Straw Proposal for Initial Changes to PJM's Regional Transmission Planning Process

OVERVIEW

Over the past year PJM staff and stakeholders have undertaken a comprehensive review of various ways to improve the Regional Transmission Expansion Planning (RTEP) process and related generator interconnection process. This effort is driven by many factors, but perhaps the most important driver is the changing planning landscape given impacts of the economy, new environmental regulations and the need to address contingencies that could affect the timing of reliability projects. By expanding the criteria for projects and allowing for a broader range of assumptions within scenario planning, PJM and its Members believe the PJM system will be better prepared to manage a host of uncertainties in a changing environment.[1]

Through the Regional Planning Process Task Force (RPPTF), PJM staff and Members have discussed how the planning process can consider at-risk generation, incorporate public policies enacted by state and federal entities, enhance the integration of renewable resources and account better for the growth of demand response. The RPPTF also has reviewed how PJM can consider and designate alternative transmission proposals to an entity other than a local incumbent transmission owner. All of these goals point toward a more robust planning process.

This paper seeks to explain the key concepts that appear to have gained consensus within the RPPTF. All of these concepts have been reviewed and discussed in RPPTF meetings.[2] Along with proposed draft language to amend Schedule 6 of the PJM Amended and Restated Operating Agreement ("Operating Agreement"), PJM staff offers this short document to provide all stakeholders with a written recitation of the various proposals that have been discussed and advanced by PJM Staff.

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[1] A more scenario-driven approach is also consistent with interconnection-wide analyses being undertaken at - stakeholder request through the Eastern Interconnection Planning Collaborative.

[2] Importantly, the RPPTF has adhered to the processes for consensus-based resolution that is explained in "Manual 34, The PJM Stakeholder Process." PJM staff collaborated in building an extensive matrix of issues and proposed solutions that significantly informed the development of this Straw Proposal. This matrix can be found at: http://www.pjm.com/committees-and-groups/task-forces/rpptf.aspx

PJM staff strongly encourages stakeholder feedback on this document and the proposed changes to the Operating Agreement. As always, PJM is open to considering alternatives that stakeholders wish to advance although it is important that such submittals be timely in light of the process and timing for a submittal to FERC.

SUMMARY OF STRAW PROPOSAL

A. These improvements would apply to the Baseline Reliability Analysis portion of the RTEP:

1. Load Forecast - Recommend to continue with ITRON recommendations and to develop a different forecast model for different stages in the planning process;

2. At-Risk Generation - remove generation not clearing two successive base residual auctions and either incorporate more proactive retirement analysis in the process or remove a portion of generation subjected to environmental restrictions;

3. Queued Generation - deferred to Interconnection Process Senior Task Force ("IPSTF") which could suggest to include generators in the interconnection queue into the RTEP before receiving an executed Interconnection Service Agreement (ISA); and

4. Dead Band - 100% loading remains the trigger to include a project into the RTEP but, once included, a project would remain in the RTEP unless it goes below 95% loading.

B. These improvements would incorporate four new "Decision Framework" models within the RTEP that allow more information, more scenario planning and a broader range of assumptions to account for changing circumstances. The four decision frameworks are:

1. FYI to Market – perform more scenario analyses and provide the study results to the market to allow the market to determine what to build

2. State Agreement - allow one or more states to determine how to jointly or individually meet their respective renewable portfolio standard (RPS) goals

3. Critical Mass - consolidate baseline, market efficiency, and interconnection needs

4. Proactive Build - develop and implement "high hurdle" bright line triggers for policy initiatives

Improvements to the Baseline Reliability Analysis within RTEP

Load Forecast

The RPPTF recommends that PJM continues to implement the recommendations suggested by ITRON[3]. These recommendations are being reviewed and further developed by the Load Analysis Subcommittee. Any recommendations and manual changes will be endorsed by the Planning Committee and then approved ultimately by the Markets and Reliability Committee.

At-Risk Generation

The RPPTF recommends that the baseline planning process needs to remove generation that has not cleared two consecutive Reliability Pricing Model (RPM) Base Residual Auctions (BRAs). Failure to clear two consecutive BRAs is an indication that the units are not economically viable given, for example, current and future environmental restrictions imposed by the Environmental Protection Agency ("EPA"). However, there is a potential issue that this process could divulge market information that is proprietary. The RPPTF would need to address how to handle this issue before this recommendation could be implemented.

