



Long-Term Regional Transmission Planning (LTRTP)

First Read: Draft Manual Language Changes

PJM Staff

Scenario Analysis and Special Studies

Special PC – LTRTP Page Turn

February 12, 2024

- LTRTP discussions with stakeholders throughout 2022 and 2023
- LTRTP M14B and M14F first read at January Planning Committee
 - See updated Issue Charge
- Additional page turn meetings held on 1/23 and 1/26 in response to feedback from January PC

- In response to feedback from stakeholders, PJM has made several updates to Manual 14B language including:
 - Administrative changes such as appropriate treatment of governing document terms
 - Defined base reliability scenario inputs and clarified that there will be one base reliability scenario with additional scenarios and sensitivities as necessary to help inform the base reliability scenario
 - Clarified use of public policy considerations and added language to better align with Operating Agreement
 - Added periodic review of approved Long-lead Projects
 - Provided more consistent references to NERC criteria
- Relevant redlines reviewed on next slides. (Does not include all revisions)

- Public policy considerations
 - o PJM will work with the Independent States Agenciesy Committee (ISAC) and the Transmission Expansion Advisory Committee (TEAC), as required by the to carry out its obligation under the Operating Agreement, Schedule 6, section 1.5.6, to identify Public Policy Requirements and Public Policy Objectives to be considered for inclusion include public policy considerations in the scenario planning process and in order to clarify the impacts of state policies on existing and future generation, as well as any electrification policies. This includes, but is not limited to, consideration of Public Policy Requirements and Public Policy Objectives for modeling load, retirements and incorporating generation additions and unannounced retirement as necessary to support forecast load growth and public policy considerations in the scenario planning processesnear-term and long-term transmission planning analyses. Following these discussions, PJM will determine changes to the assumptions, which will be included in the various scenarios, including scenarios to maintain reliability, or inform decisions relating to a state engaging in State Agreement Approach enhancements or expansions in accordance with Operating Agreement, Schedule 6, section 1.5.9.

Excerpt 1

The long-term planning process may have one or more scenarios and/or sensitivities in addition to a single base reliability scenario that PJM believes is necessary to inform system reliability needs identified in the base reliability scenario. The base reliability scenario is described in more detail in Attachment C, section 4.1. As a result, the first phase of the long-term planning cycle is devoted to working closely with the ISAC and TEAC to define the parameters that will be used in the development of these long-term planning assumptions to be used in the base case and in any scenario and sensitivity models.

Excerpt 2

Ultimately, any required Short-term Projects or Long-lead Projects that are identified and selected through the reliability planning process are presented to the PJM Board of Managers for approval. Once approved, PJM will periodically review the continued need for Long-lead Projects based on the most recent planning assumptions.



Section C.4.1: Base Reliability Scenario Inputs

In addition, the considerations of scenarios plays a much more important role in the long-term timeframe than in the near-term timeframe. To support the long-term timeframe, PJM will construct a base reliability scenario and associated base cases consisting of a minimum set of inputs that must be modeled to ensure resource adequacy and identify future transmission needs and solutions required to maintain the reliability of the system. This scenario is called the base reliability scenario. The primary inputs into the base reliability scenario are the PJM Load Forecast Report; existing generation not anticipated to deactivate as described further in this section; replacement generation from the PJM New Service Request process to ensure resource adequacy. Additional replacement generation, if needed, beyond the PJM New Service Request process will be selected as necessary to ensure resource adequacy. To determine the specific replacement generation from the New Service Request process and beyond that may be necessary to ensure resource adequacy, PJM will use widely accepted capacity expansion modeling tools that will be reviewed with stakeholders upfront and refined periodically as necessary to improve the models' performance. Examples of inputs modeled in the base reliability scenario are PJM's official load forecast, federal and state policy retirements, and the queue.

In order for an anticipated deactivation to be accounted for in the base reliability scenario it must fall into one or more of the following three categories:

1. Official deactivation announcements received by PJM
2. Public Policy Requirements
3. Company ESG (Environmental, Social, Governance) commitments brought to the attention of PJM. Such commitments must be per legal consent decree or other public statement such as a press release, financial plan or Integrated Resource Plan (IRP).

