c) is to be located will be the Designated Entity for the project, when the Short-term Project or Long-lead Project is: (i) a Transmission Owner Upgrade, including any upgrade using an alternative transmission technology; (ii) located solely within a Transmission Owner's Zone and the costs of the project are allocated solely to the Transmission Owner's Zone; (iii) located solely within a Transmission Owner's Zone and is not selected in the Regional Transmission Expansion Plan for purposes of cost allocation; or (iv) proposed to be located on a Transmission Owner's existing right of way and the project would alter the Transmission Owner's use and control of its existing right of way under state law. Transmission Owner shall be the Designated Entity when required by state law, regulation or administrative agency order with regard to enhancements or expansions or portions of such enhancements or expansions located within that state.

(m) **Immediate-need Reliability Projects**:

(m)(1) Pursuant to the expansion planning process set forth in Operating Agreement, Schedule 6, sections 1.5.1 through 1.5.6, the Office of the Interconnection shall identify immediate reliability needs that must be addressed within three years or less. For those immediate reliability needs for which PJM determines a proposal window may not be feasible, PJM shall identify and post such immediate need reliability criteria violations and system conditions for review and comment by the Transmission Expansion Advisory Committee and other stakeholders. Following review and comment, the Office of the Interconnection shall develop Immediate-need Reliability Projects for which a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(m)(2) is infeasible. The Office of the Interconnection shall consider the following factors in determining the infeasibility of such a proposal window: (i) nature of the reliability criteria violation; (ii) nature and type of potential solution required; and (iii) projected construction time for a potential solution to the type of reliability criteria violation to be addressed. The Office of the Interconnection shall post on the PJM website for review and comment by the Transmission Expansion Advisory Committee and other stakeholders descriptions of the Immediate-need Reliability Projects for which a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(m)(2) is infeasible. Stakeholders shall be afforded no less than ten days to review Immediate-need Reliability Project materials prior to providing comments at stakeholder meetings. However, PJM may review Immediate-need Reliability Project materials with stakeholders without the requisite ten-day notice so long as: (i) stakeholders do not object to reviewing the materials or (ii) PJM identifies in its posting to the meeting materials extenuating circumstances identified by PJM that require review of the materials at the stakeholder meeting. The descriptions shall include an explanation of the decision to designate the Transmission Owner as the Designated Entity for the Immediate-need Reliability Project rather than conducting a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(m)(2), including an explanation of the time-sensitive need for the Immediate-need Reliability Project, other transmission and non-transmission options that were considered but concluded would not sufficiently address the immediate reliability need, the circumstances that generated the immediate reliability need, and why the immediate reliability need was not identified earlier. After the descriptions are posted on the PJM website, stakeholders shall have reasonable opportunity to provide comments to the Office of the Interconnection. All comments received by the Office of the Interconnection shall be publicly available on the PJM website. Based on the comments received from stakeholders and the review by Transmission Expansion Advisory Committee, the Office of the Interconnection shall, if necessary, conduct further study and evaluation and post a revised recommended plan for review and comment by the Transmission Expansion Advisory Committee. The PJM Board shall approve the Immediate-need Reliability Projects for inclusion in the recommended plan. In January of each year, the Office of the Interconnection shall post on the PJM website and file with the Commission for informational purposes a list of the Immediate-need Reliability Projects for which an existing Transmission Owner was designated in the prior year as the Designated Entity in accordance with this Operating Agreement, Schedule 6, section 1.5.8(m)(1). The list shall include the need-by date of Immediate-need Reliability Project and the date the Transmission Owner actually energized the Immediate-need Reliability Project.

(m)(2) If, in the judgment of the Office of the Interconnection, there is sufficient time for the Office of the Interconnection to accept proposals in a shortened proposal window for Immediate-need Reliability Projects, the Office of the Interconnection shall post on the PJM website the violations and system conditions that could be addressed by Immediate-need Reliability Project proposals, including an explanation of the time-sensitive need for an Immediate-need Reliability Project and provide notice to stakeholders of a shortened proposal window. Proposals must contain the information required in the Operating Agreement, Schedule 6, section 1.5.8(c) and, if the entity is seeking to be the Designated Entity, such entity must have pre-qualified to be a Designated Entity pursuant to the Operating Agreement, Schedule 6, section 1.5.8(a). In determining the more efficient or cost-effective proposed Immediate-need Reliability Project for inclusion in the recommended plan, the Office of the Interconnection shall consider the extent to which the proposed Immediate-need Reliability Project, individually or in combination with other Immediate-need Reliability Projects, would address and solve the posted violations or system conditions and other factors such as cost-effectiveness, the ability of the entity to timely complete the project, and project development feasibility in light of the required need. After PJM Board approval, the Office of the Interconnection, in accordance with the Operating Agreement, Schedule 6, section 1.5.8(i), shall notify the entities that have been designated as Designated Entities for Immediate-need Projects included in the Regional Transmission Expansion Plan of such designations. Designated Entities shall accept such designations in accordance with the Operating Agreement, Schedule 6, section 1.5.8(j). In the event that (i) the Office of the Interconnection determines that no proposal resolves a posted violation or system condition; (ii) the proposing entity is not selected to be the Designated Entity; (iii) an entity does not accept the designation as a Designated Entity; or (iv) the Designated Entity fails to meet milestones that would delay the in-service date of the Immediate-need Reliability Project, the Office of the Interconnection shall develop and recommend an Immediate-need Reliability Project to solve the violation or system needs in accordance with the Operating Agreement, Schedule 6, section 1.5.8(m)(1).

(n) **Reliability Violations on Transmission Facilities Below 200 kV.** Pursuant to the expansion planning process set forth in the Operating Agreement, Schedule 6, sections 1.5.1 through 1.5.6, the Office of the Interconnection shall identify reliability violations on facilities below 200 kV. The Office of the Interconnection shall not post such a violation pursuant to the Operating Agreement, Schedule 6, section 1.5.8(b) for inclusion in a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c) unless the identified violation(s) satisfies one of the following exceptions: (i) the reliability violations are thermal overload violations identified on multiple transmission lines and/or transformers rated below 200 kV that are impacted by a common contingent element, such that multiple reliability violations could be addressed by one or more solutions, including but not limited to a higher voltage solution; or (ii) the reliability violations are thermal overload violations identified on multiple transmission lines and/or transformers rated below 200 kV and the Office of the Interconnection determines that given the location and electrical features of the violations one or more solutions could potentially address or reduce the flow on multiple lower voltage facilities, thereby eliminating the multiple reliability violations. If the reliability violation is identified on multiple facilities rated below 200 kV that are determined by the Office of the Interconnection to meet one of the two exceptions stated above, the Office of the Interconnection shall post on the PJM website the reliability violations to be included in a proposal window consistent with the Operating Agreement, Schedule 6, section 1.5.8(c). If the Office of the Interconnection determines that the identified reliability violations do not satisfy either of the two exceptions stated above, the Office of the Interconnection shall develop a solution to address the reliability violation on below 200 kV Transmission Facilities that will not be included in a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c). The Office of Interconnection shall post on the PJM website for review and comment by the Transmission Expansion Advisory Committee and other stakeholders descriptions of the below 200 kV reliability violations that will not be included in a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c). The descriptions shall include an explanation of the decision to not include the below 200 kV reliability violation(s) in Operating Agreement, Schedule 6, section 1.5.8(c) proposal window, a description of the facility on which the violation(s) is found, the Zone in which the facility is located, and notice that such construction responsibility for and ownership of the project that resolves such below 200 kV reliability violation will be designated to the incumbent Transmission Owner. After the descriptions are posted on the PJM website, stakeholders shall have reasonable opportunity to provide comments for consideration by the Office of the Interconnection. With the exception of Immediate-need Reliability Projects under the Operating Agreement, Schedule 6, section 1.5.8(m), PJM will not select an above 200 kV solution for inclusion in the recommended plan that would address a reliability violation on a below 200 kV transmission facility without posting the violation for inclusion in a proposal window consistent with the Operating Agreement, Schedule 6, section 1.5.8(c). All written comments received by the Office of the Interconnection shall be publicly available on the PJM website.

(o) **[Reserved]**

(p) **Thermal Reliability Violations on Transmission Substation Equipment.** Pursuant to the regional transmission expansion planning process set forth in the Operating Agreement, Schedule 6, sections 1.5.1 through 1.5.6, the Office of the Interconnection shall identify thermal reliability violations on existing transmission substation equipment. The Office of the Interconnection shall not post such thermal reliability violations pursuant to the Operating Agreement, Schedule 6, section 1.5.8(b) for inclusion in a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c) if the Office of the Interconnection determines that the reliability violations would be more efficiently addressed by an upgrade to replace in kind transmission substation equipment with higher rated equipment, excluding power transmission transformers, but including station service transformers and instrument transformers. If the Office of the Interconnection determines that the reliability violation does not meet the exemption stated above, the Office of the Interconnection shall post on the PJM website the reliability violations to be included in a proposal window consistent with the Operating Agreement, Schedule 6, section 1.5.8(c). If the Office of the Interconnection determines that the identified thermal reliability violations satisfy the above exemption to the proposal window process, the Office of the Interconnection shall post on the PJM website for review and comment by the Transmission Expansion Advisory Committee and other stakeholders descriptions of the transmission substation equipment thermal reliability violations that will not be included in a proposal window pursuant to Operating Agreement, Schedule 6, section 1.5.8(c). The descriptions shall include an explanation of the decision to not include the transmission substation equipment thermal reliability violation(s) in Operating Agreement, Schedule 6, section 1.5.8(c) proposal window, a description of the facility on which the thermal violation(s) is found, the Zone in which the facility is located, and notice that such construction responsibility for and ownership of the project that resolves such transmission substation equipment thermal violations will be designated to the incumbent Transmission Owner. After the descriptions are posted on the PJM website, stakeholders shall have reasonable opportunity to provide comments for consideration by the Office of the Interconnection. All written comments received by the Office of the Interconnection shall be publicly available on the PJM website.

(q) **Interconnection-Related Transmission Enhancements or Expansions Requiring Network Upgrades.** Pursuant to the regional transmission expansion process set forth in the Operating Agreement, Schedule 6, sections 1.5.1 through 1.5.6, the Office of Interconnection shall evaluate for selection transmission enhancements or expansions to address interconnection-related needs that have been identified as requiring Network Upgrades where (i) the Office of Interconnection has identified the interconnection-related transmission need in System Impact Studies in at least two interconnection Cycles conducted under Tariff, Part VIII; (ii) the identified Network Upgrade has a voltage of at least 200 kV and an estimated cost of at least $30 million; (iii) the New Service Requests associated with the identified interconnection-related transmission need are withdrawn, and no more than five calendar years have passed between the date of the earlier New Service Request and the later New Service Request; (iv) the identified Network Upgrade is not included in an executed or unexecuted Generator Interconnection Agreement; and (v) the withdrawn New Service Requests associated with the identified interconnection-related transmission need occurred no more than seven years prior to the commencement date of initiation of the current enhancement and expansion study process as set forth in Operating Agreement, Schedule 6, section 1.5.1. The Office of Interconnection need not evaluate an interconnection-related transmission need that has been evaluated in a previous enhancement and expansion study process. The Office of the Interconnection shall post on the PJM website all interconnection-related transmission needs that meet the criteria of this section to be included in a proposal window consistent with the Operating Agreement, Schedule 6, section 1.5.8(c).

1.5.9 State Agreement Approach.

(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. As determined by the authorized state governmental entities, such transmission enhancements or expansions may be included in the recommended plan, either as a (i) Supplemental Project or (ii) state public policy project, which is a transmission enhancement or expansion, the costs of which will be recovered pursuant to a FERC-accepted cost allocation proposed by agreement of one or more states and voluntarily agreed to by those state(s). All costs related to a state public policy project or Supplemental Project included in the Regional Transmission Expansion Plan to address state Public Policy Requirements pursuant to this Section shall be recovered from customers in a state(s) in the PJM Region that agrees to be responsible for the projects. No such costs shall be recovered from customers in a state that did not agree to be responsible for such cost allocation. A state public policy project will be included in the Regional Transmission Expansion Plan for cost allocation purposes only if there is an associated FERC-accepted allocation permitting recovery of the costs of the state public policy project consistent with this Section.

(b) Subject to any designation reserved for Transmission Owners in the Operating Agreement, Schedule 6, section 1.5.8(l), the state(s) responsible for cost allocation for a Supplemental Project or a state public policy project in accordance with the Operating Agreement, Schedule 6, section 1.5.9(a) may submit to the Office of the Interconnection the entity(ies) to construct, own, operate and maintain the state public policy project from a list of entities supplied by the Office of the Interconnection that pre-qualified to be Designated Entities pursuant to the Operating Agreement, Schedule 6, section 1.5.8(a).

1.5.10 Multi-Driver Project.

(a) When a proposal submitted by an existing Transmission Owner or Nonincumbent Developer pursuant to Operating Agreement, Schedule 6, section 1.5.8(c) meets the definition of a Multi-Driver Project and is designated to be included in the Regional Transmission Expansion Plan for purposes of cost allocation, the Office of the Interconnection shall designate the Designated Entity for the project as follows: (i) if the Multi-Driver Project does not contain a state Public Policy Requirement component, the Office of the Interconnection shall designate the Designated Entity pursuant to the criteria in the Operating Agreement, Schedule 6, section 1.5.8; or (ii) if the Multi-Driver Project contains a state Public Policy Requirement component, the Office of the Interconnection shall evaluate potential Designated Entity candidates based on the criteria in the Operating Agreement, Schedule 6, section 1.5.8, and provide its evaluation to and elicit feedback from the sponsoring state governmental entities responsible for allocation of all costs of the proposed state Public Policy Requirement component ("state governmental entity(ies)") regarding its evaluation. Based on its evaluation of the Operating Agreement, Schedule 6, section 1.5.8 criteria and consideration of the feedback from the sponsoring state governmental entity(ies), the Office of the Interconnection shall designate the Designated Entity for the Multi-Driver Project and notify such entity consistent with the Operating Agreement, Schedule 6, section 1.5.8(i). A Multi-Driver Project may be based on proposals that consist of (1) newly proposed transmission enhancements or expansions; (2) additions to, or modifications of, transmission enhancements or expansions already selected for inclusion in the Regional Transmission Expansion Plan; and/or (3) one or more transmission enhancements or expansions already selected for inclusion in the Regional Transmission Expansion Plan.

(b) A Multi-Driver Project may contain an enhancement or expansion that addresses a state Public Policy Requirement component only if it meets the requirements set forth in the

Operating Agreement, Schedule 6, section 1.5.9(a) and its cost allocations are established consistent with the Tariff, Schedule 12, section (b)(xii)(B).

(c) If a state governmental entity(ies) desires to include a Public Policy Requirement component after an enhancement or expansion has been included in the Regional Transmission Expansion Plan, the Office of the Interconnection may re-evaluate the relevant reliability-based enhancement or expansion, Economic-based Enhancement or Expansion, or Multi-Driver Project to determine whether adding the state-sponsored Public Policy Requirement component would create a more cost effective or efficient solution to system conditions. If the Office of the Interconnection determines that adding the state-sponsored Public Policy Requirement component to an enhancement or expansion already included in the Regional Transmission Expansion Plan would result in a more cost effective or efficient solution, the state-sponsored Public Policy Requirement component may be included in the relevant enhancement or expansion, provided all of the requirements of the Operating Agreement, Schedule 6, section 1.5.10(b) are met, and cost allocations are established consistent with the Tariff, Schedule 12, section (b)(xii)(B).

(d) If, subsequent to the inclusion in the Regional Transmission Expansion Plan of a Multi-Driver Project that contains a state Public Policy Requirement component, a state governmental entity(ies) withdraws its support of the Public Policy Requirement component of a Multi-Driver Project, then: (i) the Office of the Interconnection shall re-evaluate the need for the remaining components of the Multi-Driver Project without the state Public Policy Requirement component, remove the Multi-Driver Project from the Regional Transmission Expansion Plan, or replace the Multi-Driver Project with an enhancement or expansion that addresses remaining reliability or economic system needs; (ii) if the Multi-Driver Project is retained in the Regional Transmission Expansion Plan without the state Public Policy Requirement component, the costs of the remaining components will be allocated in accordance with the Tariff, Schedule 12; (iii) if more than one state is responsible for the costs apportioned to the state Public Policy Requirement component of the Multi-Driver Project, the remaining state governmental entity(ies) shall have the option to continue supporting the state Public Policy component of the Multi-Driver Project and if the remaining state governmental entity(ies) choose this option, the apportionment of the state Public Policy Requirement component will remain in place and the remaining state governmental entity(ies) shall agree upon their respective apportionments; (iv) if a Multi-Driver Project must be retained in the Regional Transmission Expansion Plan and completed with the State Public Policy component, the state Public Policy Requirement apportionment will remain in place and the withdrawing state governmental entity(ies) shall continue to be responsible for its/their share of the FERC-accepted cost allocations as filed pursuant to the Tariff, Schedule 12, section (b)(xii)(B).

(e) The actual costs of a Multi-Driver Project shall be apportioned to the different components (reliability-based enhancement or expansion, Economic-based Enhancement or Expansion and/or Public Policy Requirement) based on the initial estimated costs of the Multi-Driver Project in accordance with the methodology set forth in the Tariff, Schedule 12.

(f) The benefit metric calculation used for evaluating the market efficiency component of a Multi-Driver Project will be based on the final voltage of the Multi-Driver

Project using the Benefit/Cost Ratio calculation set forth in the Operating Agreement, Schedule 6, section 1.5.7(d) where the Cost component of the calculation is the present value of the estimated cost of the enhancement apportioned to the market efficiency component of the Multi-Driver Project for each of the first 15 years of the life of the enhancement or expansion.

(g) Except as provided to the contrary in this Operating Agreement, Schedule 6, section 1.5.10 and Operating Agreement, Schedule 6, section 1.5.8 applies to Multi-Driver Projects.

(h) The Office of the Interconnection shall determine whether a proposal(s) meets the definition of a Multi-Driver Project by identifying a more efficient or cost effective solution that uses one of the following methods: (i) combining separate solutions that address reliability, economics and/or public policy into a single transmission enhancement or expansion that incorporates separate drivers into one Multi-Driver Project ("Proportional Multi-Driver Method"); or (ii) expanding or enhancing a proposed single driver solution to include one or more additional component(s) to address a combination of reliability, economic and/or public policy drivers ("Incremental Multi-Driver Method").

(i) In determining whether a Multi-Driver Project may be designated to more than one entity, PJM shall consider whether: (i) the project consists of separable transmission elements, which are physically discrete transmission components, such as, but not limited to, a transformer, static var compensator or definable linear segment of a transmission line, that can be designated individually to a Designated Entity to construct and own and/or finance; and (ii) each entity satisfies the criteria set forth in the Operating Agreement, Schedule 6, section 1.5.8(f). Separable transmission elements that qualify as Transmission Owner Upgrades shall be designated to the Transmission Owner in the Zone in which the facility will be located.

Attachment C

Revisions to the
PJM Operating Agreement

Proposed Definitions
and Schedule 6, section 1.5

(Clean Format)

Definitions A - B

30-minute Reserve:

“30-minute Reserve” shall mean the reserve capability of generation resources that can be converted fully into energy or Economic Load Response Participant resources whose demand can be reduced within 30 minutes of a request from the Office of the Interconnection dispatcher, and is comprised of Synchronized Reserve, Non-Synchronized Reserve and Secondary Reserve.

30-minute Reserve Requirement:

“30-minute Reserve Requirement” shall mean the megawatts required to be maintained in a Reserve Zone or Reserve Sub-zone, as Secondary Reserve, absent any increase to account for additional reserves scheduled to address operational uncertainty. The 30-minute Reserve Requirement is calculated in accordance with the PJM Manuals. The requirement can be satisfied by any combination of Synchronized Reserve, Non Synchronized Reserve or Secondary Reserve resources.

Acceleration Request:

“Acceleration Request” shall mean a request pursuant to Operating Agreement, Schedule 1, section 1.9.4A and the parallel provisions of Tariff, Attachment K-Appendix, to accelerate or reschedule a transmission outage scheduled pursuant to Operating Agreement, Schedule 1, section 1.9.2 or Operating Agreement, Schedule 1, section 1.9.4 and the parallel provisions of Tariff, Attachment K-Appendix, section 1.9.2 and Tariff, Attachment K-Appendix, section 1.9.4.

Act:

“Act” shall mean the Delaware Limited Liability Company Act, Title 6, §§ 18-101 to 18-1109 of the Delaware Code.

Active and Significant Business Interest:

“Active and Significant Business Interest” is a term that shall be used to assess the scope of a Member’s PJM membership and shall be based on a Member’s activity in the PJM RTO and/or Interchange Energy Markets. A Member’s Active and Significant Business Interest shall: 1) be determined relative to the scope of the Member’s PJM membership and activity in the PJM RTO and/or Interchange Energy Markets considering, among other things, the Member’s public statements and/or regulatory filings regarding its PJM activities; and 2) reflect a substantial contributor to the Member’s recent market activity, revenues, costs, investment, and/or earnings when considering the Member and its corporate affiliates’ interests within the PJM footprint.

Additional LT Needs:

“Additional LT Needs” shall mean the Long-Term Transmission Needs identified by the Office of the Interconnection in accordance with Operating Agreement, Schedule 6-C, section 1.6.2(b).

Affected Member:

"Affected Member" shall mean a Member of PJM which as a result of its participation in PJM's markets or its membership in PJM provided confidential information to PJM, which confidential information is requested by, or is disclosed to an Authorized Person under a Non-Disclosure Agreement.

Affiliate:

"Affiliate" shall mean any two or more entities, one of which Controls the other or that are under common Control. "Control," as that term is used in this definition, shall mean the possession, directly or indirectly, of the power to direct the management or policies of an entity. Ownership of publicly-traded equity securities of another entity shall not result in Control or affiliation for purposes of the Tariff or Operating Agreement if the securities are held as an investment, the holder owns (in its name or via intermediaries) less than 10 percent (10%) of the outstanding securities of the entity, the holder does not have representation on the entity's board of directors (or equivalent managing entity) or vice versa, and the holder does not in fact exercise influence over day-to-day management decisions. Unless the contrary is demonstrated to the satisfaction of the Members Committee, Control shall be presumed to arise from the ownership of or the power to vote, directly or indirectly, ten percent or more of the voting securities of such entity.

Agreement, Operating Agreement of the PJM Interconnection, L.L.C., Operating Agreement or PJM Operating Agreement:

"Agreement," "Operating Agreement of the PJM Interconnection, L.L.C.," "Operating Agreement" or "PJM Operating Agreement" shall mean this Amended and Restated Operating Agreement of PJM Interconnection, L.L.C. dated as of April 1, 1997 and as amended and restated as of June 2, 1997, including all Schedules, Exhibits, Appendices, addenda or supplements thereto, as amended from time to time thereafter, among the Members of PJM Interconnection L.L.C., on file with the Commission.

All-in-One Plan:

"All-in-One Plan" shall mean a set of Long-Term Transmission Projects addressing Core LT Needs and Additional LT Needs holistically, as determined in accordance with Operating Agreement, Schedule 6-C, section 1.11.

All-in-One Plan Incremental Benefit-to-Cost-Ratio:

"All-in-One Plan Incremental Benefit-to-Cost-Ratio" shall mean the minimum criteria used to identify Long-Term Transmission Projects to address Additional LT Needs and be identified for inclusion in the All-in-One Plan determined in accordance with Operating Agreement, Schedule 6-C, section 1.11.

Annual Meeting of the Members:

"Annual Meeting of the Members" shall mean the meeting specified in Operating Agreement, section 8.3.1.

Applicable Regional Entity:

"Applicable Regional Entity" shall mean the Regional Entity for the region in which a Network Customer, Transmission Customer, New Service Customer, or Transmission Owner operates.

Applicable Standards:

"Applicable Standards" shall mean the requirements and guidelines of NERC, the Applicable Regional Entity, and the Control Area in which the Customer Facility is electrically located; the PJM Manuals; and Applicable Technical Requirements and Standards.

Associate Member:

"Associate Member" shall mean an entity that satifies the requirements of Operating Agreement, section 11.7.

Auction Revenue Rights:

"Auction Revenue Rights" or "ARRs" shall mean the right to receive the revenue from the Financial Transmission Right auction, as further described in Operating Agreement, Schedule 1, section 7.4 and the parallel provisions of Tariff, Attachment K-Appendix, section 7.4.

Auction Revenue Rights Credits:

"Auction Revenue Rights Credits" shall mean the allocated share of total FTR auction revenues or costs credited to each holder of Auction Revenue Rights, calculated and allocated as specified in Operating Agreement, Schedule 1, section 7.4.3, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.4.3.

Authorized Commission:

"Authorized Commission" shall mean (i) a State public utility commission that regulates the distribution or supply of electricity to retail customers and is legally charged with monitoring the operation of wholesale or retail markets serving retail suppliers or customers within its State or (ii) an association or organization comprised exclusively of State public utility commissions described in the immediately preceding clause (i).

Authorized Person:

"Authorized Person" shall have the meaning set forth in Operating Agreement, section 18.17.4.

Balancing Congestion Charges:

"Balancing Congestion Charges" shall be equal to the sum of congestion charges collected from Market Participants that are purchasing energy in the Real-time Energy Market minus [the sum of congestion charges paid to Market Participants that are selling energy in the Real-time Energy Market plus any congestion charges calculated pursuant to the Joint Operating Agreement between the Midcontinent Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C. (PJM Rate Schedule FERC No. 38), plus any congestion charges calculated pursuant to the Joint Operating Agreement Among and Between New York Independent System Operator Inc. and PJM Interconnection, L.L.C. (PJM Rate Schedule FERC No. 45), plus any congestion charges calculated pursuant to agreements between the Office of the Interconnection and other entities, plus any charges or credits calculated pursuant to Operating Agreement, Schedule 1, section 3.8, and the parallel provisions of Tariff, Attachment K-Appendix, section 3.8, as applicable)].

Batch Load Economic Load Response Participant Resource:

"Batch Load Economic Load Response Participant Resource" shall mean an Economic Load Response Participant Resource that has a cyclical production process such that at most times during the process it is consuming energy, but at consistent regular intervals, ordinarily for periods of less than ten minutes, it reduces its consumption of energy for its production processes to minimal or zero megawatts.

Behind The Meter Generation:

"Behind The Meter Generation" shall refer to a generating unit that delivers energy to load without using the Transmission System or any distribution facilities (unless the entity that owns or leases the distribution facilities has consented to such use of the distribution facilities and such consent has been demonstrated to the satisfaction of the Office of the Interconnection); provided, however, that Behind The Meter Generation does not include (i) at any time, any portion of such generating unit's capacity that is designated as a Generation Capacity Resource, or (ii) in any hour, any portion of the output of such generating unit that is sold to another entity for consumption at another electrical location or into the PJM Interchange Energy Market.

Board Member:

"Board Member" shall mean a member of the PJM Board.

Definitions C - D

Candidate In-Kind Replacement Facility Needs List:

"Candidate In-Kind Replacement Facility Needs List" shall have the meaning set forth in Tariff, Attachment M-5.

Capacity Resource:

"Capacity Resource" shall have the meaning provided in the Reliability Assurance Agreement.

Capacity Storage Resource:

"Capacity Storage Resource" shall mean any Energy Storage Resource that participates in the Reliability Pricing Model or is otherwise treated as capacity in PJM's markets such as through a Fixed Resource Requirement Capacity Plan.

Catastrophic Force Majeure:

"Catastrophic Force Majeure" shall not include any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, or curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, unless as a consequence of any such action, event, or combination of events, either (i) all, or substantially all, of the Transmission System is unavailable, or (ii) all, or substantially all, of the interstate natural gas pipeline network, interstate rail, interstate highway or federal waterway transportation network serving the PJM Region is unavailable. The Office of the Interconnection shall determine whether an event of Catastrophic Force Majeure has occurred for purposes of this Agreement, the PJM Tariff, and the Reliability Assurance Agreement, based on an examination of available evidence. The Office of the Interconnection's determination is subject to review by the Commission.

Charge Economic Maximum Megawatts:

"Charge Economic Maximum Megawatts" shall mean the greatest magnitude of megawatt power consumption available for charging in economic dispatch by an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource in Continuous Mode or in Charge Mode. Charge Economic Maximum Megawatts shall be the Economic Minimum for an Energy Storage Resource or Open-Loop Hybrid Resource in Charge Mode or in Continuous Mode.

