



PJM Interconnection Queue Process Challenges & Recommendations

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TO Objectives for Interconnection Queue Process

TOs collaborate with PJM and developers to support changes to existing resources and to support interconnection of new resources while maintaining the safety and reliability of the grid.



Coordinate with PJM and developers to identify system violations due to interconnection of new resources or changes to existing resources.



Develop system upgrades to address violations and to identify attachment facilities needed for interconnection.

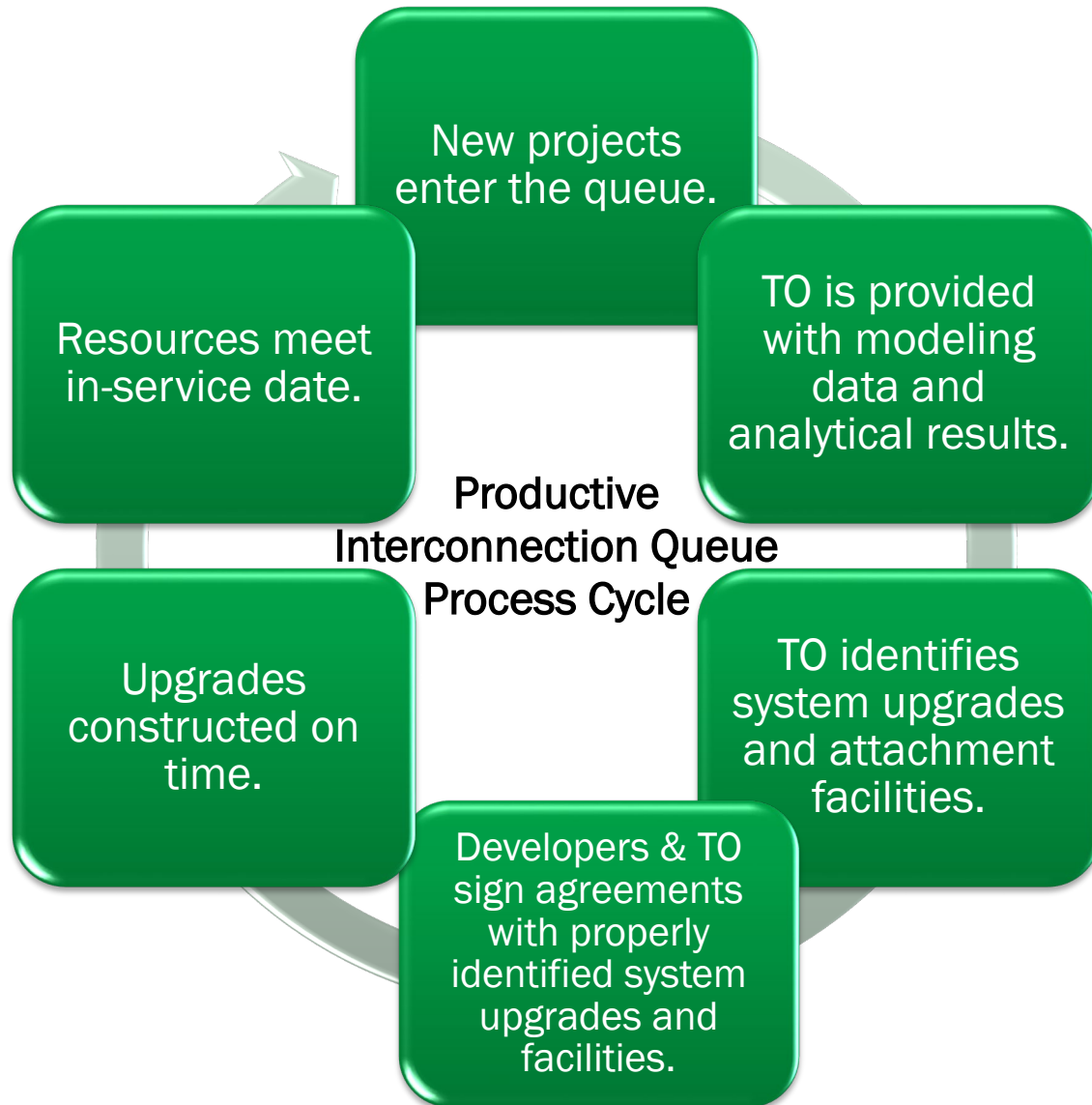


Execute analytical studies and legal agreements with system upgrades properly identified to ensure the timely construction of system reinforcements.

Observations of PJM Interconnection Queue Process

- Significant increase in queue activity has stressed many aspects of the Interconnection Queue Study Process.
- Challenges faced by many Transmission Owners (TOs) center around queue closing period, speculative projects, and volume of retools.
- Timing improvements to the Process may come at a cost to stakeholders, decreasing flexibility while increasing reliability and accuracy of information.