The RPPTF also believes that the Proactive Build decision framework is another method which will assist PJM in addressing the treatment of at-risk generation. This approach is discussed in greater detail below.

[3] The ITRON recommendations can be found at - http://www.pjm.com/~/media/committees-groups/committees/pc/20101110/20101110-item-07-pjm-position-on-itron-recommendations.ashx).

Queued Generation

The methods developed to address how queued generation will be handled in the RTEP process will largely lie with the work performed by theIPSTF. This task force has been charged to develop improvements to the overall efficiency, effectiveness, and transparency of the interconnection process. Any improvements developed by this task force will be incorporated into the overall RTEP process. However, the RPPTF is considering additional changes to the RTEP which will help to address queued generation. The Critical Mass framework, which is described in greater detail below, could be employed to build out transmission to enable more rapid interconnection of generation projects.

Dead Band

The original PJM reliability planning was very general in nature - "the RTEP shall conform to applicable reliability criteria and shall consolidate transmission needs… on the bases of maintaining reliability… in an economic and environmentally acceptable manner." Cost allocation under these general considerations was negotiated among transmission owners with a recommendation provided by PJM. PJM also retained a provision that would allow it to determine cost allocation if negotiations were not successful

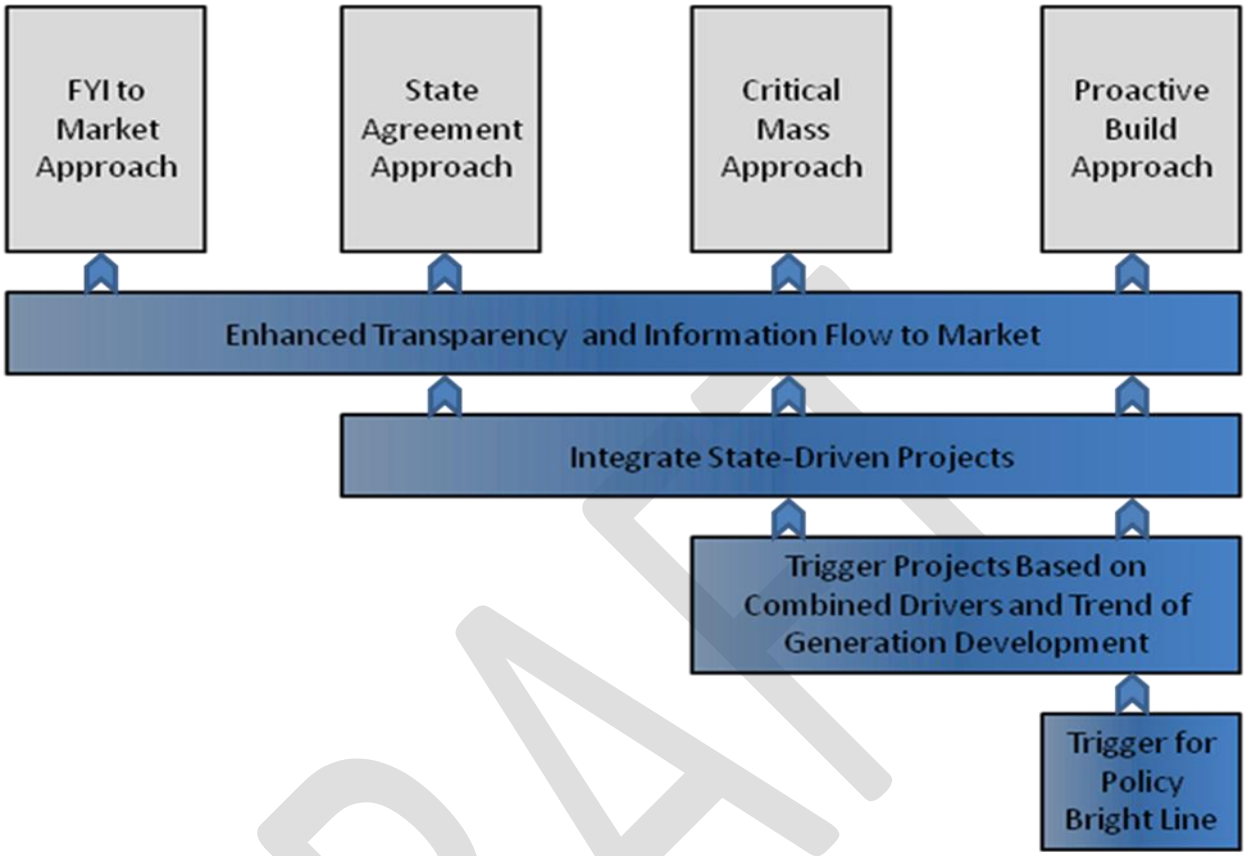
The "Bright Line" concept for the RTEP was formulated in 1999 as a result of the development of the generation interconnection process. The bright line states that PJM tests compliance with all NERC Reliability Standards and transmission owner criteria. When a facility reaches 100% of the applicable limit under test conditions a potential violation exists and PJM must develop a plan to address the potential violation. If a facility remains at or below 99.9% there is no violation and no need for an upgrade.