Charge Economic Minimum Megawatts:

"Charge Economic Minimum Megawatts" shall mean the smallest magnitude of megawatt power consumption available for charging in economic dispatch by an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource in Charge Mode. Charge Economic Minimum Megawatts shall be the Economic Maximum for an Energy Storage Resource or Open-Loop Hybrid Resource in Charge Mode.

Charge Mode:

"Charge Mode" shall mean the mode of operation of an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource that only includes negative megawatt quantities (i.e., the Energy Storage Resource Model Participant or Open-Loop Hybrid Resource is only withdrawing megawatts from the grid).

Charge Ramp Rate:

"Charge Ramp Rate" shall mean the Ramping Capability of an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource in Charge Mode.

Closed-Loop Hybrid Resource:

"Closed-Loop Hybrid Resource" shall mean a Hybrid Resource without a storage component, or that does not operate by charging its storage component from the grid.

Cold/Warm/Hot Notification Time:

"Cold/Warm/Hot Notification Time" shall mean the time interval between PJM notification and the beginning of the start sequence for a generating unit that is currently in its cold/warm/hot temperature state. The start sequence may include steps such as any valve operation, starting feed water pumps, startup of auxiliary equipment, etc.

Cold/Warm/Hot Start-up Time:

For all generating units that are not combined cycle units, "Cold/Warm/Hot Start-up Time" shall mean the time interval, measured in hours, from the beginning of the start sequence to the point after generator breaker closure, which is typically indicated by telemetered or aggregated State Estimator megawatts greater than zero for a generating unit in its cold/warm/hot temperature state. For combined cycle units, "Cold/Warm/Hot Start-up Time" shall mean the time interval from the beginning of the start sequence to the point after first combustion turbine generator breaker closure in its cold/warm/hot temperature state, which is typically indicated by telemetered or aggregated State Estimator megawatts greater than zero. For all generating units, the start sequence may include steps such as any valve operation, starting feed water pumps, startup of auxiliary equipment, etc. Other more detailed actions that could signal the beginning of the start sequence could include, but are not limited to, the operation of pumps, condensers, fans, water chemistry evaluations, checklists, valves, fuel systems, combustion turbines, starting engines or systems, maintaining stable fuel/air ratios, and other auxiliary equipment necessary for startup.

Cold Weather Alert:

"Cold Weather Alert" shall mean the notice that PJM provides to PJM Members, Transmission Owners, resource owners and operators, customers, and regulators to prepare personnel and facilities for expected extreme cold weather conditions.

Co-Located Resource:

"Co-Located Resource" shall mean a component of a Mixed Technology Facility that operates in the capacity, energy, and/or ancillary services market(s) as a separate resource from the other components of such facility.

Committed Offer:

The "Committed Offer shall mean 1) for pool-scheduled resources, an offer on which a resource was scheduled by the Office of the Interconnection for a particular clock hour for an Operating Day, and 2) for self-scheduled resources, either the offer on which the Market Seller has elected to schedule the resource or the applicable offer for the resource determined pursuant to Operating Agreement, Schedule 1, section 6.4, and the parallel provisions of Tariff, Attachment K-Appendix, section 6.4, or Operating Agreement, Schedule 1, section 6.6, and the parallel provisions of Tariff, Attachment K-Appendix, section 6.6, for a particular clock hour for an Operating Day.

Compliance Monitoring and Enforcement Program:

"Compliance Monitoring and Enforcement Program" shall mean the program to be used by the NERC and the Regional Entities to monitor, assess and enforce compliance with the NERC Reliability Standards. As part of a Compliance Monitoring and Enforcement Program, NERC and the Regional Entities may, among other things, conduct investigations, determine fault and assess monetary penalties.

Composite Energy Offer:

"Composite Energy Offer" for generation resources shall mean the sum (in $/MWh) of the Incremental Energy Offer and amortized Start-Up Costs and amortized No-load Costs, and for Economic Load Response Participant resources the sum (in $/MWh) of the Incremental Energy Offer and amortized shutdown costs, as determined in accordance with Operating Agreement, Schedule 1, section 2.4 and Operating Agreement, Schedule 1, section 2.4A and the PJM Manuals.

Condense Energy Use:

"Condense Energy Use" shall mean the power (MW) used by a condensing resource while operating in condensing mode. The value must be less than or equal to the actual power consumed.

Condense Startup Cost:

"Condense Startup Cost" shall mean the applicable costs for a resource to transition from offline state to operate in condensing mode. Condense Startup Cost shall consist primarily of the unit's start heat input (adjusted by the performance factor) times the fuel cost associated with the transition from offline state to operate in condensing mode. It also may include operating costs, Maintenance Adders, emissions allowances/adders, and station service cost associated with the transition from offline state to operate in condensing mode. Condense Startup Cost shall be capped at the applicable Start-Up Cost of the Cost-Based Offer.

Condense to Generate Cost:

"Condense to Generate Cost" shall mean the applicable costs for a resource to transition from operating in condensing mode to operating in generating mode. Condense to Generate Cost shall consist primarily of the unit's start heat input (adjusted by the performance factor) times the fuel cost associated with the transition from operating in condensing mode to operating in generating mode. It also may include operating costs, Maintenance Adders, emissions allowances/adders, and station service cost associated with the transition from operating in condensing mode to operating in generating mode. Condense to Generate Cost shall be capped at the applicable Start-Up Cost of the Cost-Based Offer.

Congestion Price:

"Congestion Price" shall mean the congestion component of the Locational Marginal Price, which is the effect on transmission congestion costs (whether positive or negative) associated with increasing the output of a generation resource or decreasing the consumption by a Demand Resource, based on the effect of increased generation from or consumption by the resource on transmission line loadings, calculated as specified in Operating Agreement, Schedule 1, section 2, and the parallel provisions of Tariff, Attachment K-Appendix, section 2.

Consolidated Transmission Owners Agreement, PJM Transmission Owners Agreement or Transmission Owners Agreement:

"Consolidated Transmission Owners Agreement," "PJM Transmission Owners Agreement" or Transmission Owners Agreement" shall mean that certain Consolidated Transmission Owners Agreement, dated as of December 15, 2005, by and among the Transmission Owners and by and between the Transmission Owners and PJM Interconnection, L.L.C. on file with the Commission, as amended from time to time.

Continuous Mode:

"Continuous Mode" shall mean the mode of operation of an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource that includes both negative and positive megawatt quantities (i.e., the Energy Storage Resource Model Participant or Open-Loop Hybrid Resource is capable of continually and immediately transitioning from withdrawing megawatt quantities from the grid to injecting megawatt quantities onto the grid or injecting megawatts to withdrawing megawatts). Energy Storage Resource Model Participants or Open-Loop Hybrid Resource operating in Continuous Mode are considered to have an unlimited ramp rate.

Continuous Mode requires Discharge Economic Maximum Megawatts to be zero or correspond to an injection, and Charge Economic Maximum Megawatts to be zero or correspond to a withdrawal.

Control Area:

"Control Area" shall mean an electric power system or combination of electric power systems bounded by interconnection metering and telemetry to which a common automatic generation control scheme is applied in order to:

(a) match the power output of the generators within the electric power system(s) and energy purchased from entities outside the electric power system(s), with the load within the electric power system(s);

(b) maintain scheduled interchange with other Control Areas, within the limits of Good Utility Practice;

(c) maintain the frequency of the electric power system(s) within reasonable limits in accordance with Good Utility Practice and the criteria of NERC and each Applicable Regional Entity;

(d) maintain power flows on transmission facilities within appropriate limits to preserve reliability; and

(e) provide sufficient generating capacity to maintain operating reserves in accordance with Good Utility Practice.

Control Zone:

"Control Zone" shall mean one Zone or multiple contiguous Zones, as designated in the PJM Manuals.

Coordinated External Transaction:

"Coordinated External Transaction" shall mean a transaction to simultaneously purchase and sell energy on either side of a CTS Enabled Interface in accordance with the procedures of Operating Agreement, Schedule 1, section 1.13 and the parallel provisions of Tariff, Attachment K-Appendix, section 1.13.

Coordinated Transaction Scheduling:

"Coordinated Transaction Scheduling" or "CTS" shall mean the scheduling of Coordinated External Transactions at a CTS Enabled Interface in accordance with the procedures of Operating Agreement, Schedule 1, section 1.13, and the parallel provisions of Tariff, Attachment K-Appendix, section 1.13.

Core LT Needs:

"Core LT Needs" shall mean Long-Term Transmission Needs identified by the Office of the Interconnection in accordance with Operating Agreement, Schedule 6-C, section 1.6.2(a).

Core Plan:

"Core Plan" shall mean a set of Long-Term Transmission Projects addressing Core LT Needs that, as a portfolio, meets the Core Plan Benefit-to-Cost Ratio, as set forth in Operating Agreement, Schedule 6-C, section 1.10(a)(1).

Core Plan Benefit-to-Cost-Ratio:

"Core Plan Benefit-to-Cost-Ratio" shall mean the minimum criteria used to identify Long-Term Transmission Projects for inclusion in the Core Plan, determined in accordance with Operating Agreement, Schedule 6-C, section 1.10.

Counterparty:

"Counterparty" shall mean PJMSettlement as the contracting party, in its name and own right and not as an agent, to an agreement or transaction with a Market Participant or other entities, including the agreements and transactions with customers regarding transmission service and other transactions under the PJM Tariff and this Operating Agreement. PJMSettlement shall not be a counterparty to (i) any bilateral transactions between Members, or (ii) any Member's self-supply of energy to serve its load, or (iii) any Member's self-schedule of energy reported to the extent that energy serves that Member's own load.

Credit Breach:

"Credit Breach" shall mean (a) the failure of a Participant to perform, observe, meet or comply with any requirements of Tariff, Attachment Q or other provisions of the Agreements, other than a Financial Default, or (b) a determination by PJM and notice to the Participant that a Participant represents an unreasonable credit risk to the PJM Markets; that, in either event, has not been cured or remedied after any required notice has been given and any cure period has elapsed.

CTS Enabled Interface:

"CTS Enabled Interface" shall mean an interface between the PJM Control Area and an adjacent Control Area at which the Office of the Interconnection has authorized the use of Coordinated Transaction Scheduling ("CTS"). The CTS Enabled Interfaces between the PJM Control Area and the New York Independent System Operator, Inc. Control Area shall be designated in Joint Operating Agreement Among and Between New York Independent System Operator Inc. and PJM Interconnection, L.L.C. (PJM Rate Schedule FERC No. 45) Schedule A. The CTS Enabled Interfaces between the PJM Control Area and the Midcontinent Independent System Operator, Inc. shall be designated consistent with Joint Operating Agreement between Midcontinent Independent System Operator, Inc. and PJM Interconnection, L.L.C, Attachment 3, section 2.

CTS Interface Bid:

"CTS Interface Bid" shall mean a unified real-time bid to simultaneously purchase and sell energy on either side of a CTS Enabled Interface in accordance with the procedures of Operating Agreement, Schedule 1, section 1.13, and the parallel provisions of Tariff, Attachment K-Appendix, section 1.13.

Curtailment Service Provider:

"Curtailment Service Provider" or "CSP" shall mean a Member or a Special Member, which action on behalf of itself or one or more other Members or non-Members, participates in the PJM Interchange Energy Market, Ancillary Services markets, and/or Reliability Pricing Model by causing a reduction in demand.

Day-ahead Congestion Price:

"Day-ahead Congestion Price" shall mean the Congestion Price resulting from the Day-ahead Energy Market.

Day-ahead Energy Market:

"Day-ahead Energy Market" shall mean the schedule of commitments for the purchase or sale of energy and payment of Transmission Congestion Charges developed by the Office of the Interconnection as a result of the offers and specifications submitted in accordance with Operating Agreement, Schedule 1, section 1.10, and the parallel provisions of Tariff, Attachment K-Appendix, section 1.10.

Day-ahead Energy Market Injection Congestion Credits:

"Day-ahead Energy Market Injection Congestion Credits" shall mean those congestion credits paid to Market Participants for supply transactions in the Day-ahead Energy Market including generation schedules, Increment Offers, Up-to Congestion Transactions, import transactions, and Day-ahead Pseudo-Tie Transactions.

Day-ahead Energy Market Transmission Congestion Charges:

"Day-ahead Energy Market Transmission Congestion Charges" shall be equal to the sum of Day-ahead Energy Market Withdrawal Congestion Charges minus [the sum of Day-ahead Energy Market Injection Congestion Credits plus any congestion charges calculated pursuant to the Joint Operating Agreement between the Midcontinent Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C. (PJM Rate Schedule FERC No. 38), plus any congestion charges calculated pursuant to the Joint Operating Agreement Among and Between New York Independent System Operator Inc. and PJM Interconnection, L.L.C. (PJM Rate Schedule FERC No. 45), plus any congestion charges calculated pursuant to agreements between the Office of the Interconnection and other entities, as applicable)].

Day-ahead Energy Market Withdrawal Congestion Charges:

"Day-ahead Energy Market Withdrawal Congestion Charges" shall mean those congestion charges collected from Market Participants for withdrawal transactions in the Day-ahead Energy Market from transactions including Demand Bids, Decrement Bids, Up-to Congestion Transactions, Export Transactions, and Day-ahead Pseudo-Tie Transactions.

Day-ahead Loss Price:

"Day-ahead Loss Price" shall mean the Loss Price resulting from the Day-ahead Energy Market.

Day-ahead Prices:

"Day-ahead Prices" shall mean the Locational Marginal Prices resulting from the Day-ahead Energy Market.

Day-Ahead Pseudo-Tie Transaction:

"Day-Ahead Pseudo-Tie Transaction" shall mean a transaction scheduled in the Day-ahead Energy Market to the PJM-MISO interface from a generator within the PJM balancing authority area that Pseudo-Ties into the MISO balancing authority area.

Day-ahead Settlement Interval:

"Day-ahead Settlement Interval" shall mean the interval used by settlements, which shall be every one clock hour.

Day-ahead System Energy Price:

"Day-ahead System Energy Price" shall mean the System Energy Price resulting from the Day-ahead Energy Market.

Decrement Bid:

"Decrement Bid" shall mean a type of Virtual Transaction that is a bid to purchase energy at a specified location in the Day-ahead Energy Market. A cleared Decrement Bid results in scheduled load at the specified location in the Day-ahead Energy Market.

Default Allocation Assessment:

"Default Allocation Assessment" shall mean the assessment determined pursuant to Operating Agreement, section 15.2.2.

Demand Bid:

"Demand Bid" shall mean a bid, submitted by a Load Serving Entity in the Day-ahead Energy Market, to purchase energy at its contracted load location, for a specified timeframe and megawatt quantity, that if cleared will result in energy being scheduled at the specified location in the Day-ahead Energy Market and in the physical transfer of energy during the relevant Operating Day.

Demand Bid Limit:

"Demand Bid Limit" shall mean the largest MW volume of Demand Bids that may be submitted by a Load Serving Entity for any hour of an Operating Day, as determined pursuant to Operating Agreement, Schedule 1, section 1.10.1B, and the parallel provisions of Tariff, Attachment K-Appendix, section 1.10.1B.

Demand Bid Screening:

"Demand Bid Screening" shall mean the process by which Demand Bids are reviewed against the applicable Demand Bid Limit, and rejected if they would exceed that limit, as determined pursuant to Operating Agreement, Schedule 1, section 1.10.1B, and the parallel provisions of Tariff, Attachment K-Appendix, section 1.10.1B.

Demand Resource:

"Demand Resource" shall have the meaning provided in the Reliability Assurance Agreement.

Designated Entity:

"Designated Entity" shall mean an entity, including an existing Transmission Owner or Nonincumbent Developer, designated by the Office of the Interconnection with the responsibility to construct, own, operate, maintain, and finance Immediate-need Reliability Projects, Short-term Projects, Long-lead Projects, or Economic-based Enhancements or Expansions pursuant to Operating Agreement, Schedule 6, section 1.5.8.

Direct Charging Energy:

"Direct Charging Energy" shall mean the energy that an Energy Storage Resource or Open-Loop Hybrid Resource purchases from the PJM Interchange Energy Market and (i) later resells to the PJM Interchange Energy Market; or (ii) is lost to conversion inefficiencies, provided that such inefficiencies are an unavoidable component of the conversion, storage, and discharge process that is used to resell energy back to the PJM Interchange Energy Market.

Direct Load Control:

"Direct Load Control" shall mean load reduction that is controlled directly by the Curtailment Service Provider's market operations center or its agent, in response to PJM instructions.

Discharge Economic Maximum Megawatts:

"Discharge Economic Maximum Megawatts" shall mean the maximum megawatt power output available for discharge in economic dispatch by an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource in Continuous Mode or in Discharge Mode. Discharge Economic Maximum Megawatts shall be the Economic Maximum for an Energy Storage Resource or Open-Loop Hybrid Resource in Discharge Mode or in Continuous Mode.

Discharge Economic Minimum Megawatts:

"Discharge Economic Minimum Megawatts" shall mean the minimum megawatt power output available for discharge in economic dispatch by an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource in Discharge Mode. Discharge Economic Minimum Megawatts shall be the Economic Minimum for an Energy Storage Resource or Open-Loop Hybrid Resource in Discharge Mode.

Discharge Mode:

"Discharge Mode" shall mean the mode of operation of an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource that only includes positive megawatt quantities (i.e., the Energy Storage Resource Model Participant or Open-Loop Hybrid Resource is only injecting megawatts onto the grid).

Discharge Ramp Rate:

"Discharge Ramp Rate" shall mean the Ramping Capability of an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource in Discharge Mode.

Dispatch Rate:

"Dispatch Rate" shall mean the control signal, expressed in dollars per megawatt-hour, calculated and transmitted continuously and dynamically to direct the output level of all generation resources dispatched by the Office of the Interconnection in accordance with the Offer Data.

Dispatched Charging Energy:

"Dispatched Charging Energy" shall mean Direct Charging Energy that an Energy Storage Resource Model Participant or Open-Loop Hybrid Resource receives from the electric grid pursuant to PJM dispatch while providing one of the following services in the PJM markets: Energy Imbalance Service pursuant to Tariff, Schedule 4; Regulation; Tier 2 Synchronized Reserves; or Reactive Service. Energy Storage Resource Model Participants and Open-Loop Hybrid Resource shall be considered to be providing Energy Imbalance Service when they are dispatchable by PJM in real-time.

Dynamic Schedule:

"Dynamic Schedule" shall have the same meaning set forth in the NERC Glossary of Terms Used in NERC Reliability Standards.

Dynamic Transfer:

"Dynamic Transfer" shall mean a Pseudo-Tie or Dynamic Schedule.

Definitions I - L

Immediate-need Reliability Project:

"Immediate-need Reliability Project" shall mean a reliability-based transmission enhancement or expansion that the Office of the Interconnection has identified to resolve a need that must be addressed within three years or less from the year the Office of the Interconnection identified the existing or projected limitations on the Transmission System that gave rise to the need for such enhancement or expansion pursuant to the study process described in Operating Agreement, Schedule 6, section 1.5.3.

Inadvertent Interchange:

"Inadvertent Interchange" shall mean the difference between net actual energy flow and net scheduled energy flow into or out of the individual Control Areas operated by PJM.

Increment Offer:

"Increment Offer" shall mean a type of Virtual Transaction that is an offer to sell energy at a specified location in the Day-ahead Energy Market. A cleared Increment Offer results in scheduled generation at the specified location in the Day-ahead Energy Market.

Incremental Energy Offer:

"Incremental Energy Offer" shall mean the cost in dollars per MWh of providing an additional MWh from a synchronized unit. It consists primarily of the cost of fuel, as determined by the unit's incremental heat rate (adjusted by the performance factor) times the fuel cost. It also includes operating costs, Maintenance Adders, emissions allowances, tax credits, and energy market opportunity costs.

Incremental Multi-Driver Project:

"Incremental Multi-Driver Project" shall mean a Multi-Driver Project that is planned as described in Operating Agreement, Schedule 6, section 1.5.10(h).

Information Request:

"Information Request" shall mean a written request, in accordance with the terms of the Operating Agreement for disclosure of confidential information pursuant to Operating Agreement, section 18.17.4.

In-Kind Replacement Facility Need:

"In-Kind Replacement Facility Need" shall have the meaning set forth in Tariff, Attachment M-5.

Integer Relaxation:

"Integer Relaxation" shall mean the process by which the commitment status variable for an Eligible Fast-Start Resource is allowed to vary between zero and one, inclusive of zero and one, as further described in Operating Agreement, Schedule 1, section 2.2.

Interface Pricing Point:

"Interface Pricing Point" shall have the meaning specified in Operating Agreement, Schedule 1, section 2.6A, and the parallel provisions of Tariff, Attachment K-Appendix, section 2.6A.

Internal Market Buyer:

"Internal Market Buyer" shall mean a Market Buyer making purchases of energy from the PJM Interchange Energy Market for ultimate consumption by end-users inside the PJM Region that are served by Network Transmission Service

Interregional Transmission Project:

"Interregional Transmission Project" shall mean transmission facilities that would be located within two or more neighboring transmission planning regions and are determined by each of those regions to be a more efficient or cost effective solution to regional transmission needs.

LLC:

"LLC" shall mean PJM Interconnection, L.L.C., a Delaware limited liability company.

Load Management:

"Load Management" shall mean a Demand Resource ("DR") as defined in the Reliability Assurance Agreement.

Load Management Event:

"Load Management Event" shall mean a) a single temporally contiguous dispatch of Demand Resources in a Compliance Aggregation Area during an Operating Day, or b) multiple dispatches of Demand Resources in a Compliance Aggregation Area during an Operating Day that are temporally contiguous.

Load Reduction Event:

"Load Reduction Event" shall mean a reduction in demand by a Member or Special Member for the purpose of participating in the PJM Interchange Energy Market.

Load Serving Charging Energy:

"Load Serving Charging Energy" shall mean energy that is purchased from the PJM Interchange Energy Market and stored in an Energy Storage Resource or Open-Loop Hybrid Resource for later resale to end-use load.

Load Serving Entity:

"Load Serving Entity" or "LSE" shall mean any entity (or the duly designated agent of such an entity), including a load aggregator or power marketer, (i) serving end-users within the PJM Region, and (ii) that has been granted the authority or has an obligation pursuant to state or local law, regulation or franchise to sell electric energy to end-users located within the PJM Region. Load Serving Entity shall include any end-use customer that qualifies under state rules or a utility retail tariff to manage directly its own supply of electric power and energy and use of transmission and ancillary services.

Local Plan:

"Local Plan" shall include Supplemental Projects as identified by the Transmission Owners within their zone and Subregional RTEP projects developed to comply with all applicable reliability criteria, including Transmission Owners' planning criteria or based on market efficiency analysis and in consideration of Public Policy Requirements.

Location:

"Location" as used in the Economic Load Response rules shall mean an end-use customer site as defined by the relevant electric distribution company account number.

Locational Marginal Price:

"Locational Marginal Price" or "LMP" shall mean the market clearing marginal price for energy at the location the energy is delivered or received, calculated as specified in Operating Agreement, Schedule 1, section 2, and the parallel provisions of Tariff, Attachment K-Appendix, section 2.

LOC Deviation:

"LOC Deviation," shall mean, for units other than wind or solar units, Hybrid Resources, or Energy Storage Resource Model Participants, the LOC Deviation shall equal the desired megawatt amount for the resource determined according to the point on the Final Offer curve corresponding to the Real-time Settlement Interval real-time Locational Marginal Price at the resource's bus and adjusted for any reduction in megawatts due to Regulation, Synchronized Reserve, or Secondary Reserve assignments and limited to the lesser of the unit's Economic Maximum or the unit's Generation Resource Maximum Output, minus the actual output of the unit. For wind or solar units, Hybrid Resources, or Energy Storage Resource Model Participants, the LOC Deviation shall mean the deviation of the generating unit's output equal to the lesser of the PJM forecasted output, inclusive of state of charge, for the unit or the desired megawatt amount for the resource determined according to the point on the Final Offer curve corresponding to the Real-time Settlement Interval real-time Locational Marginal Price at the resource's bus and adjusted for any reduction in megawatts due to Regulation, Synchronized Reserve, or Secondary Reserve assignments, and shall be limited to the lesser of the unit's Economic Maximum or the unit's Generation Resource Maximum Output, minus the actual output of the unit, where the actual output of the unit is floored at 0.

Long-lead Project:

"Long-lead Project" shall mean a transmission enhancement or expansion with an in-service date more than five years from the year in which, pursuant to Operating Agreement, Schedule 6, section 1.5.8(c), the Office of the Interconnection posts the violations, system conditions, or Public Policy Requirements to be addressed by the enhancement or expansion.

Long-Term Regional Transmission Plan:

"Long-Term Regional Transmission Plan" shall mean a regional transmission plan developed on a sufficiently long-term, forward-looking, and comprehensive basis that identifies Long-Term Transmission Needs, identifies Long-Term Transmission Projects that meet such needs, measures the benefits of those Transmission Facilities, and evaluates those Transmission Facilities for potential selection in the regional transmission plan for purposes of cost allocation as the more efficient or cost-effective regional Transmission Facilities to meet Long-Term Transmission Needs with consideration of benefits to consumers relative to costs without over-building.

Long-Term Scenario:

"Long-Term Scenario" shall mean a scenario developed in accordance with Operating Agreement, Schedule 6-C, section 1.5, that incorporates various assumptions using best available data inputs about the future electric power system over a sufficiently long-term, forward-looking transmission planning horizon to identify Long-Term Transmission Needs and enable the identification and evaluation of Transmission Facilities to meet such Long-Term Transmission Needs.

Long-Term Transmission Need:

"Long-Term Transmission Need" shall mean transmission needs identified by the Office of the Interconnection pursuant to Operating Agreement, Schedule 6-C, resolution of which may require a Long-Term Transmission Project.

Long-Term Transmission Project:

"Long-Term Transmission Project" shall mean one or more enhancement(s) or expansion(s) of the Transmission System identified through the Long-Term Regional Transmission Plan process that, on an aggregate basis of all components, addresses a Long-Term Transmission Need or common set of Long-Term Transmission Needs.

Loss Price:

“Loss Price” shall mean the loss component of the Locational Marginal Price, which is the effect on transmission loss costs (whether positive or negative) associated with increasing the output of a generation resource or decreasing the consumption by a Demand Resource based on the effect of increased generation from or consumption by the resource on transmission losses, calculated as specified in Operating Agreement, Schedule 1, section 2, and the parallel provisions of Tariff, Attachment K-Appendix, section 2.

Definitions O - P

Offer Data:

"Offer Data" shall mean the scheduling, operations planning, dispatch, new resource, and other data and information necessary to schedule and dispatch generation resources and Demand Resource(s) for the provision of energy and other services and the maintenance of the reliability and security of the Transmission System in the PJM Region, and specified for submission to the PJM Interchange Energy Market for such purposes by the Office of the Interconnection.

Office of the Interconnection:

"Office of the Interconnection" shall mean the employees and agents of PJM Interconnection, L.L.C. subject to the supervision and oversight of the PJM Board, acting pursuant to the Operating Agreement.

Office of the Interconnection Control Center:

"Office of the Interconnection Control Center" shall mean the equipment, facilities and personnel used by the Office of the Interconnection to coordinate and direct the operation of the PJM Region and to administer the PJM Interchange Energy Market, including facilities and equipment used to communicate and coordinate with the Market Participants in connection with transactions in the PJM Interchange Energy Market or the operation of the PJM Region.

On-Site Generators:

"On-Site Generators" shall mean generation facilities or portions of a generation facility (including Behind The Meter Generation) that (i) are not Generation Capacity Resources, (ii) are not injecting into the grid for the portion of a generation facility that participates as an Economic Load Response Participant or as a Demand Resource, (iii) are either synchronized or non-synchronized to the Transmission System, and (iv) can be used to reduce demand for the purpose of participating in the PJM Interchange Energy Market.

Open Access Same-Time Information System (OASIS) or PJM Open Access Same-time Information System:

"Open Access Same-Time Information System," "PJM Open Access Same-time Information System" or "OASIS" shall mean the electronic communication system and information system and standards of conduct contained in Part 37 and Part 38 of the Commission's regulations and all additional requirements implemented by subsequent Commission orders dealing with OASIS for the collection and dissemination of information about transmission services in the PJM Region, established and operated by the Office of the Interconnection in accordance with FERC standards and requirements.