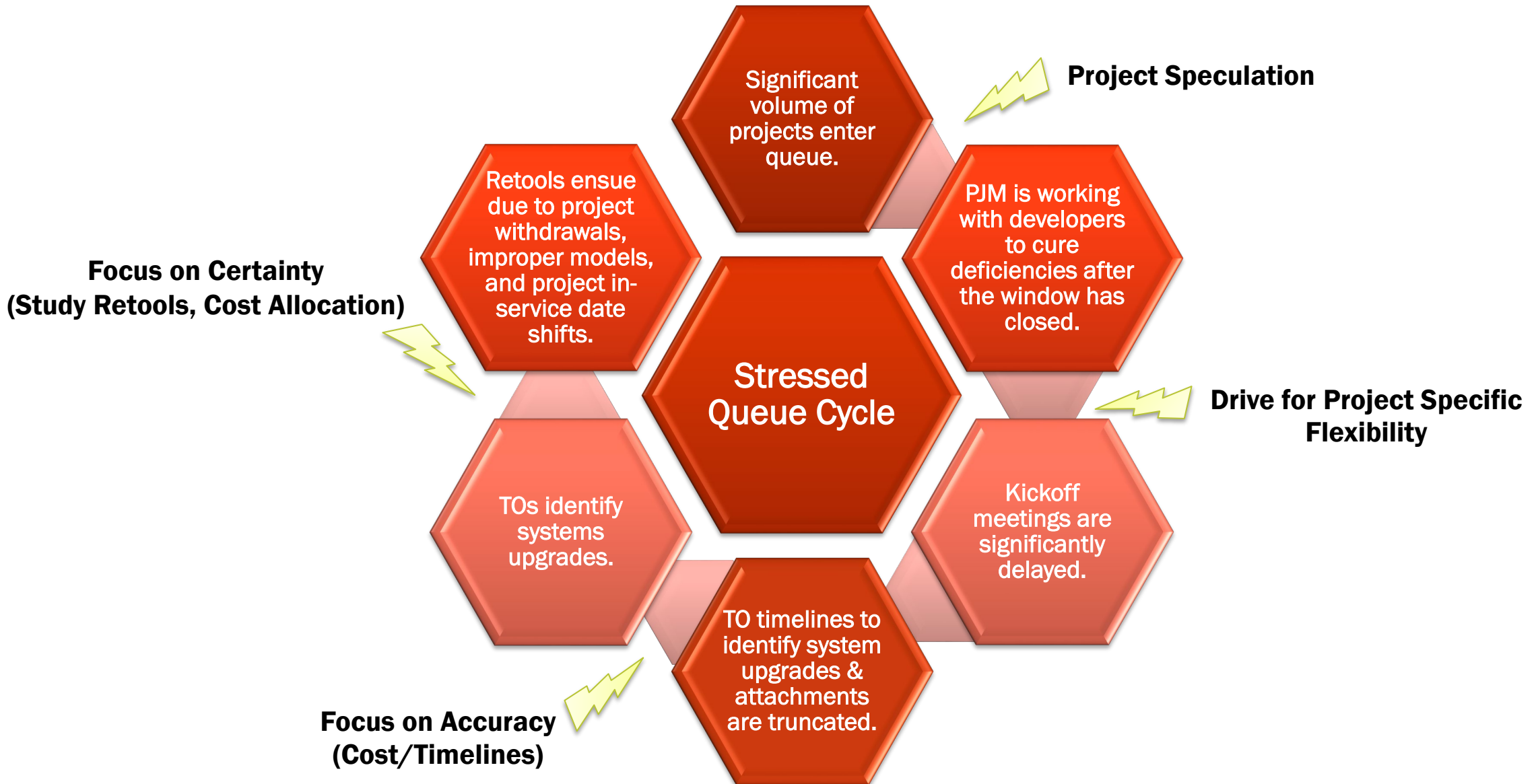
Interconnection Queue Process Benefits



➤ Benefits of the Interconnection Queue Process

- ❖ *The PJM Interconnection Queue Process has helped lead to the commercialization of numerous resources.*
- ❖ *Interconnection Queue Administration*
 - ✓ Standardized and systematic methodology to process all applicants.
 - ✓ Simplified process for small projects (<20MW).
 - ✓ Single point of contact for external communications.
- ❖ *Studies and Agreements*
 - ✓ Feasibility Study and Impact Study – Identify preliminary system violations and attachment facilities; and eliminates unviable projects.
 - ✓ FSA, ISA, & CSA Agreements – Refine needed system upgrades and determine construction schedule for commercialization of projects.

Interconnection Queue Process Challenges



Flooding of Project Submittals at Queue Close

Challenge

- Despite six-month open queue window, majority of projects are submitted in the last few days.

Impacts

- Stresses PJM resources to process applications.
- Delays the official close of the queue (i.e. kickoff calls, model development, etc.)
- 42% of last PJM queue submittals occurred on the last day.
 - (Exelon zones – 51% submitted last day)

Recommendations

- *Shorten the queue window by up to two months to allow for cure period, model development, timely kickoff meetings, etc.*
- *Alternatively, impose a soft close when applications are due up to two months prior to queue closing.*
- *Properly incentivize projects to enter the queue earlier.*

Overreliance on 10-day Deficiency Cure Period

Challenge

- “Last minute” applications depend on/stress the ten-day cure period after queue close.
- Drive for flexible/timely resolution of deficiencies pressures sound policies.