Base Reliability Scenario Primary Inputs	
Load	PJM Load Forecast Report
Retirements	Announced retirements and anticipated retirements based on Public Policy Requirements and company commitments*
Resource Adequacy	Target 1-in-10 LOLE
Generation	In-service generation and generation not in service but with an executed service agreement or a State Agreement Approach reservation
Replacement Generation (to meet 1-in-10)	Generation Interconnection Requests**
<p>* Company ESG (Environmental, Social, Governance) commitments to retire resources that are brought to the attention of PJM are included as retirements when there is a commitment to retire resources per legal consent decree or other public statement.</p> <p>** Additional replacement generation beyond Generation Interconnection Requests may be necessary to achieve resource adequacy</p>	

Exhibit X4. Illustration of Base Reliability Scenario Development Considerations & Assumptions

2.1.4 Public Policy Planning

In parallel with the near-term and long-term reliability planning process described in section 2.1.2 above, upon request, PJM will perform scenario and sensitivity studies to identify transmission needs that may be needed to support a state's selected public policies consistent with the Operating Agreement, Schedule 6, section 1.5.9 that are not already included in the reliability planning models, as well as inform actions to be taken to enhance and expand the transmission system, e.g. through a Multi-Driver Project, as part of the base reliability planning scenario.

At the beginning of the 36-month long-term planning cycle, PJM will work with the TEAC, SRRTEP, and ISAC committees and in accordance with the requirements of Schedule 6 of the Operating Agreement, to identify public policies to be examined as part of the reliability planning cycle. Once the assumptions are identified, and their inclusion determined by PJM, PJM can perform studies based on these requirements as outlined in the assumptions meetings. These studies will identify enhancements or expansions which may be needed to maintain reliability or for separate consideration by a state, or states, for development under the State Agreement Approach in accordance with the Operating Agreement, Schedule 6, section 1.5.9.

These processes may include informational scenario and/or sensitivity studies to help states seeking to enter into a State Agreement Approach enhancement or expansion of the transmission system. These additional studies are intended to help states determine whether to make a request, which may occur only for policies which can be determined to be Public Policy Requirements as defined in the Operating Agreement, for PJM to open up a competitive transmission planning solicitation window to identify Long-lead Projects to support these potential State Agreement Approach projects. These competitive transmission planning windows will be run in parallel with the reliability planning windows in a holistic manner to identify transmission enhancements or expansions that participating states could voluntarily sponsor under the State Agreement Approach discussed in Operating Agreement, Schedule 6, section 1.5.9, that can be integrated into the RTEP. The decision of a state (or states) to not act on any studies related to State Agreement Approach enhancements or expansions, will not interfere with PJM moving forward with enhancements or expansion to maintain reliability.

Subregional RTEP Committee initial assumptions meeting

This meeting is expected to occur in **December** of each year in preparation for the upcoming annual RTEP review. Prior to the meeting PJM will post its anticipated inputs and assumptions to enable stakeholder review and preparation for the meeting. At the meeting PJM will present the assumptions for discussion and input by all interested parties. Subsequent to this meeting stakeholders will have additional opportunity to provide input to PJM in preparation for the next TEAC meeting, at which PJM will present the final reliability assumptions for TEAC review. Although the initial Subregional assumptions meeting will discuss anticipated assumptions for both the reliability and market efficiency phase of the RTEP, the final TEAC review of each will likely occur at separate TEAC meetings (see also the market efficiency discussion following.) The TEAC endorsement review of final RTEP reliability assumptions, for near-term analyses, is expected to occur in early **January**. The TEAC endorsement review of final RTEP reliability assumptions, for long-term analyses, is expected to occur before the end of the first calendar year in the 36 month cycle.

PJM development of criteria violations and stakeholder participation

After the TEAC endorsement review of PJM's RTEP analysis assumptions, PJM will finalize its reference system power flow which is the starting point of its series of reliability analyses. This power flow is available to stakeholders subject to applicable confidentiality and CEII

- Today (2/12/2024): First Read of updates to M14B and M14F
- Seeking endorsement at the March Planning Committee – 3/5/2024
- Following PC endorsement, the draft language would be brought to the Markets and Reliability Committee (MRC) on March 20 for a first read, and PJM will seek endorsement sought at the April 25 MRC

LTRTP SME/Presenters:

Jonathan Kern, Jonathan.Kern@pjm.com

Emmanuele Bobbio, Emmanuele.Bobbio@pjm.com

Asanga Perera, Asanga.Perera@pjm.com

Michael Herman, Michael.Herman@pjm.com



Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com

Appendix

- Economic review - PJM may consider economic factors, as discussed during the assumptions phase of the long-term planning cycle and as documented in the problem statement for any window opened to alleviate the reliability violations identified for that long-term reliability planning cycle, to examine the system response associated with the proposals to determine if economic benefits may be realized for any proposal(s) under evaluation.

8.3 Public Policy Project Evaluation

PJM will consider all public policy driven proposals and evaluate them to ensure they do not trigger reliability criteria violations. PJM will evaluate a Public Policy proposal as described in Schedule 6 of the PJM Operating Agreement. PJM can consider calculating benefit metrics requested by one or more states to evaluate Public Policy proposals.

Attachment C: Decisional Process