Open-Loop Hybrid Resource:

"Open-Loop Hybrid Resource" shall mean a Hybrid Resource with a storage component that operates by charging its storage component from the grid.

Operating Day:

"Operating Day" shall mean the daily 24 hour period beginning at midnight for which transactions on the PJM Interchange Energy Market are scheduled.

Operating Margin:

"Operating Margin" shall mean the incremental adjustments, measured in megawatts, required in PJM Region operations in order to accommodate, on a first contingency basis, an operating contingency in the PJM Region resulting from operations in an interconnected Control Area. Such adjustments may result in constraints causing Transmission Congestion Charges, or may result in Ancillary Services charges pursuant to the PJM Tariff.

Operating Margin Customer:

"Operating Margin Customer" shall mean a Control Area purchasing Operating Margin pursuant to an agreement between such other Control Area and the LLC.

Operating Reserve:

"Operating Reserve" shall mean the amount of generating capacity scheduled to be available for a specified period of an Operating Day to ensure the reliable operation of the PJM Region, as specified in the PJM Manuals.

Operating Reserve Demand Curve:

"Operating Reserve Demand Curve" shall mean a curve with prices on the y-axis and megawatts on the x-axis, which defines the relationship between each incremental megawatt of reserves that can be used to meet a given reserve requirement.

Operator-initiated Commitment:

"Operator-initiated Commitment" shall mean a commitment after the Day-ahead Energy Market and Day-ahead Scheduling Reserves Market, whether manual or automated, for a reason other than minimizing the total production costs of serving load.

Original PJM Agreement:

"Original PJM Agreement" shall mean that certain agreement between certain of the Members, originally dated September 26, 1956, and as amended and supplemented up to and including December 31, 1996, relating to the coordinated operation of their electric supply systems and the interchange of electric capacity and energy among their systems.

Other Supplier:

"Other Supplier" shall mean a Member that: (i) is engaged in buying, selling or transmitting electric energy, capacity, ancillary services, financial transmission rights or other services available under PJM's governing documents in or through the Interconnection or has a good faith intent to do so, and; (ii) does not qualify for the Generation Owner, Electric Distributor, Transmission Owner or End-Use Customer sectors.

PJM Area Relevant State Entities Committee:

"PJM Area Relevant State Entities Committee" shall mean the voluntary, independent committee consisting of any State entity responsible for electric utility regulation or siting electric transmission facilities within the State or portion of a State located in the PJM Region, including any State entity as may be designated for that purpose by the law of such State. The term PJM Area Relevant State Entities Committee shall mean the committee established through the Organization of PJM States, Inc. in 2024 or any succeeding committee.

PJM Board:

"PJM Board" shall mean the Board of Managers of the LLC, acting pursuant to the Operating Agreement, except when such term is being used in Tariff, Attachment M, in which case PJM Board shall mean the Board of Managers of PJM or its designated representative, exclusive of any members of PJM Management.

PJM Control Area:

"PJM Control Area" shall mean the Control Area recognized by NERC as the PJM Control Area.

PJM Dispute Resolution Procedures:

"PJM Dispute Resolution Procedures" shall mean the procedures for the resolution of disputes set forth in Operating Agreement, Schedule 5.

PJM Governing Agreements:

"PJM Governing Agreements" shall mean the PJM Open Access Transmission Tariff, the Operating Agreement, the Consolidated Transmission Owners Agreement, the Reliability Assurance Agreement, or any other applicable agreement approved by the FERC and intended to govern the relationship by and among PJM and any of its Members.

PJM Interchange:

"PJM Interchange" shall mean the following, as determined in accordance with the Operating Agreement and Tariff: (a) for a Market Participant that is a Network Service User, the amount by which its interval Equivalent Load exceeds, or is exceeded by, the sum of the interval outputs of its operating generating resources; or (b) for a Market Participant that is not a Network Service User, the amount of its Spot Market Backup; or (c) the interval scheduled deliveries of Spot Market Energy by a Market Seller from an External Resource; or (d) the interval net metered output of any other Market Seller; or (e) the interval scheduled deliveries of Spot Market Energy to an External Market Buyer; or (f) the interval scheduled deliveries to an Internal Market Buyer that is not a Network Service User.

PJM Interchange Energy Market:

"PJM Interchange Energy Market" shall mean the regional competitive market administered by the Office of the Interconnection for the purchase and sale of spot electric energy at wholesale in interstate commerce and related services established pursuant to Operating Agreement, Schedule 1, and the parallel provisions of Tariff, Attachment K-Appendix.

PJM Interchange Export:

"PJM Interchange Export" shall mean the following, as determined in accordance with the Operating Agreement and Tariff: (a) for a Market Participant that is a Network Service User, the amount by which its interval Equivalent Load is exceeded by the sum of the interval outputs of its operating generating resources; or (b) for a Market Participant that is not a Network Service User, the amount of its Spot Market Backup sales; or (c) the interval scheduled deliveries of Spot Market Energy by a Market Seller from an External Resource; or (d) the interval net metered output of any other Market Seller.

PJM Interchange Import:

"PJM Interchange Import" shall mean the following, as determined in accordance with the Operating Agreement and Tariff: (a) for a Market Participant that is a Network Service User, the amount by which its interval Equivalent Load exceeds the sum of the interval outputs of its operating generating resources; or (b) for a Market Participant that is not a Network Service User, the amount of its Spot Market Backup purchases; or (c) the interval scheduled deliveries of Spot Market Energy to an External Market Buyer; or (d) the interval scheduled deliveries to an Internal Market Buyer that is not a Network Service User.

PJM Manuals:

"PJM Manuals" shall mean the instructions, rules, procedures and guidelines established by the Office of the Interconnection for the operation, planning, and accounting requirements of the PJM Region and the PJM Interchange Energy Market.

PJM Mid-Atlantic Region:

"PJM Mid-Atlantic Region" shall mean the aggregate of the Transmission Facilities of Atlantic City Electric Company, Baltimore Gas and Electric Company, Delmarva Power and Light Company, Jersey Central Power and Light Company, Mid-Atlantic Interstate Transmission, LLC, PECO Energy Company, PPL Electric Utilities Corporation, Potomac Electric Power Company, Public Service Electric and Gas Company, and Rockland Electric Company.

PJM Region:

"PJM Region" shall mean the aggregate of the Zones within PJM as set forth in Tariff, Attachment J.

PJMSettlement:

"PJMSettlement" or "PJM Settlement, Inc." shall mean PJM Settlement, Inc. (or its successor), established by PJM as set forth in Operating Agreement, section 3.3.

PJM South Region:

"PJM South Region" shall mean the Transmission Facilities of Virginia Electric and Power Company.

PJM Tariff, Tariff, O.A.T.T., OATT or PJM Open Access Transmission Tariff:

"PJM Tariff," "Tariff," "O.A.T.T.," or "PJM Open Access Transmission Tariff" shall mean that certain "PJM Open Access Transmission Tariff", including any schedules, appendices, or exhibits attached thereto, on file with FERC and as amended from time to time thereafter.

PJM West Region:

"PJM West Region" shall mean the Zones of Allegheny Power; Commonwealth Edison Company (including Commonwealth Edison Co. of Indiana); AEP East Affiliate Companies; The Dayton Power and Light Company; the Duquesne Light Company; American Transmission Systems, Incorporated; Duke Energy Ohio, Inc., Duke Energy Kentucky, Inc. and East Kentucky Power Cooperative, Inc.

Planning Period:

"Planning Period" shall have the meaning specified in the Reliability Assurance Agreement.

Planning Period Balance:

"Planning Period Balance" shall mean the entire period of time remaining in the Planning Period following the month that a monthly auction is conducted.

Planning Period Quarter:

"Planning Period Quarter" shall mean any of the following three month periods in the Planning Period: June, July and August; September, October and November; December, January and February; or March, April and May.

Point-to-Point Transmission Service:

"Point-to-Point Transmission Service" shall mean the reservation and transmission of capacity and energy on either a firm or non-firm basis from the Point(s) of Delivery under Tariff, Part II.

PRD Curve:

"PRD Curve" shall have the meaning provided in the Reliability Assurance Agreement.

PRD Provider:

"PRD Provider" shall have the meaning provided in the Reliability Assurance Agreement.

PRD Reservation Price:

"PRD Reservation Price" shall have the meaning provided in the Reliability Assurance Agreement.

PRD Substation:

"PRD Substation" shall have the meaning provided in the Reliability Assurance Agreement.

Pre-Emergency Load Response Program:

"Pre-Emergency Load Response Program" shall be the program by which Curtailment Service Providers may be compensated by PJM for Demand Resources that will reduce load when dispatched by PJM during pre-emergency conditions, and is described in Operating Agreement, Schedule 1, section 8 and the parallel provisions of Tariff, Attachment K-appendix, section 8.

President:

"President" shall have the meaning specified in Operating Agreement, section 9.2.

Price Responsive Demand:

"Price Responsive Demand" shall have the meaning provided in the Reliability Assurance Agreement.

Primary Reserve:

"Primary Reserve" shall mean the total reserve capability of generation resources that can be converted fully into energy or Economic Load Response Participant resources whose demand can be reduced within ten minutes of a request from the Office of the Interconnection dispatcher, and is comprised of both Synchronized Reserve and Non-Synchronized Reserve.

Primary Reserve Alert:

"Primary Reserve Alert" shall mean a notification from PJM to alert Members of an anticipated shortage of Operating Reserve capacity for a future critical period.

Primary Reserve Requirement:

"Primary Reserve Requirement" shall mean the megawatts required to be maintained in a Reserve Zone or Reserve Sub-zone as Primary Reserve absent any increase to account for additional reserves scheduled to address operational uncertainty. The Primary Reserve Requirement is calculated in accordance with the PJM Manuals. The requirement can be satisfied by any combination of Synchronized Reserve or Non-Synchronized Reserve resources.

Prohibited Securities:

"Prohibited Securities" shall mean the Securities of a Member, Eligible Customer, or Nonincumbent Developer, or their Affiliates, if:

(1) the primary business purpose of the Member or Eligible Customer, or their Affiliates, is to buy, sell or schedule energy, power, capacity, ancillary services or transmission services as indicated by an industry code within the "Electric Power Generation, Transmission, and Distribution" industry group under the North American Industry Classification System ("NAICS") or otherwise determined by the Office of the Interconnection;

(2) the Nonincumbent Developer has been pre-qualified as eligible to be a Designated Entity pursuant to Operating Agreement, Schedule 6;

(3) the total (gross) financial settlements regarding the use of transmission capacity of the Transmission System and/or transactions in the centralized markets that the Office of the Interconnection administers under the Tariff and the Operating Agreement for all Members or Eligible Customers affiliated with the publicly traded company during its most recently completed fiscal year is equal to or greater than 0.5% of its gross revenues for the same time period; or

(4) the total (gross) financial settlements regarding the use of transmission capacity of the Transmission System and/or transactions in the centralized markets that the Office of the Interconnection administers under the Tariff and the Operating Agreement for all Members or Eligible Customers affiliated with the publicly traded company during the prior calendar year is equal to or greater than 3% of the total transactions for which PJMSettlement is a Counterparty pursuant to Operating Agreement, section 3.3 for the same time period.

The Office of the Interconnection shall compile and maintain a list of the Prohibited Securities publicly traded and post this list for all employees and distribute the list to the Board Members.

Proportional Multi-Driver Project:

"Proportional Multi-Driver Project" shall mean a Multi-Driver Project that is planned as described in Operating Agreement, Schedule 6, section 1.5.10(h).

Pseudo-Tie:

“Pseudo-Tie shall have the same meaning set forth in the NERC Glossary of Terms Used in NERC Reliability Standards.

Public Policy Objectives:

“Public Policy Objectives” shall refer to Public Policy Requirements, as well as public policy initiatives of state or federal entities that have not been codified into law or regulation but which nonetheless may have important impacts on long term planning considerations.

Public Policy Requirements:

“Public Policy Requirements” shall refer to policies pursued by: (a) state or federal entities, where such policies are reflected in duly enacted statutes or regulations, including but not limited to, state renewable portfolio standards and requirements under Environmental Protection Agency regulations; and (b) local governmental entities such as a municipal or county government, where such policies are reflected in duly enacted laws or regulations passed by the local governmental entity.

Definitions Q - R

Ramping Capability:

"Ramping Capability" shall mean the sustained rate of change of generator output, in megawatts per minute.

Real-time Congestion Price:

"Real-time Congestion Price" shall mean the Congestion Price resulting from the Office of the Interconnection's dispatch of the PJM Interchange Energy Market in the Operating Day.

Real-time Loss Price:

"Real-time Loss Price" shall mean the Loss Price resulting from the Office of the Interconnection's dispatch of the PJM Interchange Energy Market in the Operating Day.

Real-time Offer:

"Real-time Offer" shall mean a new offer or an update to a Market Seller's existing cost-based or market-based offer for a clock hour, submitted for use after the close of the Day-ahead Energy Market.

Real-time Prices:

"Real-time Prices" shall mean the Locational Marginal Prices resulting from the Office of the Interconnection's dispatch of the PJM Interchange Energy Market in the Operating Day.

Real-time Energy Market:

"Real-time Energy Market" shall mean the purchase or sale of energy and payment of Transmission Congestion Charges for quantity deviations from the Day-ahead Energy Market in the Operating Day.

Real-time Settlement Interval:

"Real-time Settlement Interval" shall mean the interval used by settlements, which shall be every five minutes.

Real-time System Energy Price:

"Real-time System Energy Price" shall mean the System Energy Price resulting from the Office of the Interconnection's dispatch of the PJM Interchange Energy Market in the Operating Day.

Regional Entity:

"Regional Entity" shall mean an organization that NERC has delegated the authority to propose and enforce reliability standards pursuant to the Federal Power Act.

Regional RTEP Project:

"Regional RTEP Project" shall mean a transmission expansion or enhancement rated at 230 kV or above which is required for compliance with the following PJM criteria: system reliability, operational performance or economic criteria, pursuant to a determination by the Office of the Interconnection.

Registered Entity:

"Registered Entity" shall mean the entity registered under the NERC Functional Model and NERC Rules of Procedures for the purpose of compliance with NERC Reliability Standards and responsible for carrying out the tasks within a NERC function without regard to whether a task or tasks are performed by another entity pursuant to the terms of the PJM Governing Agreements.

Regulation:

"Regulation" shall mean the capability of a specific generation resource or Demand Resource with appropriate telecommunications, control and response capability to separately increase and decrease its output or adjust load in response to a regulating control signal, in accordance with the specifications in the PJM Manuals.

Regulation Requirement:

"Regulation Requirement" shall mean the required megawatts of performance-adjusted Regulation capability to be maintained in a Regulation Zone. The Regulation Requirement is defined as a set megawatt value by commitment interval and can increase to account for additional operational uncertainty, in accordance with the PJM Manuals.

Regulation Zone:

"Regulation Zone" shall mean any of those one or more geographic areas, each consisting of a combination of one or more Control Zone(s) as designated by the Office of the Interconnection in the PJM Manuals, relevant to provision of, and requirements for, regulation service.

Related Parties:

"Related Parties" shall mean, solely for purposes of the governance provisions of the Operating Agreement: (i) any generation and transmission cooperative and one of its distribution cooperative members; and (ii) any joint municipal agency and one of its members. For purposes of the Operating Agreement, representatives of state or federal government agencies shall not be deemed Related Parties with respect to each other, and a public body's regulatory authority, if any, over a Member shall not be deemed to make it a Related Party with respect to that Member.

Relevant Electric Retail Regulatory Authority:

"Relevant Electric Retail Regulatory Authority" shall mean an entity that has jurisdiction over and establishes prices and policies for competition for providers of retail electric service to end-customers, such as the city council for a municipal utility, the governing board of a cooperative utility, the state public utility commission or any other such entity.

Reliability Assurance Agreement or PJM Reliability Assurance Agreement:

"Reliability Assurance Agreement" or "PJM Reliability Assurance Agreement" shall mean that certain Reliability Assurance Agreement Among Load-Serving Entities in the PJM Region, on file with FERC as PJM Interconnection, L.L.C. Rate Schedule FERC. No. 44, and as amended from time to time thereafter.

Reliability Coordinator:

"Reliability Coordinator" shall have the same meaning set forth in the NERC Glossary of Terms used in NERC Reliability Standards.

Reserve Penalty Factor:

"Reserve Penalty Factor" shall mean the cost, in $/MWh, associated with being unable to meet a specific reserve requirement in a Reserve Zone or Reserve Sub-zone. A Reserve Penalty Factor will be defined for each reserve requirement in a Reserve Zone or Reserve Sub-zone.

Reserve Sub-zone:

"Reserve Sub-zone" shall mean any of those geographic areas wholly contained within a Reserve Zone, consisting of a combination of a portion of one or more Control Zone(s) as designated by the Office of the Interconnection in the PJM Manuals, relevant to provision of, and requirements for, reserve service.

Reserve Zone:

"Reserve Zone" shall mean any of those geographic areas consisting of a combination of one or more Control Zone(s) as designated by the Office of the Interconnection in the PJM Manuals, relevant to provision of, and requirements for, reserve service.

Residual Auction Revenue Rights:

"Residual Auction Revenue Rights" shall mean incremental stage 1 Auction Revenue Rights created within a Planning Period by an increase in transmission system capability, including the return to service of existing transmission capability, that was not modeled pursuant to Operating Agreement, Schedule 1, section 7.5, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.5 in compliance with Operating Agreement, Schedule 1, section 7.4.2(h), and the parallel provisions of Tariff, Attachment K-Appendix, section 7.4.2(h), and, if modeled, would have increased the amount of stage 1 Auction Revenue Rights allocated pursuant to Operating Agreement, Schedule 1, section 7.4.2, and the parallel provisions of Attachment K-Appendix, section 7.4.2; provided that, the foregoing notwithstanding, Residual Auction Revenue Rights shall exclude: 1) Incremental Auction Revenue Rights allocated pursuant to Tariff, Part VI; and 2) Auction Revenue Rights allocated to entities that are assigned cost responsibility pursuant to Operating Agreement, Schedule 6 for transmission upgrades that create such rights.

Residual Metered Load:

"Residual Metered Load" shall mean all load remaining in an electric distribution company's fully metered franchise area(s) or service territory(ies) after all nodally priced load of entities serving load in such area(s) or territory(ies) has been carved out.

Revenue Data for Settlements:

"Revenue Data for Settlements" shall mean energy quantities used in accounting and billing as determined pursuant to Tariff, Attachment K-Appendix and the corresponding provisions of Operating Agreement, Schedule 1.

Right-Sized Replacement Facility:

"Right-Sized Replacement Facility" shall mean a Long-Term Transmission Project that (1) is identified by the Office of the Interconnection through the Long-Term Regional Transmission Plan study process; (2) addresses an In-Kind Replacement Facility Need as identified by a Transmission Owner pursuant to Tariff, Attachment M-5; (3) meets a Long-Term Transmission Need; (4) results in more than an incidental increase in capacity compared to the existing transmission facility; and (5) is located in the same general right-of-way or uses or expands an existing right-of-way of the existing transmission facility.

1.5 Procedure for Development of the Regional Transmission Expansion Plan.

1.5.1 Commencement of the Process.

(a) The Office of the Interconnection shall initiate the enhancement and expansion study process if: (i) required as a result of a need for transfer capability identified by the Office of the Interconnection in its evaluation of requests for interconnection with the Transmission System or for firm transmission service with a term of one year or more; (ii) required to address a need identified by the Office of the Interconnection in its on-going evaluation of the Transmission System's market efficiency and operational performance; (iii) required as a result of the Office of the Interconnection's assessment of the Transmission System's compliance with NERC Reliability Standards, more stringent reliability criteria, if any, or PJM planning and operating criteria; (iv) required to address constraints or available transfer capability shortages, including, but not limited to, available transfer capability shortages that prevent the simultaneous feasibility of stage 1A Auction Revenue Rights allocated pursuant to the Operating Agreement, Schedule 1, section 7.4.2(b), constraints or shortages as a result of expected generation retirements, constraints or shortages based on an evaluation of load forecasts, or system reliability needs arising from proposals for the addition of Transmission Facilities in the PJM Region; or (v) expansion of the Transmission System is proposed by one or more Transmission Owners, Interconnection Customers, Network Service Users or Transmission Customers, or any party that funds Network Upgrades pursuant to the Operating Agreement, Schedule 1, section 7.8. The Office of the Interconnection may initiate the enhancement and expansion study process to address or consider, where appropriate, requirements or needs arising from sensitivity studies, modeling assumption variations, scenario analyses, and Public Policy Objectives.

(b) The Office of the Interconnection shall notify the Transmission Expansion Advisory Committee participants of, as well as publicly notice, the commencement of an enhancement and expansion study. The Transmission Expansion Advisory Committee participants shall notify the Office of the Interconnection in writing of any additional transmission considerations they would like to have included in the Office of the Interconnection's analyses.

1.5.2 Development of Scope, Assumptions and Procedures.

Once the need for an enhancement and expansion study has been established, the Office of the Interconnection shall consult with the Transmission Expansion Advisory Committee and the Subregional RTEP Committees, as appropriate, to prepare the study's scope, assumptions and procedures.

1.5.3 Scope of Studies.

In conducting the enhancement and expansion studies, the Office of the Interconnection shall not limit its analyses to bright line tests to identify and evaluate potential Transmission System limitations, violations of planning criteria, or transmission needs. In addition to the bright line tests, the Office of the Interconnection shall employ sensitivity studies, modeling assumption variations, and scenario analyses, and shall also consider Public Policy Objectives in the studies and analyses, so as to mitigate the possibility that bright line metrics may inappropriately include or exclude transmission projects from the transmission plan. Sensitivity studies, modeling assumption variations, and scenario analyses shall take account of potential changes in expected future system conditions, including, but not limited to, load levels, transfer levels, fuel costs, the level and type of generation, generation patterns (including, but not limited to, the effects of assumptions regarding generation that is at risk for retirement and new generation to satisfy Public Policy Objectives), demand response, and uncertainties arising from estimated times to construct transmission upgrades. The Office of the Interconnection shall use the sensitivity studies, modeling assumption variations and scenario analyses in evaluating and choosing among alternative solutions to reliability, market efficiency and operational performance needs. The Office of the Interconnection shall provide the results of its studies and analyses to the Transmission Expansion Advisory Committee to consider the impact that sensitivities, assumptions, and scenarios may have on Transmission System needs and the need for transmission enhancements or expansions. Enhancement and expansion studies shall be completed by the Office of the Interconnection in collaboration with the affected Transmission Owners, as required. In general, enhancement and expansion studies shall include:

(a) An identification of existing and projected limitations on the Transmission System's physical, economic and/or operational capability or performance, with accompanying simulations to identify the costs of controlling those limitations. Potential enhancements and expansions will be proposed to mitigate limitations controlled by non-economic means.

(b) Evaluation and analysis of potential enhancements and expansions, including alternatives thereto, needed to mitigate such limitations.

(c) Identification, evaluation and analysis of potential transmission expansions and enhancements, demand response programs, and other alternative technologies as appropriate to maintain system reliability.

(d) Identification, evaluation and analysis of potential enhancements and expansions for the purposes of supporting competition, market efficiency, operational performance, and Public Policy Requirements in the PJM Region.

(e) Identification, evaluation and analysis of upgrades to support Incremental Auction Revenue Rights requested pursuant to the Operating Agreement, Schedule 1, section 7.8.

(f) Identification, evaluation and analysis of upgrades to support all transmission customers, including native load and network service customers.

(g) Engineering studies needed to determine the effectiveness and compliance of recommended enhancements and expansions, with the following PJM criteria: system reliability, operational performance, and market efficiency.

(h) Identification, evaluation and analysis of potential enhancements and expansions designed to ensure that the Transmission System's capability can support the simultaneous feasibility of all stage 1A Auction Revenue Rights allocated pursuant to the Operating Agreement, Schedule 1, section 7.4.2(b). Enhancements and expansions related to stage 1A

Auction Revenue Rights identified pursuant to this Section shall be recommended for inclusion in the Regional Transmission Expansion Plan together with a recommended in-service date based on the results of the ten (10) year stage 1A simultaneous feasibility analysis. Any such recommended enhancement or expansion under this Operating Agreement, Schedule 6, section 1.5.3(h) shall include, but shall not be limited to, the reason for the upgrade, the cost of the upgrade, the cost allocation identified pursuant to the Operating Agreement, Schedule 6, section 1.5.6(m) and an analysis of the benefits of the enhancement or expansion, provided that any such upgrades will not be subject to a market efficiency cost/benefit analysis.

1.5.4 Supply of Data.

(a) The Transmission Owners shall provide to the Office of the Interconnection on an annual or periodic basis as specified by the Office of the Interconnection, any information and data reasonably required by the Office of the Interconnection to perform the Regional Transmission Expansion Plan, including but not limited to the following: (i) a description of the total load to be served from each substation; (ii) the amount of any interruptible loads included in the total load (including conditions under which an interruption can be implemented and any limitations on the duration and frequency of interruptions); (iii) a description of all generation resources to be located in the geographic region encompassed by the Transmission Owner's transmission facilities, including unit sizes, VAR capability, operating restrictions, and any must-run unit designations required for system reliability or contract reasons; the (iv) current local planning information, including all criteria, assumptions and models used by the Transmission Owners, such as those used to develop Supplemental Projects. The data required under this Section shall be provided in the form and manner specified by the Office of the Interconnection.

(b) In addition to the foregoing, the Transmission Owners, those entities requesting transmission service and any other entities proposing to provide Transmission Facilities to be integrated into the PJM Region shall supply any other information and data reasonably required by the Office of the Interconnection to perform the enhancement and expansion study.

(c) The Office of the Interconnection also shall solicit from the Members, Transmission Customers and other interested parties, including but not limited to electric utility regulatory agencies within the States in the PJM Region, Independent State Agencies Committee, and the State Consumer Advocates, information required by, or anticipated to be useful to, the Office of the Interconnection in its preparation of the enhancement and expansion study, including information regarding potential sensitivity studies, modeling assumption variations, scenario analyses, and Public Policy Objectives that may be considered.

(d) The Office of the Interconnection shall supply to the Transmission Expansion Advisory Committee and the Subregional RTEP Committees reasonably required information and data utilized to develop the Regional Transmission Expansion Plan. Such information and data shall be provided pursuant to the appropriate protection of confidentiality provisions and Office of the Interconnection's CEII process.

(e) The Office of the Interconnection shall provide access through the PJM website, to the Transmission Owner's local planning information, including all criteria, assumptions and models used by the Transmission Owners in their internal planning processes, including the development of Supplemental Projects ("Local Plan Information"). Local Plan Information shall be provided consistent with: (1) any applicable confidentiality provisions set forth in the Operating Agreement, section 18.17; (2) the Office of the Interconnection's CEII process; and (3) any applicable copyright limitations. Notwithstanding the foregoing, the Office of the Interconnection may share with a third party Local Plan Information that has been designated as confidential, pursuant to the provisions for such designation as set forth in the Operating Agreement, section 18.17 and subject to: (i) agreement by the disclosing Transmission Owner consistent with the process set forth in this Operating Agreement; and (ii) an appropriate non-disclosure agreement to be executed by PJM Interconnection, L.L.C., the Transmission Owner and the requesting third party. With the exception of confidential, CEII and copyright protected information, Local Plan Information will be provided for full review by the Planning Committee, the Transmission Expansion Advisory Committee, and the Subregional RTEP Committees.

1.5.5 Coordination of the Regional Transmission Expansion Plan.

(a) The Regional Transmission Expansion Plan shall be developed in accordance with the principles of interregional coordination with the Transmission Systems of the surrounding Regional Entities and with the local transmission providers, through the Transmission Expansion Advisory Committee and the Subregional RTEP Committee.

(b) The Regional Transmission Expansion Plan shall be developed taking into account the processes for coordinated regional transmission expansion planning established under the following agreements:

- Joint Operating Agreement Between the Midwest Independent System Operator, Inc. and PJM Interconnection, L.L.C., which is found at http://www.pjm.com/~/media/documents/agreements/joa-complete.ashx;

- Northeastern ISO/RTO Planning Coordination Protocol, which is described at Schedule 6-B and found at http://www.pjm.com/~/media/documents/agreements/northeastern-iso-rto-planning-coordination-protocol.ashx;

- Joint Operating Agreement Among and Between New York Independent System Operator Inc., which is found at http://www.pjm.com/~/media/documents/agreements/nyiso-pjm.ashx;

- Interregional Transmission Coordination Between the SERTP and PJM Regions, which is found at Operating Agreement, Schedule 6-A ;

- Allocation of Costs of Certain Interregional Transmission Projects Located in the PJM and SERTP Regions, which is located at Tariff, Schedule 12-B;

- Joint Reliability Coordination Agreement Between PJM Interconnection, L.L.C., Tennessee Valley Authority, and Louisville Gas and Electric Company and Kentucky Utilities.