Impacts

- Need for FERC waivers as a result of potential missed tariff timelines.
- Continued delays of model issuance, kickoff calls, study commencement.
- Shortened study windows.
- Reduced window of opportunity for TO determination of cost/schedule.

Recommendations

- *Eliminate the post close cure period (hard stop).*
- *Create cure period within queue (soft close).*
- *Reduce queue window by one month to allow for cure period, kickoff meetings and model development.*
- *If PJM requests a waiver for extensions of time, commensurate extensions should be provided to other parties.*

Impact of Speculative Queue Projects

Challenge

- Speculative projects enter the queue, relying on inherent flexibilities to concurrently refine their business development plans.

Impacts

- Hinders other queue projects from moving forward due to uncertainty of speculative queue project(s) and accompanying upgrades.
- Drains TO resources for identifying system upgrades for projects that are highly unlikely to move forward.
- Allows developers to propose multiple projects with intention of selecting most favorable one.
- Results in retools, stress on cost allocation, delayed studies.

Recommendations

- *Create/Tighten/Enforce certainty requirements.*
- *Consider assigning network upgrades based on first ready, first-served approach.*

Effect of “Stale” Projects

Challenge

- Queue process allows for challenged/speculative projects to hold position via design refinement, non-material modification, milestone delay (scope changes and/or suspensions).

Impacts

- TO must reserve capacity and/or network upgrades.
- Retools/restudies delayed.
- Identified network upgrades become outdated (potential upgrade cost shifts).
- Speculation is encouraged (wait and see).
- Other queue projects held in “limbo.”

Recommendations

- *Create/Tighten/Enforce requirements to deter speculative projects from entering.*
- *Create/Tighten/Enforce mechanisms to cancel “stale” projects (i.e. time limits).*
- *Develop processes to reward project certainty.*
- *Consider assigning network upgrades based on first-ready, first-served approach.*

Effect of Numerous Retool Studies

Challenge

- Retool studies are often required for project modifications and for when generators drop out of the queue leading to uncertainty in previously identified system upgrades.

Impacts

- Although the TO is actively engaged in engineering the upgrade, the TO isn't always timely notified of a violation no longer existing and the network upgrade being withdrawn.
- Improper modeling assumptions of network upgrades leads to additional analysis being performed by the TO and can contribute to late submittal of results.

Recommendations

- *Establish protocols for informing TO of active, withdrawn, and on-hold network upgrades.*

Effect of “Stale” Models on other Processes

Challenge

- The Interconnection Queue Models may not align with the RTEP models. The increasing volume of projects within each queue are being studied using stale models.

Impacts

- System reinforcements for queue projects may conflict with upgrades for other PJM planning studies (i.e., RTEP, market efficiency, generator retirements).

Recommendations

- *Stakeholders should consider re-evaluating modeling assumptions used for interconnection queue studies.*

Need for “Simple” Process Changes

Challenge

- PJM performs in-depth agreement reviews, inclusive of non-conforming changes, after the TOs and the Interconnection Customers (ICs) have signed the agreements (ISAs, ICSAs, WMPAs).

Impacts

- The TOs and ICs are required to review the agreements and sign twice since the conformance reviews are performed after-the-fact.
- TOs are put on tight deadlines to sign the agreement with non-conforming changes although the TOs need additional time to evaluate the changes.

Recommendations

- *PJM should perform reviews of the pro forma and non-conforming changes before issuing contracts to TOs and ICs.*

Need for “Certainty” in Process

Challenge

- At times, due to project specific challenges, the point of interconnection (POI) can remain unclear through most of the interconnection process including the Facility Study Agreement phase.

Impacts

- Studies challenged/delayed.
- Restudies required with changes.
- Accuracy of scope/timeline is difficult without valid POI information.

Recommendations

- *Additional requirements should be considered to establish that the developer has site control and property rights earlier on in the queue process. This will ensure that the TO can accurately reflect the new resource’s POI when identifying system upgrades and performing engineering.*

Interconnection Queue Process Recommendations Summary

Improve Timing of Queue Window Process

Shorten the queue window or impose a soft close by up to 2 months to allow for cure period, model development, and timely kickoff processes.

Properly incentivize projects to enter the queue earlier.

Increase Queue Project Certainty

Create/Tighten/Enforce certainty requirements to encourage viable project queue submittals.

Consider assigning network upgrades based on first ready, first served approach.

Create/Tighten/Enforce mechanisms to cancel "stale" projects (i.e. time limits).

Improve Modeling and Network Upgrade Identification Processes

Establish protocols for informing TO of active, withdrawn, and on-hold network upgrades.

Re-evaluate modeling assumptions used for interconnection queue studies.

Improve requirements to ensure the developer has site control and property rights earlier on in the queue process.