

**REGIONAL PLANNING PROCESS WORKING GROUP
MARKET EFFICIENCY ANALYSIS WHITE PAPER -
TRANSMISSION EXPANSION ADVISORY COMMITTEE (TEAC)**

Market Efficiency analysis will be performed as part of the overall Regional Transmission Planning Process (RTEP). The parameters and assumptions for completing the analysis will be reviewed with the Transmission Expansion Advisory Committee (TEAC), as well as the results. This paper describes the TEAC's role during completion of Market Efficiency analysis.

Baseline Reliability Analysis

Market Efficiency analysis will be performed after the completion of the reliability portion of the RTEP. The timeline for performing the reliability portion of the RTEP is included in Manual M-14-B. The analysis is initiated in January of each year and concludes with review by the TEAC and approval by the PJM Board. The TEAC and the PJM Planning Committee will continue to have a role in the development of the reliability portion of the RTEP, as currently described in Schedule 6 of the PJM Operating Agreement.

The results of any locational capacity market auction(s) will be used to help determine the amount and location of generation or demand side resources to be included in the reliability modeling. Generation or demand side resources that are cleared in any locational capacity market auction will be included in the reliability modeling, and generation or demand side resources that either do not bid or do not clear in any locational capacity market auction will not be included in the reliability modeling. All such modeling as described here will be aligned with the capacity construct provisions as approved by the FERC.

Scenario planning will also be performed after completion of the reliability portion of the RTEP, and adjustments are made to the RTEP as necessary.

Information developed using the current economic planning process will continue to be developed and posted as discussed further below.

Market Efficiency Assumptions/Sensitivity Analysis Parameters

PJM will develop the assumptions and sensitivity analysis parameters to be used in the Market Efficiency analysis at the same time as the Load Forecast is being developed, generally late January or early February. The parameters will include load growth, fuel cost, emission costs, discount rate(s), and potential future new generation or generation retirements. The assumptions related to potential new generation (or demand side resources) or generation retirements, will include, to the extent feasible, the results of any locational capacity market auction(s).

Preliminary assumptions and analysis parameters will be presented to the TEAC for discussion and review at a meeting that is expected to be held in March of each year. In addition, any member of the TEAC – as defined in Schedule 6 of the PJM Operating Agreement - can provide written comments to PJM within thirty (30) days after this TEAC meeting, commenting on the parameters and assumptions presented at the meeting. These written comments will consist of three (3) sections:

- Introduction, which will describe the party submitting the comments and their reason for submitting these comments
- Summary, which will consist of no more than 3 pages summarizing the positions described in the written comments
- Discussion, which will consist of no more than 20 pages describing in detail the positions taken by the party

These written comments will be posted on the PJM Website. PJM will consider these comments and present the final parameters and assumptions to be used in the Market Efficiency analysis during the TEAC meeting that is expected to be held in May of each year, when the results of the RTEP reliability analysis will also be reviewed. Following that TEAC meeting PJM will request that the PJM Board endorse the final assumptions and analysis parameters. As part of this request for endorsement, PJM will provide the written comments submitted by the parties, and will discuss these written comments with the PJM Board. This establishes the “starting point” for the Market Efficiency analysis.

Results of Market Efficiency Analysis

PJM will initiate the Market Efficiency analysis to accomplish the following objectives:

- 1) Determine which reliability upgrades, if any, have an economic benefit if accelerated or modified; and,
- 2) Identify new transmission upgrades that may result in economic benefits, using the methodology described in the Market Efficiency business rules.
- 3) Identify economic benefits associated with “hybrid” transmission upgrades. Hybrid transmission upgrades include proposed solutions which encompass modification to reliability-based enhancements already included in RTEP that when modified would relieve one or more economic constraints. Such hybrid upgrades

resolve reliability issues but are intentionally designed in a more robust manner to provide economic benefits in addition to resolving those reliability issues.

PJM will schedule a TEAC meeting to review the initial results of this analysis. The timing of this meeting will depend, to some extent, on the complexity of the analysis and the number of upgrades that need to be studied. However, it is anticipated that this meeting will occur during the 3rd quarter of each year. At this meeting, PJM will provide a summary of the analysis results, including the initial results of the scenario planning studies, a description of any congested areas that will be analyzed using Market Efficiency analysis, and a description of any recommendations for accelerating reliability projects based on economic considerations. PJM will also provide a high-level estimate of the transmission upgrades then being considered.

At the completion of this TEAC meeting, any member of the TEAC can provide written comments within sixty (60) days of this meeting.