(i) Coordinated regional transmission expansion planning shall also incorporate input from parties that may be impacted by the coordination efforts, including but not limited to, the Members, Transmission Customers, electric utility regulatory agencies in the PJM Region, and the State Consumer Advocates, in accordance with the terms and conditions of the applicable regional coordination agreements.

(ii) An entity, including existing Transmission Owners and Nonincumbent Developers, may submit potential Interregional Transmission Projects pursuant to the Operating Agreement, Schedule 6, section 1.5.8.

(c) The Regional Transmission Expansion Plan shall be developed by the Office of the Interconnection in consultation with the Transmission Expansion Advisory Committee during the enhancement and expansion study process.

(d) The Regional Transmission Expansion Plan shall be developed taking into account the processes for coordination of the regional and subregional systems.

1.5.6 Development of the Recommended Regional Transmission Expansion Plan.

(a) The Office of the Interconnection shall be responsible for the development of the Regional Transmission Expansion Plan and for conducting the studies, including sensitivity studies and scenario analyses on which the plan is based. The Regional Transmission Expansion Plan, including the Regional RTEP Projects, the Subregional RTEP Projects and the Supplemental Projects shall be developed through an open and collaborative process with opportunity for meaningful participation through the Transmission Expansion Advisory Committee and the Subregional RTEP Committees.

(b) The Transmission Expansion Advisory Committee and the Subregional RTEP Committees shall each facilitate a minimum of one initial assumptions meeting to be scheduled at the commencement of the Regional Transmission Expansion Plan process. The purpose of the assumptions meeting shall be to provide an open forum to discuss the following: (i) the assumptions to be used in performing the evaluation and analysis of the potential enhancements and expansions to the Transmission Facilities; (ii) Public Policy Requirements identified by the states for consideration in the Office of the Interconnection's transmission planning analyses; (iii) Public Policy Objectives identified by stakeholders for consideration in the Office of the Interconnection's transmission planning analyses; (iv) the impacts of regulatory actions, projected changes in load growth, demand response resources, energy efficiency programs, price responsive demand, generating additions and retirements, market efficiency and other trends in the industry; and (v) alternative sensitivity studies, modeling assumptions and scenario analyses proposed by the Committee participants. Prior to the initial assumptions meeting, the Transmission Expansion Advisory Committee and Subregional RTEP Committees participants will be afforded the opportunity to provide input and submit suggestions regarding the information identified in items (i) through (v) of this subsection. Following the assumptions meeting and prior to performing the evaluation and analyses of transmission needs, the Office of the Interconnection shall determine the range of assumptions to be used in the studies and scenario analyses, based on the advice and recommendations of the Transmission Expansion Advisory Committee and Subregional RTEP Committees and, through the Independent State Agencies, the statement of Public Policy Requirements provided individually by the states and any state member's assessment or prioritization of Public Policy Objectives proposed by other stakeholders. The Office of the Interconnection shall document and publicly post its determination for review. Such posting shall include an explanation of those Public Policy Requirements and Public Policy Objectives adopted at the assumptions stage to be used in performing the evaluation and analysis of transmission needs. Following identification of transmission needs and prior to evaluating potential enhancements and expansions to the Transmission System the Office of the Interconnection shall publicly post all transmission need information identified as described further in the Operating Agreement, Schedule 6, section 1.5.8(b) herein to support the role of the Subregional RTEP Committees in the development of the Local Plan and support the role of Transmission Expansion Advisory Committee in the development of the Regional Transmission Expansion Plan. The Office of the Interconnection shall also post an explanation of why other Public Policy Requirements and Public Policy Objectives introduced by stakeholders at the assumptions stage were not adopted.

(c) The Subregional RTEP Committees shall also schedule and facilitate meetings related to Supplemental Projects, as described in the Tariff, Attachment M-3.

(d) After the assumptions meeting(s), the Transmission Expansion Advisory Committee and the Subregional RTEP Committees shall facilitate additional meetings and shall post all communications required to provide early opportunity for the committee participants (as defined in the Operating Agreement, Schedule 6, sections 1.3(b) and 1.3(c)) to review, evaluate and offer comments and alternatives to the following arising from the studies performed by the Office of the Interconnection, including sensitivity studies and scenario analyses: (i) any identified violations of reliability criteria and analyses of the market efficiency and operational performance of the Transmission System; (ii) potential transmission solutions, including any acceleration, deceleration or modifications of a potential expansion or enhancement based on the results of sensitivities studies and scenario analyses; and (iii) the proposed Regional Transmission Expansion Plan. These meetings will be scheduled as deemed necessary by the Office of the Interconnection or upon the request of the Transmission Expansion Advisory Committee or the Subregional RTEP Committees. The Office of the Interconnection will provide updates on the status of the development of the Regional Transmission Expansion Plan at these meetings or at the regularly scheduled meetings of the Planning Committee.

(e) In addition, the Office of the Interconnection shall facilitate periodic meetings with the Independent State Agencies Committee to discuss: (i) the assumptions to be used in performing the evaluation and analysis of the potential enhancements and expansions to the Transmission Facilities; (ii) regulatory initiatives, as appropriate, including state regulatory agency initiated programs, and other Public Policy Objectives, to consider including in the Office of the Interconnection's transmission planning analyses; (iii) the impacts of regulatory actions, projected changes in load growth, demand response resources, energy efficiency programs, generating capacity, market efficiency and other trends in the industry; and (iv) alternative sensitivity studies, modeling assumptions and scenario analyses proposed by Independent State Agencies Committee. At such meetings, the Office of the Interconnection also shall discuss the current status of the enhancement and expansion study process. The Independent State Agencies Committee may request that the Office of Interconnection schedule additional meetings as necessary. The Office of the Interconnection shall inform the Transmission Expansion Advisory Committee and the Subregional RTEP Committees, as appropriate, of the input of the Independent State Agencies Committee and shall consider such input in developing the range of assumptions to be used in the studies and scenario analyses described in section (b), above.

(f) Upon completion of its studies and analysis, including sensitivity studies and scenario analyses the Office of the Interconnection shall post on the PJM website the violations, system conditions, economic constraints, and Public Policy Requirements as detailed in the Operating Agreement, Schedule 6, section 1.5.8(b) to afford entities an opportunity to submit proposed enhancements or expansions to address the posted violations, system conditions, economic constraints and Public Policy Requirements as provided for in the Operating Agreement, Schedule 6, section 1.5.8(c). Following the close of a proposal window, the Office of the Interconnection shall: (i) post all proposals submitted pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c); (ii) consider proposals submitted during the proposal windows consistent with the Operating Agreement, Schedule 6, section 1.5.8(d) and develop a recommended plan. Following review by the Transmission Expansion Advisory Committee of proposals, the Office of the Interconnection, based on identified needs and the timing of such needs, and taking into account the sensitivity studies, modeling assumption variations and scenario analyses considered pursuant to the Operating Agreement, Schedule 6, section 1.5.3, shall determine, which more efficient or cost-effective enhancements and expansions shall be included in the recommended plan, including solutions identified as a result of the sensitivity studies, modeling assumption variations, and scenario analyses, that may accelerate, decelerate or modify a potential reliability, market efficiency or operational performance expansion or enhancement identified as a result of the sensitivity studies, modeling assumption variations and scenario analyses, shall be included in the recommended plan. The Office of the Interconnection shall post the proposed recommended plan for review and comment by the Transmission Expansion Advisory Committee. The Transmission Expansion Advisory Committee shall facilitate open meetings and communications as necessary to provide opportunity for the Transmission Expansion Advisory Committee participants to collaborate on the preparation of the recommended enhancement and expansion plan. The Office of the Interconnection also shall invite interested parties to submit comments on the plan to the Transmission Expansion Advisory Committee and to the Office of the Interconnection before submitting the recommended plan to the PJM Board for approval.

(g) The recommended plan shall separately identify enhancements and expansions for the three PJM subregions, the PJM Mid-Atlantic Region, the PJM West Region, and the PJM South Region, and shall incorporate recommendations from the Subregional RTEP Committees.

(h) The recommended plan shall separately identify enhancements and expansions that are classified as Supplemental Projects.

(i) The recommended plan shall identify enhancements and expansions that relieve transmission constraints and which, in the judgment of the Office of the Interconnection, are economically justified. Such economic expansions and enhancements shall be developed in accordance with the procedures, criteria and analyses described in the Operating Agreement, Schedule 6, sections 1.5.7 and 1.5.8.

(j) The recommended plan shall identify enhancements and expansions proposed by a state or states pursuant to the Operating Agreement, Schedule 6, section 1.5.9.

(k) The recommended plan shall include proposed Merchant Transmission Facilities within the PJM Region and any other enhancement or expansion of the Transmission System requested by any participant which the Office of the Interconnection finds to be compatible with the Transmission System, though not required pursuant to the Operating Agreement, Schedule 6, 1.5.6, or Tariff Parts VII or VIII, provided that (1) the requestor has complied, to the extent applicable, with the procedures and other requirements of the Tariff, Parts IV and VI, or Tariff, Parts VII or VIII, as applicable; (2) the proposed enhancement or expansion is consistent with applicable reliability standards, operating criteria and the purposes and objectives of the regional planning protocol; (3) the requestor shall be responsible for all costs of such enhancement or expansion (including, but not necessarily limited to, costs of siting, designing, financing, constructing, operating and maintaining the pertinent facilities), and (4) except as otherwise provided by the Tariff, Parts IV and VI, , or Tariff, Parts VII or VIII, as applicable with respect to Merchant Network Upgrades, the requestor shall accept responsibility for ownership, construction, operation and maintenance of the enhancement or expansion through an undertaking satisfactory to the Office of the Interconnection.

(l) For each enhancement or expansion that is included in the recommended plan, the plan shall consider, based on the planning analysis: other input from participants, including any indications of a willingness to bear cost responsibility for such enhancement or expansion; and, when applicable, relevant projects being undertaken to ensure the simultaneous feasibility of Stage 1A ARRs, to facilitate Incremental ARRs pursuant to the provisions of the Operating Agreement, Schedule 1, section 7.8, or to facilitate upgrades pursuant to the Tariff, Parts II, III, or VI, or Tariff, Parts VII or VIII, as applicable and designate one or more Transmission Owners or other entities to construct, own and, unless otherwise provided, finance the recommended transmission enhancement or expansion. Any designation under this paragraph of one or more entities to construct, own and/or finance a recommended transmission enhancement or expansion shall also include a designation of partial responsibility among them. Nothing herein shall prevent any Transmission Owner or other entity designated to construct, own and/or finance a recommended transmission enhancement or expansion from agreeing to undertake its responsibilities under such designation jointly with other Transmission Owners or other entities.

(m) Based on the planning analysis and other input from participants, including any indications of a willingness to bear cost responsibility for an enhancement or expansion, the recommended plan shall, for any enhancement or expansion that is included in the plan, designate (1) the Market Participant(s) in one or more Zones, or any other party that has agreed to fully fund upgrades pursuant to this Agreement or the PJM Tariff, that will bear cost responsibility for such enhancement or expansion, as and to the extent provided by any provision of the PJM Tariff or this Agreement, (2) in the event and to the extent that no provision of the PJM Tariff or this Agreement assigns cost responsibility, the Market Participant(s) in one or more Zones from which the cost of such enhancement or expansion shall be recovered through charges established pursuant to the Tariff, Schedule 12, and (3) in the event and to the extent that the Coordinated System Plan developed under the Joint Operating Agreement Between the Midwest Independent System Operator, Inc. and PJM Interconnection, L.L.C. assigns cost responsibility, the Market Participant(s) in one or more Zones from which the cost of such enhancement or expansion shall be recovered. Any designation under clause (2) of the preceding sentence (A) shall further be based on the Office of the Interconnection's assessment of the contributions to the need for, and benefits expected to be derived from, the pertinent enhancement or expansion by affected Market Participants and, (B) subject to FERC review and approval, shall be incorporated in any amendment to the Tariff, Schedule 12 that establishes a Transmission Enhancement Charge Rate in connection with an economic expansion or enhancement developed under the Operating Agreement, Schedule 6, sections 1.5.6(i) and 1.5.7, (C) the costs associated with expansions and enhancements required to ensure the simultaneous feasibility of stage 1A Auction Revenue Rights allocated pursuant to the Operating Agreement, Schedule 1, section 7 shall (1) be allocated across transmission zones based on each zone's stage 1A eligible Auction Revenue Rights flow contribution to the total stage 1A eligible Auction Revenue Rights flow on the facility that limits stage 1A ARR feasibility and (2) within each transmission zone the Network Service Users and Transmission Customers that are eligible to receive stage 1A Auction Revenue Rights shall be the Responsible Customers under the Tariff, Schedule 12, section (b) for all expansions and enhancements included in the Regional Transmission Expansion Plan to ensure the simultaneous feasibility of stage 1A Auction Revenue Rights, and (D) the costs associated with expansions and enhancements required to reduce to zero the Locational Price Adder for LDAs as described in the Tariff, Attachment DD, section 15 shall (1) be allocated across Zones based on each Zone's pro rata share of load in such LDA and (2) within each Zone, to all LSEs serving load in such LDA pro rata based on such load.

Any designation under clause (3), above, (A) shall further be based on the Office of the Interconnection's assessment of the contributions to the need for, and benefits expected to be derived from, the pertinent enhancement or expansion by affected Market Participants, and (B), subject to FERC review and approval, shall be incorporated in an amendment to a Schedule of the PJM Tariff which establishes a charge in connection with the pertinent enhancement or expansion. Before designating fewer than all customers using Point-to-Point Transmission Service or Network Integration Transmission Service within a Zone as customers from which the costs of a particular enhancement or expansion may be recovered, Transmission Provider shall consult, in a manner and to the extent that it reasonably determines to be appropriate in each such instance, with affected state utility regulatory authorities and stakeholders. When the plan designates more than one responsible Market Participant, it shall also designate the proportional responsibility among them. Notwithstanding the foregoing, with respect to any facilities that the Regional Transmission Expansion Plan designates to be owned by an entity other than a Transmission Owner, the plan shall designate that entity as responsible for the costs of such facilities.

(n) Certain Regional RTEP Project(s) and Subregional RTEP Project(s) may not be required for compliance with the following PJM criteria: system reliability, market efficiency or operational performance, pursuant to a determination by the Office of the Interconnection.

These Supplemental Projects shall be separately identified in the RTEP and are not subject to approval by the PJM Board.

1.5.7 Development of Economic-based Enhancements or Expansions.

(a) Each year the Transmission Expansion Advisory Committee shall review and comment on the assumptions to be used in performing the market efficiency analysis to identify enhancements or expansions that could relieve transmission constraints that have an economic impact ("economic constraints"). Such assumptions shall include, but not be limited to, the discount rate used to determine the present value of the Total Annual Enhancement Benefit and Total Enhancement Cost, and the annual revenue requirement, including the recovery period, used to determine the Total Enhancement Cost. The discount rate shall be based on the Transmission Owners' most recent after-tax embedded cost of capital weighted by each Transmission Owner's total transmission capitalization. Each year, each Transmission Owner will be requested to provide the Office of the Interconnection with the Transmission Owner's most recent after-tax embedded cost of capital, total transmission capitalization, and levelized carrying charge rate, including the recovery period. The recovery period shall be consistent with recovery periods allowed by the Commission for comparable facilities. Prior to PJM Board consideration of such assumptions, the assumptions shall be presented to the Transmission Expansion Advisory Committee for review and comment. Following review and comment by the Transmission Expansion Advisory Committee, the Office of the Interconnection shall submit the assumptions to be used in performing the market efficiency analysis described in this Operating Agreement, Schedule 6, section 1.5.7 to the PJM Board for consideration.

(b) Following PJM Board consideration of the assumptions, the Office of the Interconnection shall perform a market efficiency analysis to compare the costs and benefits of: (i) accelerating reliability-based enhancements or expansions already included in the Regional Transmission Plan that if accelerated also could relieve one or more economic constraints; (ii) modifying reliability–based enhancements or expansions already included in the Regional Transmission Plan that as modified would relieve one or more economic constraints; and (iii) adding new enhancements or expansions that could relieve one or more economic constraints, but for which no reliability-based need has been identified. Economic constraints include, but are not limited to, constraints that cause: (1) significant historical gross congestion; (2) pro-ration of Stage 1B ARR requests as described in the Operating Agreement, Schedule 1, section 7.4.2(c); or (3) significant simulated congestion as forecasted in the market efficiency analysis. The timeline for the market efficiency analysis and comparison of the costs and benefits for items in the Operating Agreement, Schedule 6, section 1.5.7(b)(i-iii) is described in the PJM Manuals.

(c) The process for conducting the market efficiency analysis described in subsection (b) above shall include the following:

(i) The Office of the Interconnection shall identify and provide to the Transmission Expansion Advisory Committee a list of economic constraints to be evaluated in the market efficiency analysis.

(ii) The Office of the Interconnection shall identify any planned reliability-based enhancements or expansions already included in the Regional Transmission Expansion Plan, which if accelerated would relieve such constraints, and present any such proposed reliability-based enhancements and expansions to be accelerated to the Transmission Expansion Advisory Committee for review and comment. The PJM Board, upon consideration of the advice of the Transmission Expansion Advisory Committee, thereafter shall consider and vote to approve any accelerations.

(iii) The Office of the Interconnection shall evaluate whether including any additional Economic-based Enhancements or Expansions in the Regional Transmission Expansion Plan or modifications of existing Regional Transmission Expansion Plan reliability-based enhancements or expansions would relieve an economic constraint. In addition, pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c), any market participant may submit to the Office of the Interconnection a proposal to construct an additional Economic-based Enhancement or Expansion to relieve an economic constraint. Upon completion of its evaluation, including consideration of any eligible market participant proposed Economic-based Enhancements or Expansions, the Office of the Interconnection shall present to the Transmission Expansion Advisory Committee a description of new Economic-based Enhancements or Expansions for review and comment. Upon consideration and advice of the Transmission Expansion Advisory Committee, the PJM Board shall consider any new Economic-based Enhancements or Expansions for inclusion in the Regional Transmission Plan and for those enhancements and expansions it approves, the PJM Board shall designate (a) the entity or entities that will be responsible for constructing and owning or financing the additional Economic-based Enhancements or Expansions, (b) the estimated costs of such enhancements and expansions, and (c) the market participants that will bear responsibility for the costs of the additional Economic-based Enhancements or Expansions pursuant to the Operating Agreement, Schedule 6, section 1.5.6(m). In the event the entity or entities designated as responsible for construction, owning or financing a designated new Economic-based Enhancement or Expansion declines to construct, own or finance the new Economic-based Enhancement or Expansion, the enhancement or expansion will not be included in the Regional Transmission Expansion Plan but will be included in the report filed with the FERC in accordance with the Operating Agreement, Schedule 6, sections 1.6 and 1.7. This report also shall include information regarding PJM Board approved accelerations of reliability-based enhancements or expansions that an entity declines to accelerate.

(d) To determine the economic benefits of accelerating or modifying planned reliability-based enhancements or expansions or of constructing additional Economic-based Enhancements or Expansions and whether such Economic-based Enhancements or Expansion are eligible for inclusion in the Regional Transmission Expansion Plan, the Office of the Interconnection shall perform and compare market simulations with and without the proposed accelerated or modified planned reliability-based enhancements or expansions or the additional Economic-based Enhancements or Expansions as applicable, using the Benefit/Cost Ratio calculation set forth below in this Operating Agreement, Schedule 6, section 1.5.7(d). An Economic-based Enhancement or Expansion shall be included in the Regional Transmission Expansion Plan recommended to the PJM Board, if the relative benefits and costs of the Economic-based Enhancement or Expansion meet a Benefit/Cost Ratio Threshold of at least 1.25:1.

The Benefit/Cost Ratio shall be determined as follows:

Benefit/Cost Ratio = [Present value of the Total Annual Enhancement Benefit for the 15 year *period starting with the RTEP Year (defined as current year plus five) minus benefits for years when the project is not yet in-service*] ÷ [Present value of the Total Enhancement Cost for the *same* 15 year *period*]

Where

Total Annual Enhancement Benefit = Energy Market Benefit + Reliability Pricing Model Benefit

and

For economic-based enhancements and expansions for which cost responsibility is assigned pursuant to the Tariff, Schedule 12, section (b)(i) the Energy Market Benefit is as follows:

Energy Market Benefit = [.50] * [Change in Total Energy Production Cost] + [.50] * [Change in Load Energy Payment]

For economic-based enhancements and expansions for which cost responsibility is assigned pursuant to the Tariff, Schedule 12, section (b)(v) the Energy Market Benefit is as follows:

Energy Market Benefit = [1] * [Change in Load Energy Payment]
and

Change in Total Energy Production Cost = [the estimated total annual fuel costs, variable O&M costs, and emissions costs of the dispatched resources in the PJM Region without the Economic-based Enhancement or Expansion] – [the estimated total annual fuel costs, variable O&M costs, and emissions costs of the dispatched resources in the PJM Region with the Economic-based Enhancement or Expansion]. The change in costs for purchases from outside of the PJM Region and sales to outside the PJM Region will be captured, if appropriate. Purchases will be valued at the Load Weighted LMP and sales will be valued at the Generation Weighted LMP.

and

Change in Load Energy Payment = [the annual sum of (the hourly estimated zonal load megawatts for each Zone) * (the hourly estimated zonal Locational Marginal Price for each Zone without the Economic-based Enhancement or Expansion)] – [the annual sum of (the hourly estimated zonal load megawatts for each Zone) * (the hourly estimated zonal Locational Marginal Price for each Zone with the Economic-based Enhancement or Expansion)] – [the change in value of transmission rights for each Zone with the Economic-based Enhancement or Expansion (as measured using currently allocated Auction Revenue Rights plus additional Auction Revenue Rights made available by the proposed acceleration or modification of the planned reliability-based enhancement or expansion or new Economic-based Enhancement or Expansion)]. The Change in the Load Energy Payment shall be the sum of the Change in the Load Energy Payment only of the Zones that show a decrease in the Load Energy Payment.

And

For economic-based enhancements and expansions for which cost responsibility is assigned pursuant to the Tariff, Schedule 12, section (b)(i) the Reliability Pricing Benefit is as follows:

Reliability Pricing Benefit = [.50] * [Change in Total System Capacity Cost] + [.50] * [Change in Load Capacity Payment]

and

For economic-based enhancements or expansions for which cost responsibility is assigned pursuant to the Tariff, Schedule 12, section (b)(v) the Reliability Pricing Benefit is as follows:

Reliability Pricing Benefit = [1] * [Change in Load Capacity Payment]

Change in Total System Capacity Cost = [the sum of (the megawatts that are estimated to be cleared in the Base Residual Auction under the Tariff, Attachment DD) * (the prices that are estimated to be contained in the Sell Offers for each such cleared megawatt without the Economic-based Enhancement or Expansion) * (the number of days in the study year)] – [the sum of (the megawatts that are estimated to be cleared in the Base Residual Auction under the Tariff, Attachment DD) * (the prices that are estimated to be contained in the Sell Offers for each such cleared megawatt with the Economic-based Enhancement or Expansion) * (the number of days in the study year)]

and

Change in Load Capacity Payment = [the sum of (the estimated zonal load megawatts in each Zone) * (the estimated Final Zonal Capacity Prices under the Tariff, Attachment DD without the Economic-based Enhancement or Expansion) * (the number of days in the study year)] – [the sum of (the estimated zonal load megawatts in each Zone) * (the estimated Final Zonal Capacity Prices under the Tariff, Attachment DD with the Economic-based Enhancement or Expansion) * (the number of days in the study year)]. The Change in Load Capacity Payment shall take account of the change in value of Capacity Transfer Rights in each Zone, including any additional Capacity Transfer Rights made available by the proposed acceleration or modification of the planned reliability-based enhancement or expansion or new Economic-based Enhancement or Expansion. The Change in the Load Capacity Payment shall be the sum of the change in the Load Capacity Payment only of the Zones that show a decrease in the Load Capacity Payment.

and

Total Enhancement Cost (except for accelerations of planned reliability-based enhancements or expansions) = the estimated annual revenue requirement for the Economic-based Enhancement or Expansion.

Total Enhancement Cost (for accelerations of planned reliability-based enhancements or expansions) = the estimated change in annual revenue requirement resulting from the acceleration of the planned reliability-based enhancement or expansion, taking account of all of the costs incurred that would not have been incurred but for the acceleration of the planned reliability-based enhancement or expansion.

(e) For informational purposes only, to assist the Office of the Interconnection and the Transmission Expansion Advisory Committee in evaluating the economic benefits of accelerating planned reliability-based enhancements or expansions or of constructing a new Economic-based Enhancement or Expansion, the Office of the Interconnection shall calculate and post on the PJM website the change in the following metrics on a zonal and system-wide basis: (i) total energy production costs (fuel costs, variable O&M costs and emissions costs);(ii) total load energy payments (zonal load MW times zonal load Locational Marginal Price); (iii) total generator revenue from energy production (generator MW times generator Locational Marginal Price); (iv) Financial Transmission Right credits (as measured using currently allocated Auction Revenue Rights plus additional Auction Revenue Rights made available by the proposed acceleration or modification of a planned reliability-based enhancement or expansion or new Economic-based Enhancement or Expansion); (v) marginal loss surplus credit; and (vi) total capacity costs and load capacity payments under the Office of the Interconnection's Commission-approved capacity construct.

(f) To assure that new Economic-based Enhancements or Expansions included in the Regional Transmission Expansion Plan continue to be cost beneficial, the Office of the Interconnection annually shall review the costs and benefits of constructing such enhancements and expansions. In the event that there are changes in these costs and benefits, the Office of the Interconnection shall review the changes in costs and benefits with the Transmission Expansion Advisory Committee and recommend to the PJM Board whether the new Economic-based Enhancements or Expansions continue to provide measurable benefits, as determined in accordance with subsection (d), and should remain in the Regional Transmission Expansion Plan. The annual review of the costs and benefits of constructing new Economic-based Enhancements or Expansions included in the Regional Transmission Expansion Plan shall include review of changes in cost estimates of the Economic-based Enhancement or Expansion, and changes in system conditions, including but not limited to, changes in load forecasts, and anticipated Merchant Transmission Facilities, generation, and demand response, consistent with the requirements of the Operating Agreement, Schedule 6, section 1.5.7(i). The Office of the Interconnection will not be required to review annually the costs and benefits of constructing Economic-based Enhancements or Expansions with capital costs less than $20 million if, based on updated cost estimates and the original benefits, the Benefit/Cost Ratio remains at or above 1.25. The Office of the Interconnection shall no longer be required to review costs and benefits of constructing Economic-based Enhancements and Expansions once: (i) a certificate of public convenience and necessity or its equivalent is granted by the state or relevant regulatory authority in which such enhancements or expansions will be located; or (ii) if a certificate of public convenience and necessity or its equivalent is not required by the state or relevant regulatory authority in which an economic-based enhancement or expansion will be located, once construction activities commence at the project site.

(g) For new economic enhancements or expansions with costs in excess of $50 million, an independent review of such costs shall be performed to assure both consistency of estimating practices and that the scope of the new Economic-based Enhancements or Expansions is consistent with the new Economic-based Enhancements or Expansions as recommended in the market efficiency analysis.

(h) At any time, market participants may submit to the Office of the Interconnection requests to interconnect Merchant Transmission Facilities or generation facilities pursuant to the Tariff, Parts IV and VI that could address an economic constraint. In the event the Office of the Interconnection determines that the interconnection of such facilities would relieve an economic constraint, the Office of the Interconnection may designate the project as a “market solution” and, in the event of such designation, the Tariff, Part VI, Subpart B, section 216, as applicable, shall apply to the project.

(i) The assumptions used in the market efficiency analysis described in subsection (b) and any review of costs and benefits pursuant to subsection (f) shall include, but not be limited to, the following:

(i) Timely installation of Qualifying Transmission Upgrades, that are committed to the PJM Region as a result of any Reliability Pricing

Model Auction pursuant to the Tariff, Attachment DD or any FRR Capacity Plan pursuant to the RAA, Schedule 8.1.