The new generation interconnection process required the ability to allocate costs among interconnecting generators and between generators and existing network load. The bright line test provided for a clean "baseline" upon which to evaluate generators. If there is no violation in the baseline and a violation exists when a generator is added, the upgrade to resolve the violation would not have been needed "but for" the addition of the generator

The RPPTF recommends incorporating a "dead band" into the baseline reliability analysis. A dead band (or a neutral zone) is an area between two set points where no changes can or will occur. The purpose of the dead band is to provide more flexibility to keep an upgrade or project in the RTEP while taking into account system changes that occur from year to year.

The proposed dead band for the RTEP would be 95% loading or higher on a facility. In application, the existing bright line trigger requiring an upgrade or project to address a potential violation would remain at its current level of one hundred percent (100%). If a subsequent re-tool of the need for the project continues to show facility loadings in excess of 95%, the project falls into the dead band and remains in the RTEP moving forward. The dead band is expected to minimize and perhaps eliminate the whip-saw effect of taking projects in and out of the RTEP due to changing conditions.

Decision Framework Models



The four approaches shown in the above diagram are not mutually exclusive. All could be utilized for different reasons. Or, some could not be utilized. These approaches are conceptual. They represent the range of possible approaches that have been discussed in the PJM stakeholder process and are described below. In many instances, there are options within each conceptual approach. .

FYI-to-Market

The FYI-to Market approach identifies what scenarios and sensitivities should be studied by PJM. There are various options for determining which scenarios and sensitivities should be studied. To a degree, PJM currently performs studies consistent with this approach beyond the current bright line test for reliability and market efficiency (move footnote here). PJM intends to enhance this approach by soliciting greater stakeholder input to expand the scenarios and sensitivities studied and improve reporting of the study results.

Options for identifying the assumptions, scenarios, sensitivities, and variations of the studies that would be performed under this approach could include:

1. EIPC/EISPC model: The Eastern Interconnection Planning Collaborative (EIPC) and the Eastern Interconnection States' Planning Council (EISPC) were formed in 2009 (?) to achieve more interconnection-wide coordination planning for the Eastern Interconnection. For input into the EIPC/EISPC approach, the states form a group that identifies the studies they would like PJM to perform by agreeing to a specific set of proposals to be studied and then prioritizing which requests/proposals should be studied based on specific criteria.

2. Priority Ranking model: All requests/proposals are ranked as high, medium or low priority based on specific criteria.

3. Current RTEP study model: Based on stakeholder input, PJM performs screening analysis and identifies which requests/proposals it will study in detail and notifies the stakeholders.

Under this FYI to Market Approach, results would be made publicly available on an information only basis. PJM would not include any projects in the RTEP based on the analysis alone.[4] Nor PJM would direct any transmission build based solely on the analysis. The study results would inform the market and market participants could choose whether to make investments based on the information provided.

There are multiple benefits to utilizing this decision framework.

1. Incorporating additional stakeholder input will ensure that a broad range of possible future scenarios and analyses are being incorporated into each RTEP planning cycle. The initial input assumptions and scenario analyses will be vetted through the Transmission Expansion Advisory Council (TEAC).