These written comments will consist of three (3) sections:

- Introduction, which will describe the party submitting the comments and their reason for submitting these comments
- Summary, which will consist of no more than 3 pages summarizing the positions described in the written comments
- Discussion, which will consist of no more than 20 pages describing in detail the positions taken by the party
- Parties wishing formally to submit alternative proposals of their own are encouraged to do so separately, as described further, below

The Office of the Interconnection will have the responsibility of compiling comments from TEAC participants. All written comments will be posted to the PJM web site and provided to the PJM Board of Managers together with a PJM staff summary that will focus on conveying the following: (1) what the issues are; (2) who has the issues; and, (3) why the issues are of importance to Board consideration of RTEP approval. Communication to the Board of Managers will not include results of voting

When the scenario planning and reliability project economic acceleration analyses have been completed, PJM will schedule a TEAC meeting to review the results. The timing of this TEAC meeting will depend, to some extent, on the amount and complexity of analysis that must be performed. However, it is anticipated that this TEAC meeting will take place during the 4th quarter of each year. At this meeting PJM will provide a summary of the analysis results, including an update of the Market Efficiency analysis, a description of any

recommendations for accelerating reliability projects based on economic considerations, and the results of the scenario planning analysis.

Any TEAC member or other entity (consistent with PJM Operating Agreement Schedule 6 provisions), may formally submit alternative proposals for evaluation under the Market Efficiency analysis at any time, but no later than December 31st of each year in order to be considered in the then-current planning cycle. These alternatives will be posted on the PJM Website. PJM will consider these alternatives, and establish the final set of proposals to be included in market efficiency analysis. The process of formally submitting proposals is not limited to transmission solutions but may also include generation solutions via PJM's established interconnection queue process; or, demand side management and load management proposals as well.

Regardless of all proposals considered – whether proposed by PJM or other parties - PJM will establish a “go/no-go” decision-point deadline (or final commitment date) after which existing RTEP transmission components will not be deferred or cancelled. This will provide certainty to developers, owners and investors.

When the Market Efficiency analysis has been completed in the 1st quarter of the next year, PJM will schedule a TEAC meeting to review the results of the Market Efficiency analysis. The timing of this TEAC meeting will depend, to some extent, on the amount and complexity of analysis that must be performed. However, it is anticipated that this TEAC meeting will be held in April. This is the same meeting at which the assumptions and parameters will be discussed for the next cycle of Market Efficiency analysis.

After this TEAC meeting, any member of the TEAC can provide written comments within sixty (60) days of this meeting. These written comments will consist of three (3) sections:

- Introduction, which will describe the party submitting the comments and their reason for submitting these comments
- Summary, which will consist of no more than 3 pages summarizing the positions described in the written comments
- Discussion, which will consist of no more than 20 pages describing in detail the positions taken by the party

PJM will schedule a final TEAC meeting for this cycle of market efficiency studies to review the plans to be taken to the Board for endorsement. Recommended projects will be taken to the PJM Board for endorsement, and will either be included in subsequent RTEP analysis if there is a “volunteer” to build the

project, or a report will be filed with FERC in accordance with Schedule 6 of the PJM Operating Agreement. As part of this request for endorsement, PJM will provide the written comments submitted by the parties, and will discuss these written comments with the PJM Board.

Within the limits of confidential or proprietary information (for example, PJM cannot provide the complete production cost database under the current confidentiality provisions), PJM will make all of the information used to develop the Market Efficiency recommendations available to market participants to use in their own, independent analyses.

Review of Project Costs

To assure that projects selected for Market Efficiency continue to be economically beneficial, both the costs and benefits of these projects will periodically be reviewed, nominally on an annual basis. Substantive changes in the costs and/or benefits of these projects will be reviewed with the TEAC at a subsequent meeting to determine if these projects continue to provide measurable economic benefit and should remain in the RTEP.

For projects with a total cost exceeding \$50 million, an independent review of project costs and benefits will be performed to assure both consistency of estimating practices across PJM and that the scope of the project is consistent with the project as proposed in the Market Efficiency analysis.

Economic Planning Analysis

Analysis to determine the gross and unhedgeable congestion, as provided for in the current economic planning process, is on-going and will be posted on a monthly basis as information for market participants. Market projects to relieve congestion identified through this analysis can be submitted by market participants through the queue process at any time, and will be evaluated by PJM under the then current business rules contained in the PJM Tariff and Operating Agreement.

Market Solutions

As described above, a TEAC member or other industry entity (consistent with the RTEPP in Schedule 6 of the PJM Operating Agreement) may submit a market solution at any time. However, to be considered in the current cycle of Market Efficiency analysis, a Market Solution must be submitted by December 31 of the year in which the Market Efficiency analysis is initiated.