(ii) Availability of Generation Capacity Resources, as defined by the RAA, section 1.33, that are committed to the PJM Region as a result of any Reliability Pricing Model Auction pursuant to the Tariff, Attachment DD or any FRR Capacity Plan pursuant to the RAA, Schedule 8.1.

(iii) Availability of Demand Resources that are committed to the PJM Region as a result of any Reliability Pricing Model Auction pursuant to the Tariff, Attachment DD or any FRR Capacity Plan pursuant to the RAA, Schedule 8.1.

(iv) Addition of Customer Facilities or Generating Facilities, as applicable, pursuant to an executed Interconnection Service Agreement or executed Interim Interconnection Service Agreement for which Interconnection Service Agreement is expected to be executed, or Generating Facilities pursuant to an executed Generation Interconnection Agreement or executed Engineering and Procurement Agreement for which Generation Interconnection Agreement is expected to be executed. Facilities with an executed Facilities Study Agreement or suspended Interconnection Service Agreement, or that have an approved Decision Point II submission, under Tariff Part VII or VIII, as applicable, may be included by the Office of the Interconnection after review with the Transmission Expansion Advisory Committee.

(v) Addition of Customer-Funded Upgrades pursuant to an executed Interconnection Construction Service Agreement or an Upgrade Construction Service Agreement.

(vi) Expected level of demand response over at least the ensuing fifteen years based on analyses that consider historic levels of demand response, expected demand response growth trends, impact of capacity prices, current and emerging technologies.

(vii) Expected levels of potential new generation and generation retirements over at least the ensuing fifteen years based on analyses that consider generation trends based on existing generation on the system, generation in the PJM interconnection queues or Cycles as applicable and Capacity Resource Clearing Prices under the Tariff, Attachment DD. If the Office of the Interconnection finds that the PJM reserve requirement is not met in any of its future year market efficiency analyses then it will model Customer Facilities or Generating Facilities pursuant to an executed Facilities Study Agreement approved Decision Point II submission under Tariff Part VII or VIII, or suspended Interconnection Service Agreement, ranked by their commercial probability. Commercial probability utilizes historical data from the PJM interconnection queues or Cycles as applicable to determine the likelihood of a Customer Facility or Generating Facility, pursuant to an executed Facilities Study Agreement approved Decision Point II submission under Tariff Part VII or VIII, or suspended Interconnection Service Agreement, reaching commercial operation. If the Office of the Interconnection finds that the PJM reserve requirement is not met in any of its future year market efficiency analyses, following inclusion of the Customer Facilities or Generating Facilities discussed above in this section 1.5.7(i)(vii), then it will model adequate future generation based on type and location of generation in existing PJM interconnection queues or Cycles as applicable and, if necessary, add transmission enhancements to address congestion that arises from such modeling.

(viii) Items (i) through (v) will be included in the market efficiency assumptions if qualified for consideration by the PJM Board. In the event that any of the items listed in (i) through (v) above qualify for inclusion in the market efficiency analysis assumptions, however, because of the timing of the qualification the item was not included in the assumptions used in developing the most recent Regional Transmission Expansion Plan, the Office of the Interconnection, to the extent necessary, shall notify any entity constructing an Economic-based Enhancement or Expansion that may be affected by inclusion of such item in the assumptions for the next market efficiency analysis described in subsection (b) and any review of costs and benefits pursuant to subsection (f) that the need for the Economic-based Enhancement or Expansion may be diminished or obviated as a result of the inclusion of the qualified item in the assumptions for the next annual market efficiency analysis or review of costs and benefits.

(j) For informational purposes only, with regard to Economic-based Enhancements or Expansions that are included in the Regional Transmission Expansion Plan pursuant to subsection (d) of this section 1.5.7, the Office of the Interconnection shall perform sensitivity analyses consistent with the Operating Agreement, Schedule 6, section 1.5.3 and shall provide the results of such sensitivity analyses to the Transmission Expansion Advisory Committee.

1.5.8 Development of Long-lead Projects, Short-term Projects, Immediate-need Reliability Projects, and Economic-based Enhancements or Expansions.

(a) **Pre-Qualification Process**.

(a)(1) On September 1 of each year, the Office of the Interconnection shall open a thirty-day pre-qualification window for entities, including existing Transmission Owners and Nonincumbent Developers, to submit to the Office of the Interconnection: (i) applications to pre-qualify as eligible to be a Designated Entity; or (ii) updated information as described in the Operating Agreement, Schedule 6, section 1.5.8(a)(3). Pre-qualification applications shall contain the following information: (i) name and address of the entity; (ii) the technical and engineering qualifications of the entity or its affiliate, partner, or parent company; (iii) the demonstrated experience of the entity or its affiliate, partner, or parent company to develop, construct, maintain, and operate transmission facilities, including a list or other evidence of transmission facilities the entity, its affiliate, partner, or parent company previously developed, constructed, maintained, or operated; (iv) the previous record of the entity or its affiliate, partner, or parent company regarding construction, maintenance, or operation of transmission facilities both inside and outside of the PJM Region; (v) the capability of the entity or its affiliate, partner, or parent company to adhere to standardized construction, maintenance and operating practices; (vi) the financial statements of the entity or its affiliate, partner, or parent company for the most recent fiscal quarter, as well as the most recent three fiscal years, or the period of existence of the entity, if shorter, or such other evidence demonstrating an entity's or its affiliate's, partner's, or parent company's current and expected financial capability acceptable to the Office of the Interconnection; (vii) a commitment by the entity to execute the Consolidated Transmission Owners Agreement, if the entity becomes a Designated Entity; (viii) evidence demonstrating the ability of the entity or its affiliate, partner, or parent company to address and timely remedy failure of facilities; (ix) a description of the experience of the entity or its affiliate, partner, or parent company in acquiring rights of way; and (x) such other supporting information that the Office of Interconnection requires to make the pre-qualification determinations consistent with this Operating Agreement, Schedule 6, section 1.5.8(a).

(a)(2) No later than October 31, the Office of the Interconnection shall notify the entities that submitted pre-qualification applications or updated information during the annual thirty-day pre-qualification window, whether they are, or will continue to be, pre-qualified as eligible to be a Designated Entity. In the event the Office of the Interconnection determines that an entity (i) is not, or no longer will continue to be, pre-qualified as eligible to be a Designated Entity, or (ii) provided insufficient information to determine pre-qualification, the Office of the Interconnection shall inform that the entity it is not pre-qualified and include in the notification the basis for its determination. The entity then may submit additional information, which the Office of the Interconnection shall consider in re-evaluating whether the entity is, or will continue to be, pre-qualified as eligible to be a Designated Entity. If the entity submits additional information by November 30, the Office of the Interconnection shall notify the entity of the results of its re-evaluation no later than December 15. If the entity submits additional information after November 30, the Office of the Interconnection shall use reasonable efforts to re-evaluate the application, with the additional information, and notify the entity of its determination as soon as practicable. No later than December 31, the Office of the Interconnection shall post on the PJM website the list of entities that are pre-qualified as eligible to be Designated Entities. If an entity is notified by the Office of the Interconnection that it does not pre-qualify or will not continue to be pre-qualified as eligible to be a Designated Entity, such entity may request dispute resolution pursuant to the Operating Agreement, Schedule 5.

(a)(3) In order to continue to pre-qualify as eligible to be a Designated Entity, such entity must confirm its information with the Office of the Interconnection no later than three years following its last submission or sooner if necessary as required below. In the event the information on which the entity's pre-qualification is based changes with respect to the upcoming year, such entity must submit to the Office of the Interconnection all updated information during the annual thirty-day pre-qualification window and the timeframes for notification in the Operating Agreement, Schedule 6, section 1.5.8(a)(2) shall apply. In the event the information on which the entity's pre-qualification is based changes with respect to the current year, such entity must submit to the Office of the Interconnection all updated information at the time the information changes and the Office of the Interconnection shall use reasonable efforts to evaluate the updated information and notify the entity of its determination as soon as practicable.

(a)(4) As determined by the Office of the Interconnection, an entity may submit a pre-qualification application outside the annual thirty-day pre-qualification window for good cause shown. For a pre-qualification application received outside of the annual thirty-day pre-qualification window, the Office of the Interconnection shall use reasonable efforts to process the application and notify the entity as to whether it pre-qualifies as eligible to be a Designated Entity as soon as practicable.

(a)(5) To be designated as a Designated Entity for any project proposed pursuant to the Operating Agreement, Schedule 6, section 1.5.8, existing Transmission Owners and Nonincumbent Developers must be pre-qualified as eligible to be a Designated Entity pursuant to this Operating Agreement, Schedule 6, section 1.5.8(a). This Operating Agreement, Schedule 6, section 1.5.8(a) shall not apply to entities that desire to propose projects for inclusion in the recommended plan but do not intend to be a Designated Entity.

(b) **Posting of Transmission System Needs**. Following identification of existing and projected limitations on the Transmission System's physical, economic and/or operational capability or performance in the enhancement and expansion analysis process described in this Operating Agreement, Schedule 6 and the PJM Manuals, and after consideration of non-transmission solutions, and prior to evaluating potential enhancements and expansions to the Transmission System, the Office of the Interconnection shall publicly post on the PJM website all transmission need information, including violations, system conditions, and economic constraints, and Public Policy Requirements, including (i) federal Public Policy Requirements; (ii) state Public Policy Requirements identified or agreed-to by the states in the PJM Region, which could be addressed by potential Short-term Projects, Long-lead Projects or projects determined pursuant to the State Agreement Approach in the Operating Agreement, Schedule 6, section 1.5.9, as applicable. Such posting shall support the role of the Subregional RTEP Committees in the development of the Local Plans and support the role of the Transmission Expansion Advisory Committee in the development of the Regional Transmission Expansion Plan. The Office of the Interconnection also shall post an explanation regarding why transmission needs associated with federal or state Public Policy Requirements were identified but were not selected for further evaluation.

(c) **Project Proposal Windows**. The Office of the Interconnection shall provide notice to stakeholders of a 60-day proposal window for Short-term Projects and a 120-day proposal window for Long-lead Projects and Economic-based Enhancements or Expansions. The specifics regarding whether or not the following types of violations or projects are subject to a proposal window are detailed in the Operating Agreement, Schedule 6, section 1.5.8(m) for Immediate-need Reliability Projects; Operating Agreement, Schedule 6, section 1.5.8(n) for reliability violations on transmission facilities below 200 kV; and Operating Agreement, Schedule 6, section 1.5.8(p) for violations on transmission substation equipment. The Office of Interconnection may shorten a proposal window should an identified need require a shorter proposal window to meet the needed in-service date of the proposed enhancements or expansions, or extend a proposal window as needed to accommodate updated information regarding system conditions. The Office of the Interconnection may shorten or lengthen a proposal window that is not yet opened based on one or more of the following criteria: (1) complexity of the violation or system condition; and (2) whether there is sufficient time remaining in the relevant planning cycle to accommodate a standard proposal window and timely address the violation or system condition. The Office of the Interconnection may lengthen a proposal window that already is opened based on or more of the following criteria: (i) changes in assumptions or conditions relating to the underlying need for the project, such as load growth or Reliability Pricing Model auction results; (ii) availability of new or changed information regarding the nature of the violations and the facilities involved; and (iii) time remaining in the relevant proposal window. In the event that the Office of the Interconnection determines to lengthen or shorten a proposal window, it will post on the PJM website the new proposal window period and an explanation as to the reasons for the change in the proposal window period. During these windows, the Office of the Interconnection will accept proposals from existing Transmission Owners and Nonincumbent Developers for potential enhancements or expansions to address the posted violations, system conditions, economic constraints, as well as Public Policy Requirements.

(c)(1) All proposals submitted in the proposal windows must contain: (i) the name and address of the proposing entity; (ii) a statement whether the entity intends to be the Designated Entity for the proposed project; (iii) the location of proposed project, including source and sink, if applicable; (iv) relevant engineering studies, and other relevant information as described in the PJM Manuals pertaining to the proposed project; (v) a detailed explanation regarding how the following alternative transmission technologies were analyzed in developing the proposal, and why each of these technologies were included in, or excluded from, the proposal: (a) dynamic line ratings, (b) advanced power flow control devices, (c) advanced conductors, and (d) transmission switching technologies; (vi) a proposed initial construction schedule including projected dates on which needed permits are required to be obtained in order to meet the required in-service date; (vii) cost estimates and analyses that provide sufficient detail for the Office of Interconnection to review and analyze the proposed cost of the project; and (viii) with the exception of project proposals submitted with cost estimates of $5 million or less, a $5,000 non-refundable deposit must be included with each project proposal submitted by a proposing entity that indicates an intention to be the Designated Entity.

(c)(1)(i) In addition, any proposing entity indicating its intention to be the Designated Entity will be responsible for and must pay all actual costs incurred by the

Transmission Provider to evaluate the submitted project proposal. To the extent the Transmission Provider incurs costs to evaluate multiple submitted project proposals where such costs are not severable by individual project proposal, the Transmission Provider shall invoice equal shares of the non-severable costs among the project proposals that cause such non-severable costs to be incurred. Notwithstanding this method of invoicing non-severable costs, non-severable costs will be jointly and severally owed by the proposing entities that cause such costs to be incurred.

(c)(1)(ii) All non-refundable deposits will be credited towards the actual costs incurred by the Transmission Provider as a result of the evaluation of a submitted project proposal.

(c)(1)(iii) Following the close of a proposal window but before the Transmission Provider incurs any third-party consultant work costs to evaluate a submitted project proposal, the Transmission Provider will issue to the proposing entity an initial invoice seeking payment of estimated costs to evaluate each submitted project proposal. The estimated costs will be determined by considering the: potential cost of consultant work, historical estimates for project proposals of similar scope, complexity and nature of the need, and/or technology and nature of the project proposal. The Transmission Provider may issue additional invoices to the proposing entity prior to the completion of the evaluation activities associated with a project proposal if the Transmission Provider receives updated actual cost information and/or upon consideration of the factors specified in this section.

(c)(1)(iv) At the completion of the evaluation activities associated with a project proposal, the Transmission Provider will reconcile the actual costs with monies paid and, to the extent necessary, issue either a final invoice or refund.

(c)(1)(v) The proposing party must pay any invoiced costs within fifteen (15) calendar days of the Transmission Provider sending the invoice to the proposing entity or its agent. For good cause shown, this fifteen (15) calendar day time period may be extended by the Transmission Provider. If the proposing entity fails to pay any invoice within the time period specified and/or extended by the Transmission Provider in accordance with this section, the proposing entity's pre-qualification status may be suspended and the proposing entity will be ineligible to be a Designated Entity for any projects that do not yet have an executed Designated Entity Agreement. Such a suspension and/or ineligibility will remain in place until the proposing entity pays in full all outstanding monies owed to the Transmission Provider as a result of the evaluation of the proposing entity's project proposal(s).

(c)(2) Proposals from all entities (both existing Transmission Owners and Nonincumbent Developers) that indicate the entity intends to be a Designated Entity, also must contain information to the extent not previously provided pursuant to the Operating Agreement, Schedule 6, section 1.5.8(a) demonstrating: (i) technical and engineering qualifications of the entity, its affiliate, partner, or parent company relevant to construction, operation, and maintenance of the proposed project; (ii) experience of the entity, its affiliate, partner, or parent company in developing, constructing, maintaining, and operating the type of transmission facilities contained in the project proposal; (iii) the emergency response capability of the entity that will be operating and maintaining the proposed project; (iv) evidence of transmission facilities the entity, its affiliate, partner, or parent company previously constructed, maintained, or operated; (v) the ability of the entity or its affiliate, partner, or parent company to obtain adequate financing relative to the proposed project, which may include a letter of intent from a financial institution approved by the Office of the Interconnection or such other evidence of the financial resources available to finance the construction, operation, and maintenance of the proposed project; (vi) the managerial ability of the entity, its affiliate, partner, or parent company to contain costs and adhere to construction schedules for the proposed project, including a description of verifiable past achievement of these goals; (vii) a demonstration of other advantages the entity may have to construct, operate, and maintain the proposed project, including any binding cost commitment proposal the entity may wish to submit; and (viii) any other information that may assist the Office of the Interconnection in evaluating the proposed project. To the extent that an entity submits a cost containment proposal the entity shall submit sufficient information for the Office of Interconnection to determine the binding nature of the proposal with respect to critical elements of project development. PJM may not alter the requirements for proposal submission to require the submission of a binding cost containment proposal, in whole or in part, or otherwsise mandate or unilaterally alter the terms of any such proposal or the requirements for proposal submission, the submission of any such proposals at all times remaining voluntary.

(c)(3) The Office of the Interconnection may request additional reports or information from an existing Transmission Owner or Nonincumbent Developers that it determines are reasonably necessary to evaluate its specific project proposal pursuant to the criteria set forth in the Operating Agreement, Schedule 6, sections 1.5.8(e) and 1.5.8(f). If the Office of the Interconnection determines any of the information provided in a proposal is deficient or it requires additional reports or information to analyze the submitted proposal, the Office of the Interconnection shall notify the proposing entity of such deficiency or request. Within 10 Business Days of receipt of the notification of deficiency and/or request for additional reports or information, or other reasonable time period as determined by the Office of the Interconnection, the proposing entity shall provide the necessary information.

(c)(4) The request for additional reports or information by the Office of the Interconnection pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c)(3) may be used only to clarify a proposed project as submitted. In response to the Office of the Information's request for additional reports or information, the proposing entity (whether an existing Transmission Owner or Nonincumbent Developer) may not submit a new project proposal or modifications to a proposed project once the proposal window is closed. In the event that the proposing entity fails to timely cure the deficiency or provide the requested reports or information regarding a proposed project, the proposed project will not be considered for inclusion in the recommended plan.

(c)(5) Within 30 days of the closing of the proposal window, the Office of the Interconnection may notify the proposing entity that additional per project fees are required if the Office of the Interconnection determines the proposing entity's submittal includes multiple project proposals. Within 10 Business Days of receipt of the notification of insufficient funds by the Office of the Interconnection, the proposing entity shall submit such funds or notify the

Office of the Interconnection which of the project proposals the Office of the Interconnection should evaluate based on the fee(s) submitted.

(d) **Posting and Review of Projects**. Following the close of a proposal window, the Office of the Interconnection shall post on the PJM website all proposals submitted pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c). All proposals addressing state Public Policy Requirements shall be provided to the applicable states in the PJM Region for review and consideration as a Supplemental Project or a state public policy project consistent with the Operating Agreement, Schedule 6, section 1.5.9. The Office of the Interconnection shall review all proposals submitted during a proposal window and determine and present to the Transmission Expansion Advisory Committee the proposals that merit further consideration for inclusion in the recommended plan. In making this determination, the Office of the Interconnection shall consider the criteria set forth in the Operating Agreement, Schedule 6, sections 1.5.8(e) and 1.5.8(f). The Office of the Interconnection shall post on the PJM website and present to the Transmission Expansion Advisory Committee for review and comment descriptions of the proposed enhancements and expansions, including any proposed Supplemental Projects or state public policy projects identified by a state(s). Based on review and comment by the Transmission Expansion Advisory Committee, the Office of the Interconnection may, if necessary conduct further study and evaluation. The Office of the Interconnection shall post on the PJM website and present to the Transmission Expansion Advisory Committee the revised enhancements and expansions for review and comment. After consultation with the Transmission Expansion Advisory Committee, the Office of the Interconnection shall determine the more efficient or cost-effective transmission enhancements and expansions for inclusion in the recommended plan consistent with this Operating Agreement, Schedule 6.

(e) **Criteria for Considering Inclusion of a Project in the Recommended Plan**. In determining whether a Short-term Project or Long-lead Project proposed pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c), individually or in combination with other Short-term Projects or Long-lead Projects, is the more efficient or cost-effective solution and therefore should be included in the recommended plan, the Office of the Interconnection, taking into account sensitivity studies and scenario analyses considered pursuant to the Operating Agreement, Schedule 6, section 1.5.3, shall consider the following criteria, to the extent applicable: (i) the extent to which a Short-term Project or Long-lead Project would address and solve the posted violation, system condition, or economic constraint; (ii) the extent to which the relative benefits of the project meets a Benefit/Cost Ratio Threshold of at least 1.25:1 as calculated pursuant to the Operating Agreement, Schedule 6, section 1.5.7(d); (iii) the extent to which the Short-term Project or Long-lead Project would have secondary benefits, such as addressing additional or other system reliability, operational performance, economic efficiency issues or federal Public Policy Requirements or state Public Policy Requirements identified by the states in the PJM Region; and (iv) the ability to timely complete the project, and project development feasibility; and (v) other factors such as cost-effectiveness, including the quality and effectiveness of any voluntary-submitted binding cost commitment proposal related to Transmission Facilities which caps project construction costs (either in whole or in part), project total return on equity (including incentive adders), or capital structure. In scrutinizing the cost of project proposals, the Office of Interconnection shall determine for each project finalist's proposal, including any Transmission Owner Upgrades, the comparative risks to be borne by ratepayers as a result of the proposal's binding cost commitment or the use of non-binding cost estimates. Such comparative analysis shall detail, in a clear and transparent manner, the method by which the Office of Interconnection scrutinized the cost and overall cost-effectiveness of each finalist's proposal, including any binding cost commitments. Such comparative analysis shall be presented to the TEAC for review and comment. In evaluating any cost, ROE and/or capital structure proposal, PJM is not making a determination that the cost, ROE or capital structure results in just and reasonable rates, which shall be addressed in the required rate filing with the FERC. Stakeholders seeking to dispute a particular ROE analysis utilized in the selection process may address such disputes with the Designated Entity in the applicable rate proceeding where the Designated Entity seeks approval of such rates from the Commission. PJM may modify the technical specifications of a proposal, as outlined in the PJM Manuals, which may result in the modified proposal being determined to be the more efficient or cost-effective proposal for recommendation to the PJM Board. Neither PJM, the Designated Entity nor any stakeholders are waiving any of their respective FPA section 205 or 206 rights through this process. Challenges to the Designated Entity Agreements are subject to the just and reasonable standard.

(f) **Entity-Specific Criteria Considered in Determining the Designated Entity for a Project**. In determining whether the entity proposing a Short-term Project, Long-lead Project or Economic-based Enhancement or Expansion recommended for inclusion in the plan shall be the Designated Entity, the Office of the Interconnection shall consider: (i) whether in its proposal, the entity indicated its intent to be the Designated Entity; (ii) whether the entity is pre-qualified to be a Designated Entity pursuant to Operating Agreement, Schedule 6, section 1.5.8(a); (iii) information provided either in the proposing entity's submission pursuant to the Operating Agreement, Schedule 6, section 1.5.8(a) or 1.5.8(c)(2) relative to the specific proposed project that demonstrates: (1) the technical and engineering experience of the entity or its affiliate, partner, or parent company, including its previous record regarding construction, maintenance, and operation of transmission facilities relative to the project proposed; (2) ability of the entity or its affiliate, partner, or parent company to construct, maintain, and operate transmission facilities, as proposed, (3) capability of the entity to adhere to standardized construction, maintenance, and operating practices, including the capability for emergency response and restoration of damaged equipment; (4) experience of the entity in acquiring rights of way; (5) evidence of the ability of the entity, its affiliate, partner, or parent company to secure a financial commitment from an approved financial institution(s) agreeing to finance the construction, operation, and maintenance of the project, if it is accepted into the recommended plan; and (iv) any other factors that may be relevant to the proposed project, including but not limited to whether the proposal includes the entity's previously designated project(s) included in the plan.

(g) **Procedures if No Long-lead Project or Economic-based Enhancement or Expansion Proposal is Determined to be the More Efficient or Cost-Effective Solution**. If the Office of the Interconnection determines that none of the proposed Long-lead Projects received during the Long-lead Project proposal window would be the more efficient or cost-effective solution to resolve a posted violation, or system condition, the Office of the Interconnection may re-evaluate and re-post on the PJM website the unresolved violations, or system conditions pursuant to the Operating Agreement, Schedule 6, section 1.5.8(b), provided such re-evaluation and re-posting would not affect the ability of the Office of the Interconnection to timely address the identified reliability need. In the event that re-posting and conducting such re-evaluation would prevent the Office of the Interconnection from timely addressing the existing and projected limitations on the Transmission System that give rise to the need for an enhancement or expansion, the Office of the Interconnection shall propose a project to solve the posted violation, or system condition for inclusion in the recommended plan and shall present such project to the Transmission Expansion Advisory Committee for review and comment. The Transmission Owner(s) in the Zone(s) where the project is to be located shall be the Designated Entity(ies) for such project. In determining whether there is insufficient time for re-posting and re-evaluation, the Office of the Interconnection shall develop and post on the PJM website a transmission solution construction timeline for input and review by the Transmission Expansion Advisory Committee that will include factors such as, but not limited to: (i) deadlines for obtaining regulatory approvals, (ii) dates by which long lead equipment should be acquired, (iii) the time necessary to complete a proposed solution to meet the required in-service date, and (iv) other time-based factors impacting the feasibility of achieving the required in-service date. Based on input from the Transmission Expansion Advisory Committee and the time frames set forth in the construction timeline, the Office of the Interconnection shall determine whether there is sufficient time to conduct a re-evaluation and re-post and timely address the existing and projected limitations on the Transmission System that give rise to the need for an enhancement or expansion. To the extent that an economic constraint remains unaddressed, the economic constraint will be re-evaluated and re-posted.

(h) **Procedures if No Short-term Project Proposal is Determined to be the More Efficient or Cost-Effective Solution**. If the Office of the Interconnection determines that none of the proposed Short-term Projects received during a Short-term Project proposal window would be the more efficient or cost-effective solution to resolve a posted violation or system condition, the Office of the Interconnection shall propose a Short-term Project to solve the posted violation, or system condition for inclusion in the recommended plan and will present such Short-term Project to the Transmission Expansion Advisory Committee for review and comment. The Transmission Owner(s) in the Zone(s) where the Short-term Project is to be located shall be the Designated Entity(ies) for the Project.

(i) **Notification of Designated Entity**. Within 15 Business Days of PJM Board approval of the Regional Transmission Expansion Plan, the Office of the Interconnection shall notify the entities that have been designated as the Designated Entities for projects included in the Regional Transmission Expansion Plan of such designations. In such notices, the Office of the Interconnection shall provide: (i) the needed in-service date of the project; and (ii) a date by which all necessary state approvals should be obtained to timely meet the needed in-service date of the project. The Office of the Interconnection shall use these dates as part of its on-going monitoring of the progress of the project to ensure that the project is completed by its needed in-service date.

(j) **Acceptance of Designation**. Within 30 days of receiving notification of its designation as a Designated Entity, the existing Transmission Owner or Nonincumbent Developer shall notify the Office of the Interconnection of its acceptance of such designation and submit to the Office of the Interconnection a development schedule, which shall include, but not be limited to, milestones necessary to develop and construct the project to achieve the required in-service date, including milestone dates for obtaining all necessary authorizations and approvals, including but not limited to, state approvals. For good cause shown, the Office of the Interconnection may extend the deadline for submitting the development schedule. The Office of the Interconnection then shall review the development schedule and within 15 days or other reasonable time as required by the Office of the Interconnection: (i) notify the Designated Entity of any issues regarding the development schedule identified by the Office of the Interconnection that may need to be addressed to ensure that the project meets its needed in-service date; and (ii) tender to the Designated Entity an executable Designated Entity Agreement setting forth the rights and obligations of the parties. To retain its status as a Designated Entity, within 60 days of receiving an executable Designated Entity Agreement (or other such period as mutually agreed upon by the Office of the Interconnection and the Designated Entity), the Designated Entity (both existing Transmission Owners and Nonincumbent Developers) shall submit to the Office of the Interconnection a letter of credit as determined by the Office of Interconnection to cover the incremental costs of construction resulting from reassignment of the project, and return to the Office of the Interconnection an executed Designated Entity Agreement containing a mutually agreed upon development schedule. Notwithstanding the foregoing, a Designated Entity is not required to provide a letter of credit to the extent (i) the Designated Entity is a Transmission Owner and (ii) the project was selected (A) pursuant to Operating Agreement, Schedule 6, sections 1.5.8(g), 1.5.8(h), or 1.5.8(m)(1); or (B) through a proposal window conducted pursuant to Operating Agreement, Schedule 6, section 1.5.8(c) in which no Nonincumbent Developer submitted a competing proposal to address the need identified by the Office of the Interconnection. In the alternative, the Designated Entity may request dispute resolution pursuant to the Operating Agreement, Schedule 5, or request that the Designated Entity Agreement be filed unexecuted with the Commission.