[4] This is in contrast to how PJM plans the system to address reliability criteria violations or to address transmission congestion. PJM's current rules are very prescriptive as to what triggers a project to be included in the RTEP. The current rules address when projects addressing reliability or market efficiency need be included in the RTEP. Market efficiency is the term used to describe projects that are planned to relieve transmission constraints.

2. No impact to cost allocation methods. A developer and or other market participant will be responsible for filing their rate cases with FERC

3. Such approach is compliant with Order No. 1000

4. Study results will provide more information to market participants

State Agreement Approach

A single state or a combination of interested states could identify public policy requirements, as well as related infrastructure needed to satisfy those requirements. PJM would include the resulting projects in the RTEP if the following criteria were met;

1. If a combination of states, the states must enter into a formal agreement memorializing their agreement to cover the specific projects for which they are seeking RTEP inclusion and to support the FERC-accepted cost allocation assigned to those states for the project. The agreement would provide PJM and its stakeholders the certainty to include the project(s) in current and future RTEPs.

2. Perform analyses to reliably interconnect the facilities.

3. A FERC-approved cost allocation methodology for the project which would identify how the states would pay for the project and how the states would not be allocated costs for other public policy driven projects in the PJM region.

4. Measure of certainty by the participants that the project may be sited

Benefits of this approach:

1. Provides a vehicle through which states can develop projects to satisfy their public policy requirements

Critical Mass Approach

The Critical Mass approach would allow for transmission projects to be identified that satisfy a range of potential drivers and for which only some portion of the project's capability is

immediately required. The expectation would then be that the remaining capability would be available to meet other needs in the foreseeable future.

Application of this approach could be limited to specific types of resources, *e.g.*, location constrained resources such as generation resources that are typically constrained due to their location, relative size and immobility of their fuel source. Such resources are often remotely located from load and have limited ability to minimize their interconnection costs.

Under this approach each generator would be responsible for paying its *pro rata* share of the going forward costs of the line. Until the line is fully subscribed, the cost of the unsubscribed portion of the line would be included in the RTEP. The 2-prong test required to demonstrate commercial interest includes:

1. A minimum percentage of the capacity of the new interconnection facilities (*e.g.*, 25-30%) must be subscribed through executed interconnection service agreements
2. A tangible demonstration of additional interest in/support for the project (*e.g.*, 25-30%) above and beyond the capacity covered by the interconnection service agreements.

The benefits of this approach:

1. A more efficient transmission solution may be selected as compared to building for each incremental generator connecting individually. However, it is not without risk as there is a possibility that the line may not be fully subscribed by interconnecting generators.
2. The sharing of upgrades between generator interconnection projects and other reliability based drivers. For example: Based on PJM's planning criteria, reliability analysis could require PJM to reinforce a lower voltage transmission facility; however, if PJM has significant wind generation in its interconnection queue and knows that if 25% of that wind is developed the lower voltage transmission facility will not be enough to accommodate that generation. This approach would consider building the additional upgrades needed to address both the needs of the generators as well as system needs to accommodate PJM's planning criteria.

Proactive Build Approach

The proactive build approach involves scenario planning with identified, established criteria/thresholds for determining what projects (other than reliability and market efficiency projects) to include in RTEP. To satisfy the criteria/thresholds, PJM would proactively plan transmission in anticipation of that need. The criteria could set fairly high thresholds to trigger projects and could be set for various purposes. Below are conceptual examples.

1. Renewable Portfolio Standard (RPS) goals: If states were not meeting even X % of their collective RPS goals, a project would be included in RTEP to allow the renewable requirements to be satisfied. The percentage level would need to be determined and hard-coded into the planning process. However, in determining what projects to build to satisfy that percentage level, PJM would need to have a process that solicits input from the states to determine what potential renewable resources and the location of those resources that a proposed transmission project would accommodate. .

2. Significant Numbers of Potential At-Risk Generation. This approach could be applied to externalities that may result in large numbers of potential generation retirements, *e.g.*, adoption of EPA regulations, will trigger retirements of large amounts of generation. The need to proactively build transmission would be based on the magnitude of the impact of potential generation retirements.