(k) **Failure of Designated Entity to Meet Milestones**. In the event the Designated Entity fails to comply with one or more of the requirements of the Operating Agreement, Schedule 6, section 1.5.8(j); or fails to meet a milestone in the development schedule set forth in the Designated Entity Agreement that causes a delay of the project's in-service date, the Office of the Interconnection shall re-evaluate the need for the Short-term Project or Long-lead Project, and based on that re-evaluation may: (i) retain the Short-term Project or Long-lead Project in the Regional Transmission Expansion Plan; (ii) remove the Short-term Project or Long-lead Project from the Regional Transmission Expansion Plan; or (iii) include an alternative solution in the Regional Transmission Expansion Plan. If the Office of the Interconnection retains the Short-term or Long-term Project in the Regional Transmission Expansion Plan, it shall determine whether the delay is beyond the Designated Entity's control and whether to retain the Designated Entity or to designate the Transmission Owner(s) in the Zone(s) where the project is located as Designated Entity(ies) for the Short-term Project or Long-lead Project. If the Designated Entity is the Transmission Owner(s) in the Zone(s) where the project is located, the Office of the Interconnection shall seek recourse through the Consolidated Transmission Owners Agreement or FERC, as appropriate. Any modifications to the Regional Transmission Expansion Plan pursuant to this section shall be presented to the Transmission Expansion Advisory Committee for review and comment and approved by the PJM Board.

(l) **Transmission Owners Required to be the Designated Entity**. Notwithstanding anything to the contrary in this Operating Agreement, Schedule 6, section 1.5.8, in all events, the Transmission Owner(s) in whose Zone(s) a project proposed pursuant to the Operating

Agreement, Schedule 6, section 1.5.8(c) is to be located will be the Designated Entity for the project, when the Short-term Project or Long-lead Project is: (i) a Transmission Owner Upgrade, including any upgrade using an alternative transmission technology; (ii) located solely within a Transmission Owner's Zone and the costs of the project are allocated solely to the Transmission Owner's Zone; (iii) located solely within a Transmission Owner's Zone and is not selected in the Regional Transmission Expansion Plan for purposes of cost allocation; or (iv) proposed to be located on a Transmission Owner's existing right of way and the project would alter the Transmission Owner's use and control of its existing right of way under state law. Transmission Owner shall be the Designated Entity when required by state law, regulation or administrative agency order with regard to enhancements or expansions or portions of such enhancements or expansions located within that state.

(m) **Immediate-need Reliability Projects**:

(m)(1) Pursuant to the expansion planning process set forth in Operating Agreement, Schedule 6, sections 1.5.1 through 1.5.6, the Office of the Interconnection shall identify immediate reliability needs that must be addressed within three years or less. For those immediate reliability needs for which PJM determines a proposal window may not be feasible, PJM shall identify and post such immediate need reliability criteria violations and system conditions for review and comment by the Transmission Expansion Advisory Committee and other stakeholders. Following review and comment, the Office of the Interconnection shall develop Immediate-need Reliability Projects for which a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(m)(2) is infeasible. The Office of the Interconnection shall consider the following factors in determining the infeasibility of such a proposal window: (i) nature of the reliability criteria violation; (ii) nature and type of potential solution required; and (iii) projected construction time for a potential solution to the type of reliability criteria violation to be addressed. The Office of the Interconnection shall post on the PJM website for review and comment by the Transmission Expansion Advisory Committee and other stakeholders descriptions of the Immediate-need Reliability Projects for which a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(m)(2) is infeasible. Stakeholders shall be afforded no less than ten days to review Immediate-need Reliability Project materials prior to providing comments at stakeholder meetings. However, PJM may review Immediate-need Reliability Project materials with stakeholders without the requisite ten-day notice so long as: (i) stakeholders do not object to reviewing the materials or (ii) PJM identifies in its posting to the meeting materials extenuating circumstances identified by PJM that require review of the materials at the stakeholder meeting. The descriptions shall include an explanation of the decision to designate the Transmission Owner as the Designated Entity for the Immediate-need Reliability Project rather than conducting a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(m)(2), including an explanation of the time-sensitive need for the Immediate-need Reliability Project, other transmission and non-transmission options that were considered but concluded would not sufficiently address the immediate reliability need, the circumstances that generated the immediate reliability need, and why the immediate reliability need was not identified earlier. After the descriptions are posted on the PJM website, stakeholders shall have reasonable opportunity to provide comments to the Office of the Interconnection. All comments received by the Office of the Interconnection shall be publicly available on the PJM website. Based on the comments received from stakeholders and the review by Transmission Expansion Advisory Committee, the Office of the Interconnection shall, if necessary, conduct further study and evaluation and post a revised recommended plan for review and comment by the Transmission Expansion Advisory Committee. The PJM Board shall approve the Immediate-need Reliability Projects for inclusion in the recommended plan. In January of each year, the Office of the Interconnection shall post on the PJM website and file with the Commission for informational purposes a list of the Immediate-need Reliability Projects for which an existing Transmission Owner was designated in the prior year as the Designated Entity in accordance with this Operating Agreement, Schedule 6, section 1.5.8(m)(1). The list shall include the need-by date of Immediate-need Reliability Project and the date the Transmission Owner actually energized the Immediate-need Reliability Project.

(m)(2) If, in the judgment of the Office of the Interconnection, there is sufficient time for the Office of the Interconnection to accept proposals in a shortened proposal window for Immediate-need Reliability Projects, the Office of the Interconnection shall post on the PJM website the violations and system conditions that could be addressed by Immediate-need Reliability Project proposals, including an explanation of the time-sensitive need for an Immediate-need Reliability Project and provide notice to stakeholders of a shortened proposal window. Proposals must contain the information required in the Operating Agreement, Schedule 6, section 1.5.8(c) and, if the entity is seeking to be the Designated Entity, such entity must have pre-qualified to be a Designated Entity pursuant to the Operating Agreement, Schedule 6, section 1.5.8(a). In determining the more efficient or cost-effective proposed Immediate-need Reliability Project for inclusion in the recommended plan, the Office of the Interconnection shall consider the extent to which the proposed Immediate-need Reliability Project, individually or in combination with other Immediate-need Reliability Projects, would address and solve the posted violations or system conditions and other factors such as cost-effectiveness, the ability of the entity to timely complete the project, and project development feasibility in light of the required need. After PJM Board approval, the Office of the Interconnection, in accordance with the Operating Agreement, Schedule 6, section 1.5.8(i), shall notify the entities that have been designated as Designated Entities for Immediate-need Projects included in the Regional Transmission Expansion Plan of such designations. Designated Entities shall accept such designations in accordance with the Operating Agreement, Schedule 6, section 1.5.8(j). In the event that (i) the Office of the Interconnection determines that no proposal resolves a posted violation or system condition; (ii) the proposing entity is not selected to be the Designated Entity; (iii) an entity does not accept the designation as a Designated Entity; or (iv) the Designated Entity fails to meet milestones that would delay the in-service date of the Immediate-need Reliability Project, the Office of the Interconnection shall develop and recommend an Immediate-need Reliability Project to solve the violation or system needs in accordance with the Operating Agreement, Schedule 6, section 1.5.8(m)(1).

(n) **Reliability Violations on Transmission Facilities Below 200 kV.** Pursuant to the expansion planning process set forth in the Operating Agreement, Schedule 6, sections 1.5.1 through 1.5.6, the Office of the Interconnection shall identify reliability violations on facilities below 200 kV. The Office of the Interconnection shall not post such a violation pursuant to the Operating Agreement, Schedule 6, section 1.5.8(b) for inclusion in a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c) unless the identified violation(s) satisfies one of the following exceptions: (i) the reliability violations are thermal overload violations identified on multiple transmission lines and/or transformers rated below 200 kV that are impacted by a common contingent element, such that multiple reliability violations could be addressed by one or more solutions, including but not limited to a higher voltage solution; or (ii) the reliability violations are thermal overload violations identified on multiple transmission lines and/or transformers rated below 200 kV and the Office of the Interconnection determines that given the location and electrical features of the violations one or more solutions could potentially address or reduce the flow on multiple lower voltage facilities, thereby eliminating the multiple reliability violations. If the reliability violation is identified on multiple facilities rated below 200 kV that are determined by the Office of the Interconnection to meet one of the two exceptions stated above, the Office of the Interconnection shall post on the PJM website the reliability violations to be included in a proposal window consistent with the Operating Agreement, Schedule 6, section 1.5.8(c). If the Office of the Interconnection determines that the identified reliability violations do not satisfy either of the two exceptions stated above, the Office of the Interconnection shall develop a solution to address the reliability violation on below 200 kV Transmission Facilities that will not be included in a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c). The Office of Interconnection shall post on the PJM website for review and comment by the Transmission Expansion Advisory Committee and other stakeholders descriptions of the below 200 kV reliability violations that will not be included in a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c). The descriptions shall include an explanation of the decision to not include the below 200 kV reliability violation(s) in Operating Agreement, Schedule 6, section 1.5.8(c) proposal window, a description of the facility on which the violation(s) is found, the Zone in which the facility is located, and notice that such construction responsibility for and ownership of the project that resolves such below 200 kV reliability violation will be designated to the incumbent Transmission Owner. After the descriptions are posted on the PJM website, stakeholders shall have reasonable opportunity to provide comments for consideration by the Office of the Interconnection. With the exception of Immediate-need Reliability Projects under the Operating Agreement, Schedule 6, section 1.5.8(m), PJM will not select an above 200 kV solution for inclusion in the recommended plan that would address a reliability violation on a below 200 kV transmission facility without posting the violation for inclusion in a proposal window consistent with the Operating Agreement, Schedule 6, section 1.5.8(c). All written comments received by the Office of the Interconnection shall be publicly available on the PJM website.

(o) **[Reserved]**

(p) **Thermal Reliability Violations on Transmission Substation Equipment.** Pursuant to the regional transmission expansion planning process set forth in the Operating Agreement, Schedule 6, sections 1.5.1 through 1.5.6, the Office of the Interconnection shall identify thermal reliability violations on existing transmission substation equipment. The Office of the Interconnection shall not post such thermal reliability violations pursuant to the Operating Agreement, Schedule 6, section 1.5.8(b) for inclusion in a proposal window pursuant to the Operating Agreement, Schedule 6, section 1.5.8(c) if the Office of the Interconnection determines that the reliability violations would be more efficiently addressed by an upgrade to replace in kind transmission substation equipment with higher rated equipment, excluding power transmission transformers, but including station service transformers and instrument transformers. If the Office of the Interconnection determines that the reliability violation does not meet the exemption stated above, the Office of the Interconnection shall post on the PJM website the reliability violations to be included in a proposal window consistent with the Operating Agreement, Schedule 6, section 1.5.8(c). If the Office of the Interconnection determines that the identified thermal reliability violations satisfy the above exemption to the proposal window process, the Office of the Interconnection shall post on the PJM website for review and comment by the Transmission Expansion Advisory Committee and other stakeholders descriptions of the transmission substation equipment thermal reliability violations that will not be included in a proposal window pursuant to Operating Agreement, Schedule 6, section 1.5.8(c). The descriptions shall include an explanation of the decision to not include the transmission substation equipment thermal reliability violation(s) in Operating Agreement, Schedule 6, section 1.5.8(c) proposal window, a description of the facility on which the thermal violation(s) is found, the Zone in which the facility is located, and notice that such construction responsibility for and ownership of the project that resolves such transmission substation equipment thermal violations will be designated to the incumbent Transmission Owner. After the descriptions are posted on the PJM website, stakeholders shall have reasonable opportunity to provide comments for consideration by the Office of the Interconnection. All written comments received by the Office of the Interconnection shall be publicly available on the PJM website.

(q) **Interconnection-Related Transmission Enhancements or Expansions Requiring Network Upgrades.** Pursuant to the regional transmission expansion process set forth in the Operating Agreement, Schedule 6, sections 1.5.1 through 1.5.6, the Office of Interconnection shall evaluate for selection transmission enhancements or expansions to address interconnection-related needs that have been identified as requiring Network Upgrades where (i) the Office of Interconnection has identified the interconnection-related transmission need in System Impact Studies in at least two interconnection Cycles conducted under Tariff, Part VIII; (ii) the identified Network Upgrade has a voltage of at least 200 kV and an estimated cost of at least $30 million; (iii) the New Service Requests associated with the identified interconnection-related transmission need are withdrawn, and no more than five calendar years have passed between the date of the earlier New Service Request and the later New Service Request; (iv) the identified Network Upgrade is not included in an executed or unexecuted Generator Interconnection Agreement; and (v) the withdrawn New Service Requests associated with the identified interconnection-related transmission need occurred no more than seven years prior to the commencement date of initiation of the current enhancement and expansion study process as set forth in Operating Agreement, Schedule 6, section 1.5.1. The Office of Interconnection need not evaluate an interconnection-related transmission need that has been evaluated in a previous enhancement and expansion study process. The Office of the Interconnection shall post on the PJM website all interconnection-related transmission needs that meet the criteria of this section to be included in a proposal window consistent with the Operating Agreement, Schedule 6, section 1.5.8(c).

1.5.9 State Agreement Approach.

(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. As determined by the authorized state governmental entities, such transmission enhancements or expansions may be included in the recommended plan, either as a (i) Supplemental Project or (ii) state public policy project, which is a transmission enhancement or expansion, the costs of which will be recovered pursuant to a FERC-accepted cost allocation proposed by agreement of one or more states and voluntarily agreed to by those state(s). All costs related to a state public policy project or Supplemental Project included in the Regional Transmission Expansion Plan to address state Public Policy Requirements pursuant to this Section shall be recovered from customers in a state(s) in the PJM Region that agrees to be responsible for the projects. No such costs shall be recovered from customers in a state that did not agree to be responsible for such cost allocation. A state public policy project will be included in the Regional Transmission Expansion Plan for cost allocation purposes only if there is an associated FERC-accepted allocation permitting recovery of the costs of the state public policy project consistent with this Section.

(b) Subject to any designation reserved for Transmission Owners in the Operating Agreement, Schedule 6, section 1.5.8(l), the state(s) responsible for cost allocation for a Supplemental Project or a state public policy project in accordance with the Operating Agreement, Schedule 6, section 1.5.9(a) may submit to the Office of the Interconnection the entity(ies) to construct, own, operate and maintain the state public policy project from a list of entities supplied by the Office of the Interconnection that pre-qualified to be Designated Entities pursuant to the Operating Agreement, Schedule 6, section 1.5.8(a).

1.5.10 Multi-Driver Project.

(a) When a proposal submitted by an existing Transmission Owner or Nonincumbent Developer pursuant to Operating Agreement, Schedule 6, section 1.5.8(c) meets the definition of a Multi-Driver Project and is designated to be included in the Regional Transmission Expansion Plan for purposes of cost allocation, the Office of the Interconnection shall designate the Designated Entity for the project as follows: (i) if the Multi-Driver Project does not contain a state Public Policy Requirement component, the Office of the Interconnection shall designate the Designated Entity pursuant to the criteria in the Operating Agreement, Schedule 6, section 1.5.8; or (ii) if the Multi-Driver Project contains a state Public Policy Requirement component, the Office of the Interconnection shall evaluate potential Designated Entity candidates based on the criteria in the Operating Agreement, Schedule 6, section 1.5.8, and provide its evaluation to and elicit feedback from the sponsoring state governmental entities responsible for allocation of all costs of the proposed state Public Policy Requirement component ("state governmental entity(ies)") regarding its evaluation. Based on its evaluation of the Operating Agreement, Schedule 6, section 1.5.8 criteria and consideration of the feedback from the sponsoring state governmental entity(ies), the Office of the Interconnection shall designate the Designated Entity for the Multi-Driver Project and notify such entity consistent with the Operating Agreement, Schedule 6, section 1.5.8(i). A Multi-Driver Project may be based on proposals that consist of (1) newly proposed transmission enhancements or expansions; (2) additions to, or modifications of, transmission enhancements or expansions already selected for inclusion in the Regional Transmission Expansion Plan; and/or (3) one or more transmission enhancements or expansions already selected for inclusion in the Regional Transmission Expansion Plan.

(b) A Multi-Driver Project may contain an enhancement or expansion that addresses a state Public Policy Requirement component only if it meets the requirements set forth in the

Operating Agreement, Schedule 6, section 1.5.9(a) and its cost allocations are established consistent with the Tariff, Schedule 12, section (b)(xii)(B).

(c) If a state governmental entity(ies) desires to include a Public Policy Requirement component after an enhancement or expansion has been included in the Regional Transmission Expansion Plan, the Office of the Interconnection may re-evaluate the relevant reliability-based enhancement or expansion, Economic-based Enhancement or Expansion, or Multi-Driver Project to determine whether adding the state-sponsored Public Policy Requirement component would create a more cost effective or efficient solution to system conditions. If the Office of the Interconnection determines that adding the state-sponsored Public Policy Requirement component to an enhancement or expansion already included in the Regional Transmission Expansion Plan would result in a more cost effective or efficient solution, the state-sponsored Public Policy Requirement component may be included in the relevant enhancement or expansion, provided all of the requirements of the Operating Agreement, Schedule 6, section 1.5.10(b) are met, and cost allocations are established consistent with the Tariff, Schedule 12, section (b)(xii)(B).

(d) If, subsequent to the inclusion in the Regional Transmission Expansion Plan of a Multi-Driver Project that contains a state Public Policy Requirement component, a state governmental entity(ies) withdraws its support of the Public Policy Requirement component of a Multi-Driver Project, then: (i) the Office of the Interconnection shall re-evaluate the need for the remaining components of the Multi-Driver Project without the state Public Policy Requirement component, remove the Multi-Driver Project from the Regional Transmission Expansion Plan, or replace the Multi-Driver Project with an enhancement or expansion that addresses remaining reliability or economic system needs; (ii) if the Multi-Driver Project is retained in the Regional Transmission Expansion Plan without the state Public Policy Requirement component, the costs of the remaining components will be allocated in accordance with the Tariff, Schedule 12; (iii) if more than one state is responsible for the costs apportioned to the state Public Policy Requirement component of the Multi-Driver Project, the remaining state governmental entity(ies) shall have the option to continue supporting the state Public Policy component of the Multi-Driver Project and if the remaining state governmental entity(ies) choose this option, the apportionment of the state Public Policy Requirement component will remain in place and the remaining state governmental entity(ies) shall agree upon their respective apportionments; (iv) if a Multi-Driver Project must be retained in the Regional Transmission Expansion Plan and completed with the State Public Policy component, the state Public Policy Requirement apportionment will remain in place and the withdrawing state governmental entity(ies) shall continue to be responsible for its/their share of the FERC-accepted cost allocations as filed pursuant to the Tariff, Schedule 12, section (b)(xii)(B).

(e) The actual costs of a Multi-Driver Project shall be apportioned to the different components (reliability-based enhancement or expansion, Economic-based Enhancement or Expansion and/or Public Policy Requirement) based on the initial estimated costs of the Multi-Driver Project in accordance with the methodology set forth in the Tariff, Schedule 12.

(f) The benefit metric calculation used for evaluating the market efficiency component of a Multi-Driver Project will be based on the final voltage of the Multi-Driver

Project using the Benefit/Cost Ratio calculation set forth in the Operating Agreement, Schedule 6, section 1.5.7(d) where the Cost component of the calculation is the present value of the estimated cost of the enhancement apportioned to the market efficiency component of the Multi-Driver Project for each of the first 15 years of the life of the enhancement or expansion.

(g) Except as provided to the contrary in this Operating Agreement, Schedule 6, section 1.5.10 and Operating Agreement, Schedule 6, section 1.5.8 applies to Multi-Driver Projects.

(h) The Office of the Interconnection shall determine whether a proposal(s) meets the definition of a Multi-Driver Project by identifying a more efficient or cost effective solution that uses one of the following methods: (i) combining separate solutions that address reliability, economics and/or public policy into a single transmission enhancement or expansion that incorporates separate drivers into one Multi-Driver Project ("Proportional Multi-Driver Method"); or (ii) expanding or enhancing a proposed single driver solution to include one or more additional component(s) to address a combination of reliability, economic and/or public policy drivers ("Incremental Multi-Driver Method").

(i) In determining whether a Multi-Driver Project may be designated to more than one entity, PJM shall consider whether: (i) the project consists of separable transmission elements, which are physically discrete transmission components, such as, but not limited to, a transformer, static var compensator or definable linear segment of a transmission line, that can be designated individually to a Designated Entity to construct and own and/or finance; and (ii) each entity satisfies the criteria set forth in the Operating Agreement, Schedule 6, section 1.5.8(f). Separable transmission elements that qualify as Transmission Owner Upgrades shall be designated to the Transmission Owner in the Zone in which the facility will be located.

Attachment D

Declaration of Dr. Sami Abdulsalam,
Director of Regional Planning

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.	)	
	)	
Building for the Future Through	)	**Docket No. ER26-____-000**
Electric Regional Transmission	)	
Planning and Cost Allocation	)	

DECLARATION OF DR. SAMI ABDULSALAM
ON BEHALF OF
PJM INTERCONNECTION, L.L.C.

I. BACKGROUND AND QUALIFICATIONS

1. My name is Sami Abdulsalam, Ph.D., P.Eng. I am the Director of Transmission Planning for PJM Interconnection, L.L.C. ("PJM"). My business address is 2750 Monroe Boulevard, Audubon, Pennsylvania 19403.

2. I joined PJM in January of 2022. I have been in my current position as the Director of PJM Transmission Planning since March 2024, and I previously served as the Senior Manager of PJM Transmission Planning. My principal responsibility is to lead the development of PJM's Regional Transmission Expansion Plan. This function centers on the planning of the regional transmission system for the provision of reliable electric service in accordance with North American Electric Reliability Corporation ("NERC") Reliability Standards, as well as PJM and Transmission Owner reliability and operational criteria. I will also lead the team that will implement PJM's Long-Term Regional Transmission Planning Protocol, as accepted by the Federal Energy Regulatory Commission ("FERC").

3. Prior to this position, I served as Senior Manager, Consulting at Siemens PTI where I was responsible for power system analysis, transmission planning, and protection studies; as

Principal Engineer at Sustainable Grid Power, Inc.; and, for more than ten years, held various transmission planning positions of increasing responsibility, including Director, Transmission Planning and Director, Transmission System Projects, at the Alberta Electric System Operator, Canada.

4. Earlier in my career, I held various positions in the oil and gas industry, and was an Operational Engineer in thermal power plants in Egypt. My academic research focused on power system performance under voltage stability/high power transfer conditions as well as dynamic and transient behavior of power systems.

5. I hold a Bachelor of Science degree and Master of Science degree in Electrical Engineering received from the University of El-Mansoura in Egypt in 1997 and 2001, respectively. I received a Ph.D. in Electrical Engineering from the University of Alberta in Edmonton, Alberta, Canada in 2007. I also completed a post-doctoral fellowship in the Electrical and Computer Engineering Department at the University of Alberta, Edmonton, Canada from 2007 to 2008. In addition, I am a registered Professional Engineer (P.Eng.) in Alberta, Canada.

II. PURPOSE OF DECLARATION

6. I am providing this Declaration in support of PJM's proposed long-term planning approach to comply with FERC's Order Nos. 1920, 1920-A, and 1920-B, which will be set forth in the proposed Long-Term Regional Transmission Planning Protocol ("LTRTP Protocol").[1]

7. PJM's proposed LTRTP Protocol will use a multi-year process that begins with collaborative scenario development involving the PJM Area Relevant State Entities Committee ("PARSEC"), the PJM Transmission Owners, and the greater PJM stakeholder body, and ends

[1] All terms not otherwise defined in this Declaration shall have the meaning set forth in the transmittal letter to this filing, the Final Rule, or PJM's Governing Documents.

with projects being identified and possibly selected for review and approval by the PJM Board of Managers ("PJM Board") and subsequent development. My Declaration provides context for the tasks that PJM must complete pursuant to the LTRTP Protocol, and how long those tasks will take.

8. Specifically, I will explain why PJM can complete preliminary selections by the end of the third year of the five-year long-term planning cycle (Year Three), but not necessarily final selections. Under PJM's proposal, the holistic LTRTP Protocol includes a preliminary selection of solutions to address Core LT Needs and Additional LT Needs (as defined in proposed Operating Agreement, Schedule 6-C) prior to the close of the third year. This preliminary selection encompasses the holistic All-in-One Plan described more below, and would be recommended for selection to the PJM Board absent states' and other entities' voluntary funding decisions and potential states' opt-out decisions—prior to the close of the third year.

9. As I will show, it will take PJM three years from the initial assumptions meeting to develop Long-Term Scenarios, identify Long-Term Transmission Needs, identify possible right-sizing solutions, conduct its competitive solicitation, complete its evaluation of submitted proposals, develop the Core Plan to inform the creation of the All-in-One Plan, and then determine which projects in the All-in-One Plan should be recommended to the PJM Board for inclusion in the Long-Term Regional Transmission Plan.

10. The time allocated is intended to afford PJM the opportunity to properly conduct each step of the process while simultaneously providing opportunities for robust state and stakeholder engagement and feedback. After the All-in-One Plan is created, PJM will need to accommodate states' and other entities' decisions about voluntary funding opportunities and the potential state opt-out mechanism (details of which are to be developed in conjunction with the

cost allocation compliance protocol filed by the PJM Transmission Owners), which together may take an additional six to twelve months.

11. Below, I explain the length of time it takes to complete PJM's nearer-term planning cycle pursuant to the existing Regional Transmission Expansion Planning Protocol ("RTEP Protocol"), and why the LTRTP Protocol processes will take longer. Next, I summarize the various steps of the process, including illustrating how PJM has embraced transparency and stakeholder participation in the proposed LTRTP Protocol, and how those steps need additional time to complete. Afterward, I explain in detail the activities that PJM, the PJM Transmission Owners, states, and other stakeholders will be undertaking during each year of the long-term planning cycle. Finally, I describe several steps in the process that may require additional time.

III. COMPARING PJM'S TWO-YEAR REGIONAL TRANSMISSION EXPANSION PLAN CYCLE WITH PJM'S PROPOSED LONG-TERM REGIONAL TRANSMISSION PLAN CYCLE

12. PJM has over a decade of successful experience with the current RTEP Protocol. All required activities have been completed in a timely manner, but in most years, there is little time to spare. The PJM planning team is continuously looking for ways to make the process more efficient by, for example, introducing automation, streamlining processes, and utilizing consulting support during peak periods.

13. The PJM planning team has carefully considered all of the additional requirements needed to support the proposed LTRTP Protocol, including more comprehensive data collection, more scenarios, consideration of right-sizing opportunities, a longer and more complex competitive transmission solicitation window, more complex evaluation of potential transmission proposals and their associated benefits, opportunities for voluntary funding, and most importantly, affording states and stakeholders a much greater involvement in the entire planning process.

14. The PJM planning team's estimate is that, while three years will provide enough time for preliminary selection of Long-Term Transmission Projects, an extra six to twelve months could be required to support voluntary funding opportunities and possible state opt-out decisions, finalize optimization of the Long-Term Regional Transmission Plan, finalize cost allocation of selected Long-Term Transmission Projects, and finalize review with states and stakeholders before submitting the recommended Long-Term Regional Transmission Plan to the PJM Board.

15. Below I first describe the steps underlying PJM's current Regional Transmission Expansion Plan cycles for both reliability and market efficiency planning. I then describe the additional process requirements and considerations associated with the proposed LTRTP Protocol that necessitate activities beyond the third year.

A. Summary of PJM's RTEP Protocol

16. *Regional Transmission Expansion Plan Reliability Planning.* PJM's RTEP Protocol process encompasses a 24-month reliability planning process used for the 15-year Regional Transmission Expansion Plan horizon. This 24-month reliability planning process is made up of two overlapping 18-month planning cycles (overlapping by 6 months) to identify and develop shorter lead-time transmission upgrades, along with a 24-month planning cycle for the development of longer lead-time transmission upgrades that may be required to satisfy planning criteria.

17. *Regional Transmission Expansion Plan Reliability Planning: Developing Assumptions.* The first step in the RTEP Protocol is to develop a set of assumptions that will be used for subsequent analyses, a process that is less complex than what will be needed for the proposed LTRTP Protocol assumptions development. These RTEP Protocol assumptions are vetted with stakeholders at the Transmission Expansion Advisory Committee ("TEAC") and Subregional Regional Transmission Expansion Plan Committee ("SRRTEP") meetings.

18. *Regional Transmission Expansion Plan Reliability Planning: Near-Term Models.* Next, a set of models are developed based on the assumptions that were developed as described above. The near-term models developed at the start of each 18-month planning cycle are based on the latest information and assumptions available for load, resources, and transmission topology expected to exist through year five.

19. *Regional Transmission Expansion Plan Reliability Planning: Long-Term Base Models.* In addition to these near-term models, additional models are developed for long-term planning (not to be confused with models used for planning under the LTRTP Protocol). These long-term models are used to evaluate the need for more significant projects requiring a longer lead-time to develop. The long-term models developed at the start of each 24-month planning cycle are based on the system conditions that are expected to exist in year eight. System conditions beyond year eight are considered through a simple pro-rata expansion of year eight generation through year fifteen to meet forecasted load growth. For the development of the Regional Transmission Expansion Plan models, the preliminary model normally takes three months to develop, and then the preliminary model goes through a two-to-three-month review process by the PJM planning team and PJM Transmission Owners to ensure model accuracy (for example, taking into account all transmission developments approved in previous Regional Transmission Expansion Plan cycles, updates to the local transmission planning upgrades, and network upgrades associated with new generation interconnection facilities).

20. *Regional Transmission Expansion Plan Reliability Planning: Review of Applicable Reliability Planning Criteria.* The scope of the near-term analyses completed as part of each 18-month planning cycle includes an exhaustive review of applicable reliability planning criteria on all bulk electric system facilities included in the year five models, whereas the scope of the long-

term analyses that are performed as part of the 24-month planning cycles is limited to those reliability planning criteria most likely to require long-lead time projects and are generally applied to 230 kV and up facilities included in the year eight models. Simplified analyses beyond year eight are performed by linearly extrapolating the impact on critical transmission line flows in the year eight models of a pro-rata expansion of year eight generation to meet forecasted load through year fifteen. Any identified criteria violations are reviewed with stakeholders throughout the planning process. Ultimately, solutions to address both the near-term and long-term criteria violations are developed following proposals submitted through a competitive window, reviewed with the TEAC or SRRTEP, and submitted to the PJM Board for review and approval.

21. *Regional Transmission Expansion Plan Reliability Planning: Competitive Transmission Solicitation Window.* PJM provides an opportunity through a competitive solicitation process for both incumbent Transmission Owners and Nonincumbent Developers, and other entities, to submit transmission proposals. In addition to the window duration itself, each competitive window requires time to prepare and post materials to support the competitive window and review and perform quality control checks of all the proposals received. This preparation and review period generally includes back-and-forth discussions with project developers to understand, complete, and supplement their proposals with additional clarifying information. Each of these processes and associated competitive windows are handled separately, and the inputs to and outputs from each process inform the other processes, often in a sequential manner. By contrast, if these processes were combined into a single process with a single competitive window (as will be the case for the LTRTP Protocol, discussed below), then the combined process and competitive window would require considerably more time than is currently allocated to any single process in the RTEP Protocol. Thus, PJM's proposed LTRTP Protocol process, which holistically

integrates long-term reliability, public policy, and economic considerations into a single process with a single competitive window (and accounting for a competitive window duration of four to six months), will take longer. This is an important consideration for why PJM expects a Long-Term Regional Transmission Plan cycle to take up to four years to fully complete.

22. *Regional Transmission Expansion Plan Market Efficiency Planning.* The Regional Transmission Expansion Plan market efficiency process is a separate 24-month process which considers the 15-year Regional Transmission Expansion Plan horizon. The 24-month market efficiency cycle together comprises (i) two 12-month cycles to identify previously approved Regional Transmission Expansion Plan reliability projects that may be accelerated or modified, and (ii) one overlapping 24-month planning cycle to provide sufficient time for the identification and development of longer lead-time projects.

23. *Regional Transmission Expansion Plan Market Efficiency Planning: Developing Assumptions.* Similar to the reliability planning process, the first step in the market efficiency process is to develop a set of assumptions that will be used for the subsequent analyses. These assumptions are vetted with stakeholders at TEAC meetings.

24. *Regional Transmission Expansion Plan Near-Term and Long-Term Market Efficiency Analysis.* The scope of the near-term market efficiency analysis completed as part of each 12-month planning cycle includes a review of the congestion in the near-term and potential impacts on the congestion of existing approved Regional Transmission Expansion Plan projects. This review identifies previously approved Regional Transmission Expansion Plan reliability projects that may be accelerated or modified and meet the market efficiency benefit-to-cost criteria. Separately, for the long-term market efficiency planning, as part of the 24-month market efficiency planning cycle, PJM develops multiple models to evaluate congestion over the 15-year

planning horizon. Proposed solutions to address projected congestion are developed during the second year of the 24-month planning cycle.

25. *Regional Transmission Expansion Plan Market Efficiency Planning: Updating Models and Refining Solutions.* During the second year of the 24-month cycle, the models used for the long-term analysis in the first year of the cycle are updated, as appropriate, to reflect the latest assumptions regarding load, generation, demand response, transmission topology, or other input assumptions. Congestion issues identified during the first year of the cycle are validated during the second year of the 24-month cycle. Results from these long-term analyses are reviewed with the TEAC throughout the 24-month planning process, and, ultimately, presented to the PJM Board for review and approval.

26. *Regional Transmission Expansion Plan Planning: Evaluation, Selection and Approval of Recommended Solutions*. PJM conducts multiple types of competitive windows to support the various planning processes including near-term reliability, long-term reliability, long-term market efficiency, and State Agreement Approach. Upon the close of a competitive window and the review of proposals, the proposals themselves are evaluated for potential selection and approval. Each planning process has its own evaluation methodology to determine how well each submitted proposal addresses PJM's needs and expectations as set forth in the window's scope documents and posted materials (describing the window assumptions, objectives and evaluation criteria). Common considerations included in all evaluations include proposal performance, robustness, expandability, costs, constructability, and developer qualifications. In parallel with the evaluation process, PJM reviews proposals with stakeholders and provides periodic progress updates on the evaluation. After the evaluation is complete, PJM presents stakeholders a first read of the selections with the reasons that drove the selections, and allows stakeholders an opportunity

to provide PJM with feedback on the selections. After considering such feedback and adjusting the selections as warranted, PJM presents a second, final read of the selections to stakeholders prior to recommending the final set of selected transmission solutions, along with their associated cost allocations, to the PJM Board for their review and approval.

27. The current RTEP Protocol evaluation, selection, and approval process is generally straightforward because, among other reasons, (i) there is no opt-out mechanism, (ii) voluntary funding is handled through a separate process (i.e., the State Agreement Approach process), and (iii) cost allocation is determined consistent with a FERC-accepted formula set forth in the PJM Tariff. By contrast, the LTRTP Protocol's proposed evaluation, selection and approval process is considerably more complex and requires more state and stakeholder participation than the same processes set forth in the current RTEP Protocol, and will therefore require considerably more time to complete. These complexities will be further discussed on a year-by-year basis in the following sections V, VI, and VII of this Declaration.

B. Comparing PJM's RTEP Protocol and LTRTP Protocol Processes

28. The process set forth in PJM's proposed LTRTP Protocol is significantly more complex than the existing process set forth in the RTEP Protocol, because it attempts to better address the increased uncertainty in the longer-term horizon through the development and analysis of multiple scenarios that more holistically integrate public policy drivers with reliability, economic, and operational performance needs, with the overarching goal of developing a set of Long-Term Transmission Projects that can more efficiently deliver benefits to consumers relative to costs. The LTRTP Protocol also combines various types of analyses into an integrated process (for example, reliability and market efficiency), which requires the development of multiple generation profiles depicting a longer-term planning horizon using production cost simulation and

quantifying benefit and cost metrics to aid in the evaluation of the submitted proposals and the efficacy of the considered solution portfolios as a whole.

29. As discussed below, the proposed LTRTP Protocol also includes a significant number of additional consultation and stakeholder engagement steps, including opportunities for states and other entities to consider voluntary opportunities, and for states to make potential opt-out and other cost allocation decisions. As a result, planning long-term in a holistic way requires more complex tools and processes and more robust participation of states and other stakeholders throughout all stages of the cycle. These complexities are summarized in the following paragraphs and discussed in detail in the subsequent sections of this Declaration.

30. PJM's proposed LTRTP Protocol requires the development of multiple scenarios and sensitivities to account for the intrinsic uncertainty associated with the long-term planning horizon. Building these scenarios and sensitivities requires a complex set of inputs and the incorporation of these inputs into new tools, like capacity expansion modeling.

31. Defining scenario assumptions, collecting data sources, and analyzing the data requires a significant amount of time due to the complexity and the need to build in opportunities for meaningful participation by PARSEC and other stakeholders. This participation is needed not only for transparency, but also to collect critical data for the process—like state and local policies, In-Kind Replacement Facility Needs, and development opportunities—and to vet the inputs and methods for the scenarios and sensitivities to ensure the integrity, quality, and effectiveness of the process. The size and complexity of the PJM transmission system, the diversity of jurisdictions in the PJM Region, and the proactive and extensive nature of stakeholders' participation in PJM's processes add to the time needed to develop scenarios and sensitivities.

32. After developing these scenarios and sensitivities, models must be developed to accurately represent and analyze the scenarios and sensitivities unique to long-term planning. These models contain an enormous amount of data and information, and their compilation requires the exercise of great care and thoroughness by the engineers responsible for their development, both internal to PJM and externally with PJM Transmission Owners. Complex decisions unique to long-term planning must be made at this stage (for example, determining the type, size, and location of the future generators required to support each scenario). As a result, the models require many months to complete and review before the actual analyses using those models can begin.

33. Upon completion of the model development, analyses must be conducted of the PJM system to identify Long-Term Transmission Needs under all scenarios and sensitivities. The scope of the analysis required by the LTRTP Protocol places more emphasis on accounting for future uncertainty and integrating public policy into the long-term planning process than the current RTEP Protocol, and therefore the analysis must be performed on multiple scenarios and sensitivities, each of which has multiple models that must be individually developed and analyzed. At this stage of the process, PJM will also evaluate how needs are influenced by the assumptions under each studied scenario or sensitivity. Once the analysis is complete, the results of the various studies must be reviewed to make an initial identification of Long-Term Transmission Needs.

34. After the Long-Term Transmission Needs have been identified, PJM will work with PJM Transmission Owners to determine whether there are opportunities to right-size existing facilities that need to be replaced within the planning horizon to address any of the Long-Term Transmission Needs. To support the right-sizing federal right of first refusal that is unique to long-term planning, PJM will conduct the right-sizing discussions prior to opening a competitive transmission solicitation window. These right-sizing discussions and initial analysis of right-sized

In-Kind Replacement Facilities is expected to require at least a couple of months to complete after the initial identification of Long-Term Transmission Needs.

35. Prior to opening a competitive transmission solicitation window for Long-Term Transmission Projects to address identified Long-Term Transmission Needs, PJM will provide results of such studies, including identified Long-Term Transmission Needs and Right-Sized Replacement Facilities, and related analyses to the TEAC and PARSEC for their review and comment. Due to the larger size of scenarios studied and how they may impact the associated needs, the preparation work leading to the opening of the LTRTP Protocol competitive window is expected to take more time than the corresponding portion of the current Regional Transmission Expansion Plan cycle.

36. The length of time to prepare for and conduct the competitive transmission solicitation window itself may require several more months than that required for the current RTEP Protocol cycle due to the longer planning horizon and more scenarios and sensitivities to consider. Likewise, the transmission proposal evaluation may require several more months to complete than for the current RTEP Protocol due to (i) the expected higher volume of transmission proposals submitted in response to the long-term competitive transmission solicitation window; (ii) the complexity of the proposals which will likely include new greenfield interstate backbone transmission and complex interactions between proposals in various parts of the system; (iii) the evaluation of proposal performance across the multiple scenarios and sensitivities; (iv) the calculation and comparison of a set of benefits unique to long-term planning; (v) constructability and financial review of all candidate proposals; and (vi) regular updates and solicitation of feedback from PARSEC and stakeholders as the evaluation progresses. All of these steps

culminate in the development and presentation of the preliminary Core Plan, which is then used to develop the All-in-One Plan.

37. As discussed further below, this is not the end of the process. PJM will need to build in additional time to accommodate decisions on state opt-out and voluntary funding, which may require PJM to optimize the preliminary All-in-One Plan. This is another process that is expected to take between six to twelve months of time that is not required under the current RTEP Protocol.

IV. PJM'S LTRTP PROTOCOL EMBRACES TRANSPARENCY AND STAKEHOLDER PARTICIPATION PROCESSES, WHICH TAKE ADDITIONAL TIME, ESPECIALLY IN A MULTI-STATE RTO.

38. PJM embraced transparency and stakeholder participation in its proposal. Table 1 below summarizes the timeline of PJM's proposed LTRTP Protocol, focusing on examples of transparency and stakeholder participation provisions, which are marked with an asterisk (*). This table does not represent every step of the LTRTP Protocol process in detail and represents an approximated duration for some of the listed steps.

39. Regional transmission planning in PJM requires coordination with 14 jurisdictions, each with different priorities, policies, and cost-allocation perspectives. Decisions will need to be carefully made given the complexities of the factors that need consideration, diversity of interests in the PJM Region, and thorough stakeholder participation necessary to ensure that PJM can develop a Long-Term Regional Transmission Plan that is supported by states and stakeholders and can lead to successful transmission projects being constructed.

Table 1

General Stages of the LTRTP Protocol
(With a Focus On Transparency and Stakeholder Participation Provisions, as Marked with an Asterisk (*))

PLANNING STAGE	PROVISIONS	APPROXIMATE STAGE DURATION	CUMULATIVE PROCESS TIME
Gathering best available data	Work with states and stakeholders* to gather data under the factor categories listed in sections 1.4.2 and 1.4.3 (which correspond to FERC Factor Categories 1-7) likely to affect Long-Term Transmission Needs.[2]	3 months	Pre-cycle activities
Initial assumptions meeting	Hold an initial assumptions meeting with TEAC* at the start of the Long-Term Regional Transmission Plan study process to discuss inputs and methods to be used in the development of scenarios and sensitivities of the Long-Term Regional Transmission Plan. Additional initial assumptions meetings* may be held as needed. [3] Meet with PARSEC* to discuss the assumptions, inputs and methods to be used in the development of scenarios and sensitivities, or other updates relevant to development of the Long-Term Regional Transmission Plan.[4]	1 month	Year 1: Month 1
Development of assumptions	Consult with PARSEC and stakeholders* in developing the Long-Term Scenario assumptions used in	3 Months	Year 1: Month 4

[2] Proposed Operating Agreement, Schedule 6-C, sections 1.4.2 & 1.4.3.

[3] Proposed Operating Agreement, Schedule 6-C, section 1.4.4(a).

[4] Proposed Operating Agreement, Schedule 6-C, section 1.4.4(b).

PLANNING STAGE	PROVISIONS	APPROXIMATE STAGE DURATION	CUMULATIVE PROCESS TIME
	the Long-Term Regional Transmission Plan study process.[5] Document and post* the determination of the range of assumptions to be used in the scenarios and studies after final assumptions meetings* with TEAC and PARSEC and before developing scenarios.[6]		
Scenario development	Post initial draft Long-Term Scenarios for review* by stakeholders.[7] Hold at least one meeting* to discuss and provide/receive feedback on the draft scenarios with TEAC, PARSEC, and other stakeholders.[8]	8 Months	Year 1: Month 12
Long-Term Regional Transmission Plan studies	Provide results of Long-Term Regional Transmission Plan studies and related analyses to TEAC and PARSEC* to consider the impact of sensitivities, assumptions, and scenarios on Long-Term Transmission Needs and need for Long-Term Transmission Projects. [9] Hold additional TEAC meetings* for review and comment on reliability criteria violations and market efficiency analyses. Report and provide status updates* on the development of the Long-Term	10 Months	Year 2: Month 10

[5] Proposed Operating Agreement, Schedule 6-C, section 1.4.2(c).

[6] Proposed Operating Agreement, Schedule 6-C, section 1.4.4(c).

[7] Proposed Operating Agreement, Schedule 6-C, section 1.5(c).

[8] Proposed Operating Agreement, Schedule 6-C, section 1.5(c).

[9] Proposed Operating Agreement, Schedule 6-C, section 1.6(c).

PLANNING STAGE	PROVISIONS	APPROXIMATE STAGE DURATION	CUMULATIVE PROCESS TIME
	Regional Transmission Plan at these meetings.[10]		
Reevaluation	Reevaluate whether an approved Long-Term Transmission Project in the Regional Transmission Expansion Plan should remain in the plan, and report any considered change to the Regional Transmission Expansion Plan to TEAC for review and comment* and approval by the PJM Board.[11]	2 Months	Year 2: Month 5
LT Needs	Post* Long-Term Transmission Needs identified through a Long-Term Regional Transmission Plan study, indicate whether such needs are Core LT Needs or Additional LT Needs, information related to each need consistent with section 1.8(b), and indicate whether a Right-sized Replacement Facility may address a Long-Term Transmission Need consistent with section 1.7.[12] Receive feedback* on such postings before opening proposal window. The TEAC and PARSEC will have an opportunity to comment* on the classification of Core LT Needs and Additional LT Needs.[13]	2 Months	Year 2: Month 12
Identification of Right-Sized	Prior to posting Long-Term Transmission Needs, review the	3 Months	Year 2: Month 11

[10] Proposed Operating Agreement, Schedule 6-C, section 1.6(c).

[11] Proposed Operating Agreement, Schedule 6-C, section 1.6.1(a).

[12] Proposed Operating Agreement, Schedule 6-C, section 1.6.2(c).

[13] Proposed Operating Agreement, Schedule 6-C, section 1.6.2(c).

PLANNING STAGE	PROVISIONS	APPROXIMATE STAGE DURATION	CUMULATIVE PROCESS TIME
Replacement Facilities	identified Long-Term Transmission Needs and the Candidate In-Kind Replacement Facility Needs List to evaluate whether any Long-Term Transmission can be addressed with Right-Sized Replacement Facilities, and notify the TEAC* of any identified Right-Sized Replacement Facilities for review and comment and explanation* of conclusions.[14]		
Competitive Window	Post* Long-Term Transmission Needs and supporting information, including the studies for each Long-Term Scenario, a recommended set of Long-Term Transmission Needs to be addressed (classified into Core LT Needs and Additional LT Needs), the system conditions considered, and policy requirements, including federal, state, Tribal, and local policy objectives.[15] Post* the Long-Term Transmission Need, the relevant In-Kind Replacement Facility, the identified Right-Sized Replacement Facility, and any incidental system impacts caused by the Right-Sized Replacement Facility that would need to be addressed for each Long-Term Transmission Need that may be addressed through right-sizing an In-Kind Replacement Facility.[16]	5 Months	Year 3: Month 5

[14] Proposed Operating Agreement, Schedule 6-C, section 1.7(a).

[15] Proposed Operating Agreement, Schedule 6-C, section 1.8(b).

[16] Proposed Operating Agreement, Schedule 6-C, section 1.8(b).

PLANNING STAGE	PROVISIONS	APPROXIMATE STAGE DURATION	CUMULATIVE PROCESS TIME
	Post* an explanation regarding why certain Long-Term Transmission Needs were identified but were not to be addressed through proposals and whether any such needs were determined to be more appropriately addressed through a different planning process or subsequent Long-Term Regional Transmission Plan cycles.[17] Post* on the PJM website all proposals submitted pursuant to proposed section 1.8(c) and all identified Right-Sized Replacement Facilities.[18]		
Evaluation of posted proposals to address Long-Term Transmission Needs	Evaluate proposals to determine the more efficient or cost-effective solution for addressing identified Long-Term Transmission Needs, considering engineering judgment, sensitivity studies and scenario analyses, consistent with the Evaluation Criteria specified in section 1.9(a).[19] Determine the comparative risks for each proposal to be borne by ratepayers as a result of the proposal's binding cost commitment or use of non-binding cost estimates.[20] Present comparative analyses* of the comparative risks to be borne by ratepayers, including the rationale	5 Months	Year 3: Month 10

[17] Proposed Operating Agreement, Schedule 6-C, section 1.8(b).

[18] Proposed Operating Agreement, Schedule 6-C, section 1.8(d).

[19] Proposed Operating Agreement, Schedule 6-C, section 1.9(a).

[20] Proposed Operating Agreement, Schedule 6-C, section 1.9(a).

PLANNING STAGE	PROVISIONS	APPROXIMATE STAGE DURATION	CUMULATIVE PROCESS TIME
	used to scrutinize the cost, and overall cost-effectiveness of each finalist's proposal, including any binding cost commitments, for TEAC review and comment*.[21]		
Finalizing Core and All-in-One Plans	Post to the PJM website and present* the Core Plan and the All-in-One Plan and any proposals that would address Long-Term Transmission Needs but were not identified for inclusion in the Core Plan and/or All-in-One Plan to PARSEC and TEAC for review and comment*.[22] Based on review and comment*, additional studies and evaluations may be performed. If the Core Plan or All-in-One Plan are revised, the revised Core and All-in-One Plans must be posted* to the PJM website and presented to the PARSEC and TEAC for review and comment.*[23]	2 Months	Year 3: Month 12
Final All-in-One Plan and recommended Long-Term Regional	States consider* opt-out and cost allocation decisions.[24] States and other entities consider* voluntary funding opportunities.[25] PJM reoptimizes All-in-One Plan based on these decisions.[26]	11 Months	Year 4: Month 11

[21] Proposed Operating Agreement, Schedule 6-C, section 1.9(a).

[22] Proposed Operating Agreement, Schedule 6-C, sections 1.12(a) & (b).

[23] Proposed Operating Agreement, Schedule 6-C, section 1.12(c).

[24] Proposed Operating Agreement, Schedule 6-C, section 1.16(b).

[25] Proposed Operating Agreement, Schedule 6-C, section 1.16(b).

[26] Proposed Operating Agreement, Schedule 6-C, section 1.16(b).

PLANNING STAGE	PROVISIONS	APPROXIMATE STAGE DURATION	CUMULATIVE PROCESS TIME
Transmission Plan	Consult with TEAC and PARSEC* on the recommended Long-Term Regional Transmission Plan before presenting to PJM Board for review and approval, including providing sufficiently detailed determinations* for stakeholders to review the recommendations.[27]		
Approval of Long-Term Regional Transmission Plan	Based on the studies and analyses performed, the PJM Board will approve the recommended Long-Term Regional Transmission Plan as part of the Regional Transmission Expansion Plan.[28] The current and approved Long-Term Regional Transmission Plan will be published* to the PJM website.[29]	1 Month	Year 4: Month 12

V. IN YEAR MINUS ONE AND YEAR ONE, PJM WILL BE DETERMINING ASSUMPTIONS, FINALIZING SCENARIOS AND COMMENCING MODEL BUILDING ACTIVITIES; THE PJM TRANSMISSION OWNERS WILL BE ASSESSING ASSET CONDITIONS FOR IN-KIND REPLACEMENT ESTIMATES; AND THE STATES WILL BE PROVIDING POLICY INPUTS AND OTHER FEEDBACK ON ASSUMPTIONS AND SCENARIOS.

40. To secure a head start on the planning process, data and information gathering will begin before the initial assumptions meeting, in "Year Minus One" or the "pre-cycle" period, as shown in Table 1, Appendix 1, and Appendix 2. In other words, before the LTRTP Protocol cycle formally begins, PJM will begin gathering the relevant data and information for that cycle,

[27] Proposed Operating Agreement, Schedule 6-C, section 1.16(a).

[28] Proposed Operating Agreement, Schedule 6-C, section 1.17(a).

[29] Proposed Operating Agreement, Schedule 6-C, section 1.17(b).

including policy inputs from PARSEC and other inputs from PJM Transmission Owners and other stakeholders. This may take at least three months, depending on the time it takes to coordinate, collect, and analyze this data and information.

41. For example, PARSEC (and each individual jurisdiction) will provide PJM with state policy inputs for the development of Long-Term Scenarios. Similarly, PJM will need to gather federal, Tribal, and local policies from government entities. Information on policies may also vary across multiple sources and PJM will need to coordinate with PARSEC agencies and other entities to reach the best interpretation. PJM's analysis of other factor inputs will require coordination with government entities and other stakeholders as well.

42. Separately, in Year Minus One and into the beginning of Year One, the PJM Transmission Owners will be reviewing their asset conditions to identify In-Kind Replacement Need estimates. How long that process will take may depend on various factors like the size of the PJM Transmission Owners' systems, but PJM estimates that it could take up to one month for PJM to review the submitted information and work with the PJM Transmission Owners to complete the submission.

43. The tasks proposed for Year One involve significant collaboration with PARSEC, PJM Transmission Owners, and other stakeholders to discuss scenario development (including the relevant data inputs, the range of assumptions, and the applicable methods). Because of the collaborative nature of the process, some of these steps are sequential and PJM will need to wait for others' actions before moving to the next step.

44. PJM anticipates holding multiple meetings for these Year One processes. I anticipate that several initial tasks will take two to four meetings to develop and finalize assumptions, with about a month between meetings to gather stakeholder input and prepare

materials. PJM will present assumptions at the initial assumptions meeting, including assumptions for extreme weather sensitivities. PJM will then gather stakeholder feedback, including additional inputs that may be missing, such as stakeholders' feedback on generation development opportunities at different locations of the system. After receiving and considering that feedback, PJM will adjust and revise assumptions to prepare for the first draft of the scenarios.

45. Additionally, states will need time to determine whether to request an additional scenario. Given the number and diversity of jurisdictions, PJM currently anticipates that this step (i.e., time for states to request an additional scenario) may take up to 90 days.

46. Altogether, PJM expects approximately four months of assumptions discussions with stakeholders and PARSEC to transpire before PJM can commence drafting an initial scenario set, which itself will take two to four months due to PJM's large footprint, depending on model complexities and the features of any PARSEC-requested additional scenario. PJM will then present the initial Long-Term Scenarios draft to PARSEC and stakeholders over the course of one or two additional meetings, spaced at least a month apart. During and following these meetings, PJM will gather more feedback on the initial Long-Term Scenarios draft and may need to allocate additional time for stakeholders to provide relevant data to revise the draft scenarios. Following these rounds of feedback, PJM will finalize the scenarios.

47. Some activities will overlap between Year One and Year Two. For example, PJM will strive to commence model building in the latter part of Year One in parallel with the Year One activities to make the planning process as efficient as possible. Thus, model development will begin in the second half of Year One and continue into Year Two (for the first three to five months) in order to (i) account for the final set of scenario and sensitivity assumptions, (ii) incorporate approved transmission projects from the prior year's Regional Transmission Expansion Plan and

align with the rest of the current year's Regional Transmission Expansion Plan assumptions, (iii) allow for the creation of numerous models and related analyses to support all required scenarios and sensitivities, (iv) model new generation siting, and (v) allow a modest period of review and vetting of the models to correct errors.

48. Afterwards, PJM will need to allocate two to three additional meetings for updating and finalizing the Long-Term Scenarios. PJM will first update the Long-Term Scenarios based on the finalized assumptions. Then, PJM will present the final Long-Term Scenarios to PARSEC and stakeholders at the end of Year One. Finally, as Year Two begins, PJM will revise the final Long-Term Scenarios with updated load forecasts. PJM will then communicate any Long-Term Scenarios changes with PARSEC and stakeholders at one or more meetings.

49. The above estimates show that PJM is already being ambitious by fitting this amount of work into a single year, even putting aside the task of finalizing Long-Term Scenarios in Year Two. For visual depictions of these tasks, please refer to the timeline available in Appendix 1 and Appendix 2 (attached to this Declaration) and described in Table 1 above.

VI. IN YEAR TWO, PJM WILL UPDATE THE CAPACITY EXPANSION MODEL, CONTINUE TO BUILD POWER FLOW, PRODUCTION COST MODELS, AND EXTREME WEATHER SENSITIVITIES; PERFORM SCENARIO ANALYSES TO IDENTIFY LONG-TERM TRANSMISSION NEEDS; IDENTIFY OPPORTUNITIES FOR RIGHT-SIZING; AND PREPARE TO OPEN THE COMPETITIVE TRANSMISSION PROPOSAL WINDOW.

50. PJM's proposal also envisions a busy Year Two, which will begin with finalizing the capacity expansion model process and finalizing power flow and production cost models and extreme weather sensitivities to perform the necessary analyses to identify Long-Term Transmission Needs. For simplicity, PJM has grouped these items into the "Year Two" category but it is possible, and even likely, that some of these activities will overlap different years, i.e., begin earlier than Year Two or end in the beginning of Year Three.

51. The model building activities which began in Year One will continue for the first three to five months of Year Two. As the models are finalized, PJM will first reevaluate previously selected Long-Term Transmission Projects from the past cycle under FERC's rules, as informed by changes in forecast and policy inputs or stakeholder feedback as needed. PJM expects that reevaluation and model updates, when warranted, will take one to two months to perform.

52. From there, PJM will perform analyses to identify Long-Term Transmission Needs, based on reliability, economic, operational performance, current public policies and other considerations, and rely on sensitivity studies, modeling assumption variations, and scenario analyses. In this phase, PJM will also classify Long-Term Transmission Needs as Core LT Needs or Additional LT Needs. This is likely to take four to six months, accounting for PARSEC and stakeholder comments and meetings.

53. Before PJM opens the single competitive transmission solicitation window and solicits any proposals, PJM will take approximately two to four months coordinating with the PJM Transmission Owners to assess which Long-Term Transmission Needs can reasonably be addressed through right-sizing and gather PARSEC and other stakeholder comments on those preliminarily identified right-sized solutions. This process may overlap to some extent with the analysis phase described above.

54. Next, PJM will prepare for and open its LTRTP Protocol competitive transmission solicitation window through which it will solicit proposals to address Long-Term Transmission Needs. The preparation for the window will conclude at the end of Year Two, take approximately one to two months to complete, and the window itself will open at the beginning of Year Three.

55. Again, the above estimates, totaling one to one and a half years, show that PJM is working on a tight timeline to complete these tasks within Year Two. Visual depictions of these tasks are provided in Table 1, Appendix 1, and Appendix 2.

VII. IN YEAR THREE, PJM WILL SOLICIT PROPOSALS FROM TRANSMISSION DEVELOPERS TO ADDRESS THE LONG-TERM TRANSMISSION NEEDS THROUGH A COMPETITIVE SOLICITATION WINDOW; EVALUATE AND SELECT PROPOSALS; PROVIDE REGULAR PROGRESS UPDATES AND OPPORTUNITIES TO REVIEW FOR STATES AND STAKEHOLDERS; INCORPORATE RECEIVED FEEDBACK; AND AT THE END OF YEAR THREE, PRESENT THE PRELIMINARY CORE PLAN AND ALL-IN-ONE PLAN.

56. Next, PJM will open a competitive window that is expected to be approximately four to six months long, through which it will solicit proposals to address Long-Term Transmission Needs, including a requirement for those proposals to consider alternative transmission technologies. PJM's posted materials will describe the window assumptions, objectives, and evaluation criteria. This competitive window is expected to be longer than the RTEP Protocol competitive window due to the complexity of the analysis, including the consideration of multiple scenarios and sensitivities, a comprehensive consideration of public policies, a robust set of benefit considerations, and more detailed and thorough evaluation of facilities siting and routing considerations, all leading to a robust proposal that enhances constructability, consultation, and cost estimating activities. The window timeline may be adjusted based on the nature and magnitude of the identified needs.

57. After the competitive window is closed (approximately four to six months into Year Three), PJM will continue Year Three with its evaluation and selection process.

58. For evaluation, PJM will first need to organize and review all proposals, perform quality control checks, and coordinate with proposing entities to ensure their proposals are complete, including the proportion of their proposals addressing alternative transmission

technologies. PJM will be meeting with proposing entities to further discuss the merits of their proposals. This proposal screening process is expected to take approximately two months, but evaluation and proposing entity consultations can likely commence before the quality control checks are complete.

59. Next, PJM will apply its evaluation and selection criteria to identify candidate solutions for selection. This evaluation process is expected to be complex and involve careful consideration of the performance, constructability, benefits, and costs of each proposal (including the benefits required to be considered under the Final Rule), in order to ensure that the more efficient or cost-effective set of Long-Term Transmission Projects is identified for inclusion in the initial Core Plan, which informs the development of the All-in-One Plan. The preliminary selection stages include solutions that are timely and appropriate for selection, and those solutions make up the holistic All-in-One plan (*without* the state opt-out mechanism and voluntary funding opportunities). PJM expects the development of these plans to take approximately five to seven months. PJM expects to provide regular monthly progress updates to states and stakeholders throughout the evaluation period.

60. Once the evaluation is completed near the end of Year Three, PJM will provide the Core Plan and an All-in-One Plan to the states and stakeholders for comments and consideration and expects to allocate two months for this process. This is also called the "preliminary selection" stage. These preliminary selections will provide useful information to PJM states and the greater stakeholder body as to how the needs are addressed and how all inputs to the plan development impact the needed transmission enhancements together with their associated benefits and costs on either individual project or portfolio basis.

61. After the presentation of the Core Plan and All-in-One Plan at the end of Year Three, PJM will have completed its own selection process in compliance with the project selection thresholds and associated criteria. This means that if no state chooses to opt-out of cost allocation of a project, and no entity decides to voluntarily fund a project, selection is complete by the end of Year Three.

62. The above time estimates for Year Three total to a year to a year and a half, *without* counting the time for voluntary funding opportunities and any state opt-out decisions, which will be addressed in the following Year Four.

VIII. FOLLOWING YEAR THREE, THE LONG-TERM REGIONAL TRANSMISSION PLAN WILL BE FINALIZED BASED ON THE DECISION TIMELINE OF STATES AND INTERESTED STAKEHOLDERS.

63. Above, I discuss how selection will be complete by the end of Year Three if there are no state opt-out decisions, no voluntary funding decisions, and no further cost allocation negotiations.

64. More likely, however, PJM will need to wait for states to make decisions about exercising their right to voluntary selection of specific projects (in alignment with their collective or individual state policies), and make other cost allocation decisions for projects included in the completed All-in-One Plan. This stage will also allow other interested entities to request to sponsor specific projects through the voluntary funding mechanism for projects not otherwise selected. The voluntary funding mechanism will be finalized with the other cost allocation proposals in a future filing.

65. The potential state opt-out mechanism (currently being considered by the states and the details of which are expected to be filed in conjunction with the Transmission Owners' cost allocation proposal) will require states to follow formalized internal processes in order to decide whether to opt-out, after reviewing the benefits distribution information they will be provided.

The voluntary funding opportunity will require (i) states to coordinate internally with their agencies and possibly their legislatures to commit the funds necessary to take advantage of the opportunity, and (ii) other entities to obtain the financing for such a large infrastructure project. Although the allocation of time for voluntary funding decisions and potential state opt-out decisions has yet to be precisely defined, PJM estimates the two processes will require no more than six months, although the final timing will depend on the outcome of the PJM Transmission Owners' future cost allocation filing.

66. Once states make their final determination on project inclusions and associated cost allocation decisions, PJM will then develop the final, recommended Long-Term Regional Transmission Plan that will be presented by PJM staff for review and approval to the PJM Board. PJM expects this process to take three to six months. Cost assignments for the transmission facilities comprising the Long-Term Regional Transmission Plan will then be determined according to a FERC-approved cost allocation methodology filed by the PJM Transmission Owners.

67. Because these required activities must come after preliminary selection, I believe it would be unrealistic to make final selection decisions within three years from the initial assumptions meeting, even though PJM has compressed its timeline as much as possible. Again, visual depictions of these tasks are available in Table 1, Appendix 1, and Appendix 2.

IX. CONCLUSION

68. In summary, PJM will develop its preliminary All-in-One Plan by the end of Year Three, and then the process may need up to an additional six to twelve months to finalize (to account for state and interested stakeholder decisions related to voluntary funding and other cost allocation decisions) and present to the PJM Board for review and approval. Accordingly, it could

take up to four years between the initial assumptions meeting and PJM Board approval of the Long-Term Regional Transmission Plan at least during its first cycle.

69. Separately, I believe it is already ambitious for PJM to commit to preliminary selection by the end of Year Three. Requiring PJM to complete the final version of the Long-Term Regional Transmission Plan by the end of Year Three will necessarily require PJM to shorten stakeholder processes or eliminate some of the consultation opportunities at various points in the process, which I do not believe FERC would have intended.

70. This concludes my Declaration.

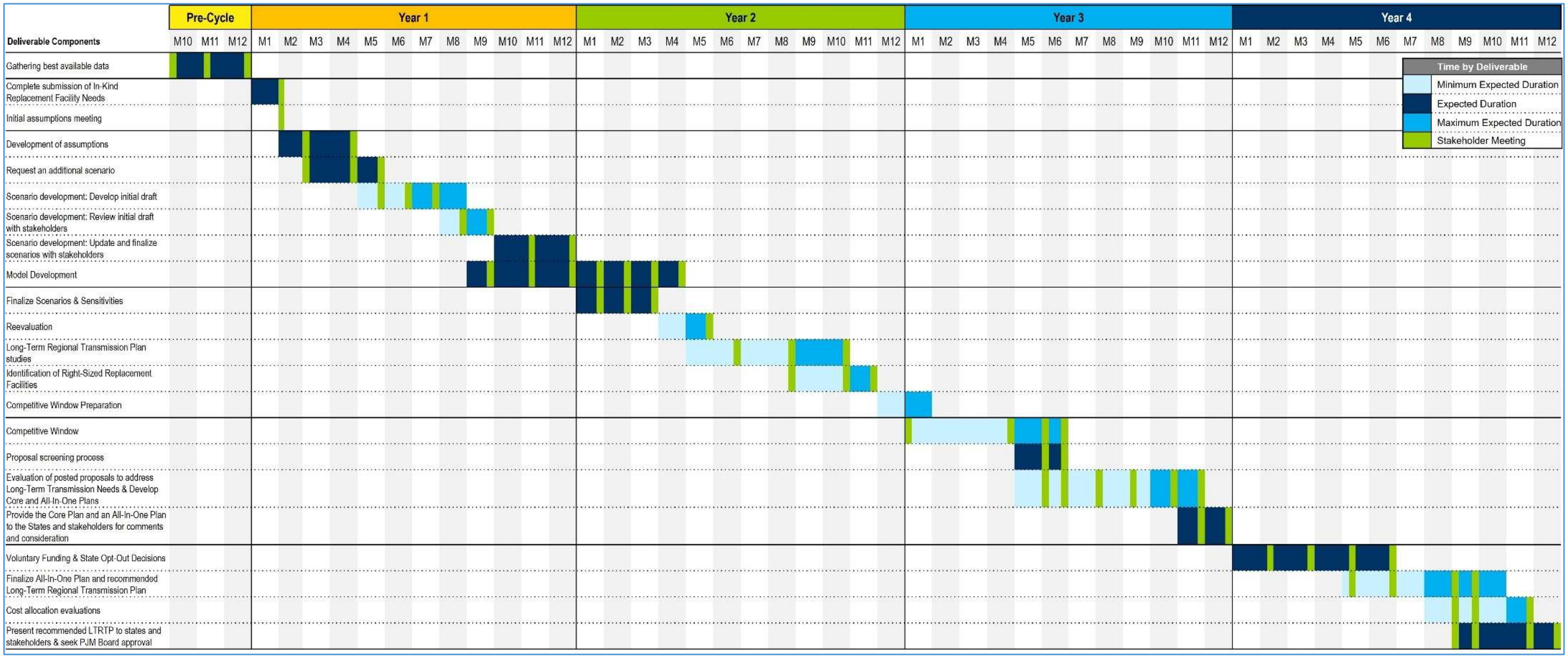
VERIFICATION

I, Dr. Sami Abdulsalam, pursuant to 28 U.S.C. § 1746, state, under penalty of perjury, that I am the Sami Abdulsalam referred to in the foregoing "Declaration of Dr. Sami Abdulsalam on Behalf of PJM Interconnection, L.L.C.," that I have read the same and am familiar with the contents thereof, and that the facts set forth therein are true and correct to the best of my knowledge, information, and belief.

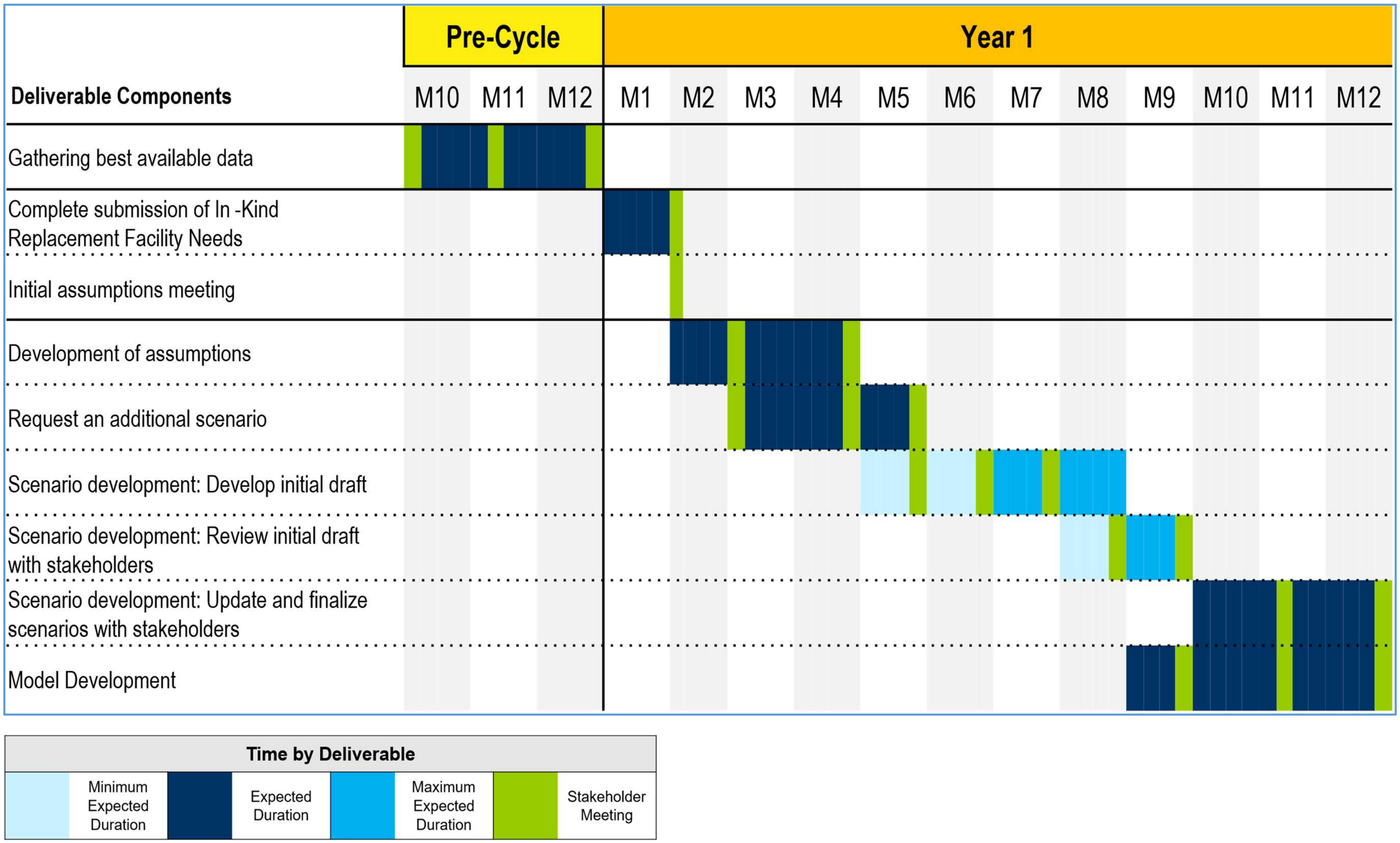
/s/___Dr. Sami Abdulsalam________
Dr. Sami Abdulsalam
Director, Transmission Planning
PJM Interconnection, L.L.C

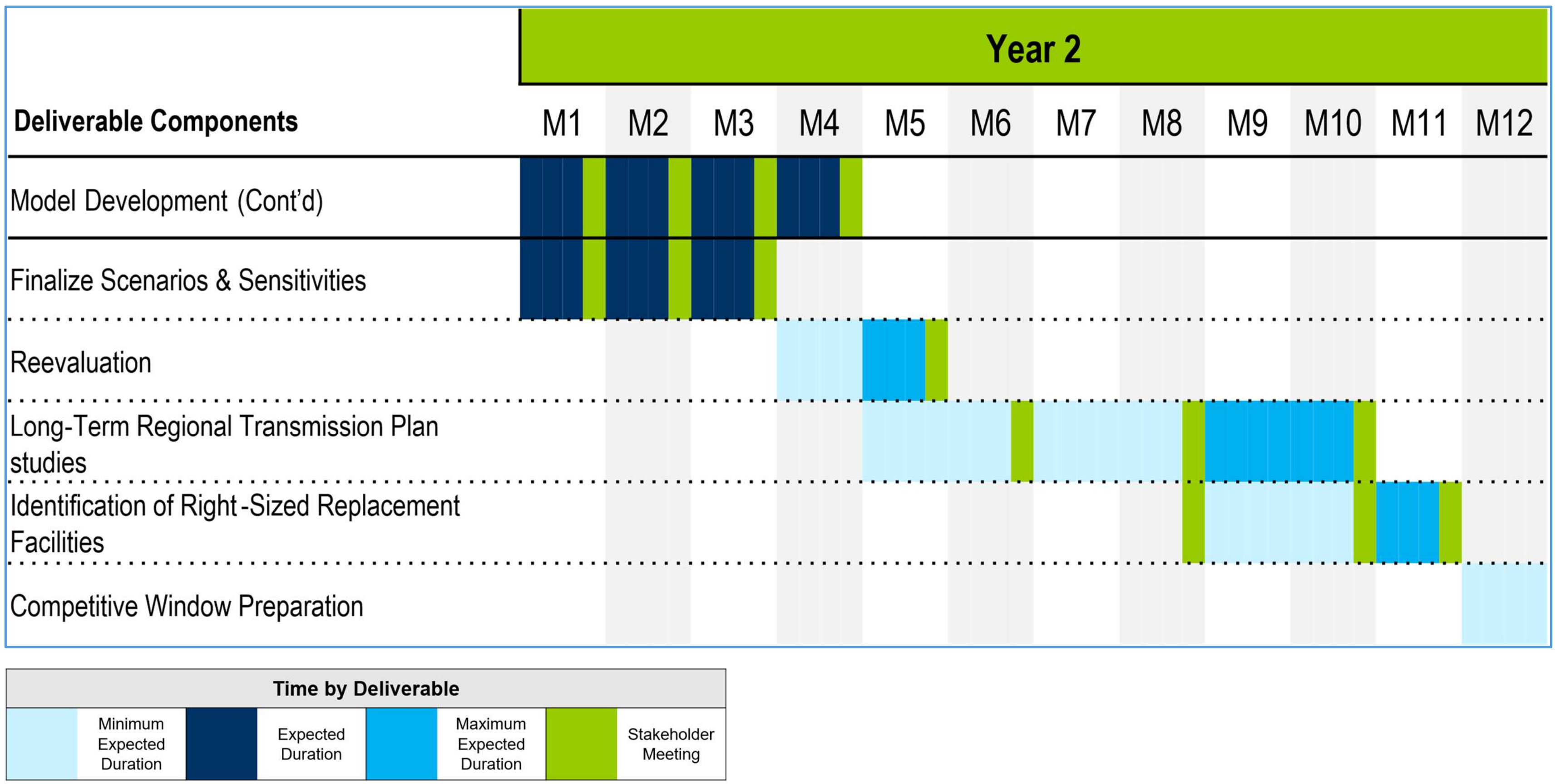
Executed on: December 12, 2025

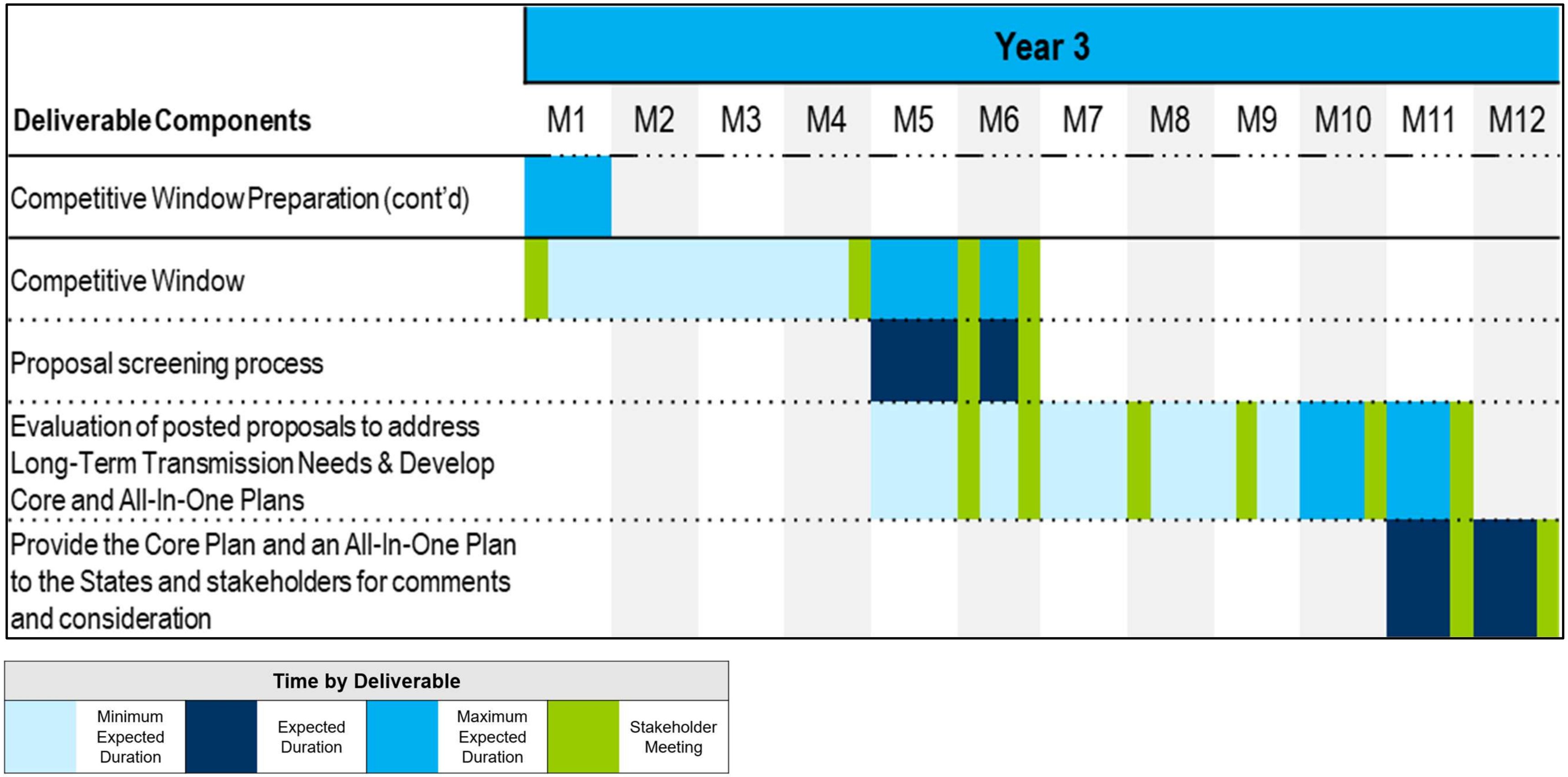
Appendix 1 (Illustration of Proposed LTRTP Protocol Timeline Estimates (Combined))

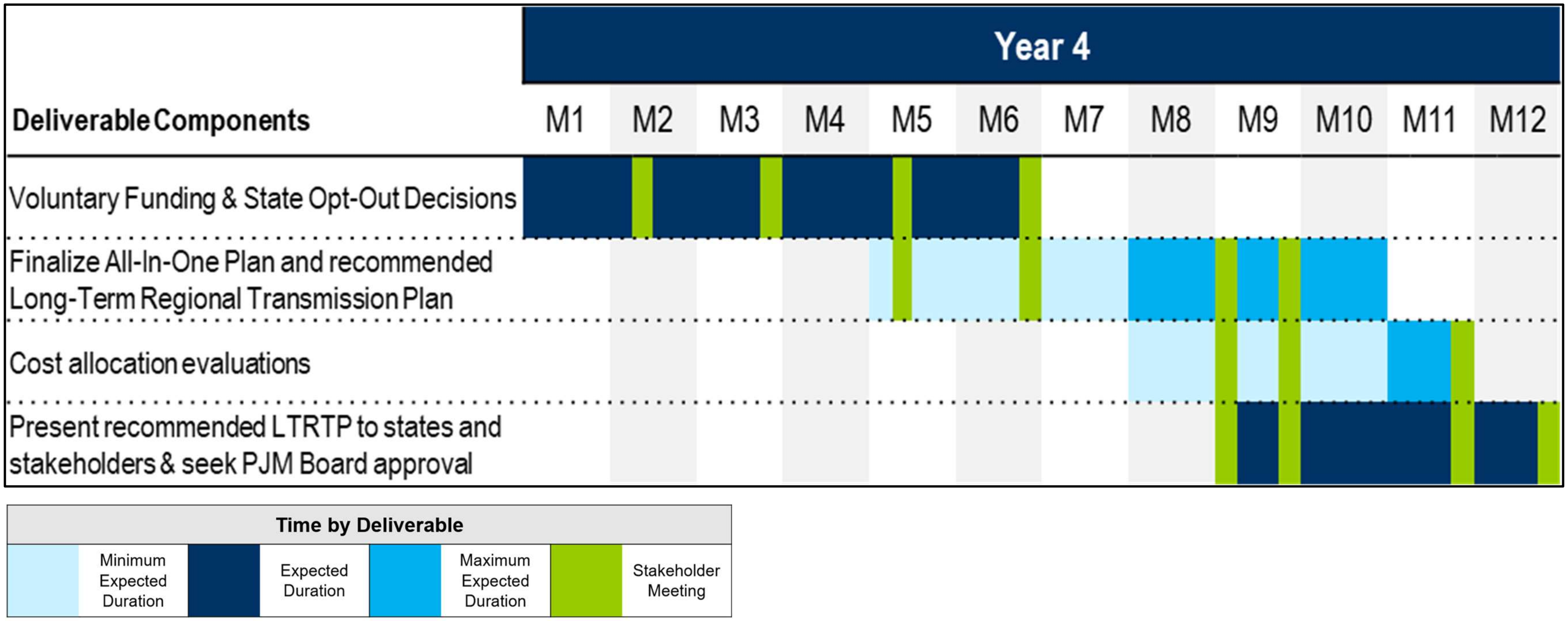


Appendix 2 (Illustration of Proposed LTRTP Protocol Timeline Estimates (By Year))




Year 2
Deliverable Components
M1
M2
M3
M4
M5
M6
M7
M8
M9
M10
M11
M12
Model Development (Cont'd)
Finalize Scenarios & Sensitivities
Reevaluation
Long-Term Regional Transmission Plan studies
Identification of Right-Sized Replacement Facilities
Competitive Window Preparation
Time by Deliverable
Minimum Expected Duration
Expected Duration
Maximum Expected Duration
Stakeholder Meeting


Year 3
Deliverable Components
M1
M2
M3
M4
M5
M6
M7
M8
M9
M10
M11
M12
Competitive Window Preparation (cont'd)
Competitive Window
Proposal screening process
Evaluation of posted proposals to address Long-Term Transmission Needs & Develop Core and All-In-One Plans
Provide the Core Plan and an All-In-One Plan to the States and stakeholders for comments and consideration
Time by Deliverable
Minimum Expected Duration
Expected Duration
Maximum Expected Duration
Stakeholder Meeting


Year 4
Deliverable Components
M1
M2
M3
M4
M5
M6
M7
M8
M9
M10
M11
M12
Voluntary Funding & State Opt-Out Decisions
Finalize All-In-One Plan and recommended Long-Term Regional Transmission Plan
Cost allocation evaluations
Present recommended LTRTP to states and stakeholders & seek PJM Board approval
Time by Deliverable
Minimum Expected Duration
Expected Duration
Maximum Expected Duration
Stakeholder Meeting