



PJM Market Efficiency Generation Expansion Model

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Market Efficiency Process Enhancement
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- Generation Expansion model refers to the creation and verification of an expected resource plan for the PJM active footprint within the production costing simulations
- This entails reviewing the characteristics, bus locations and timing of modeled supply resources over the entire fifteen year study period

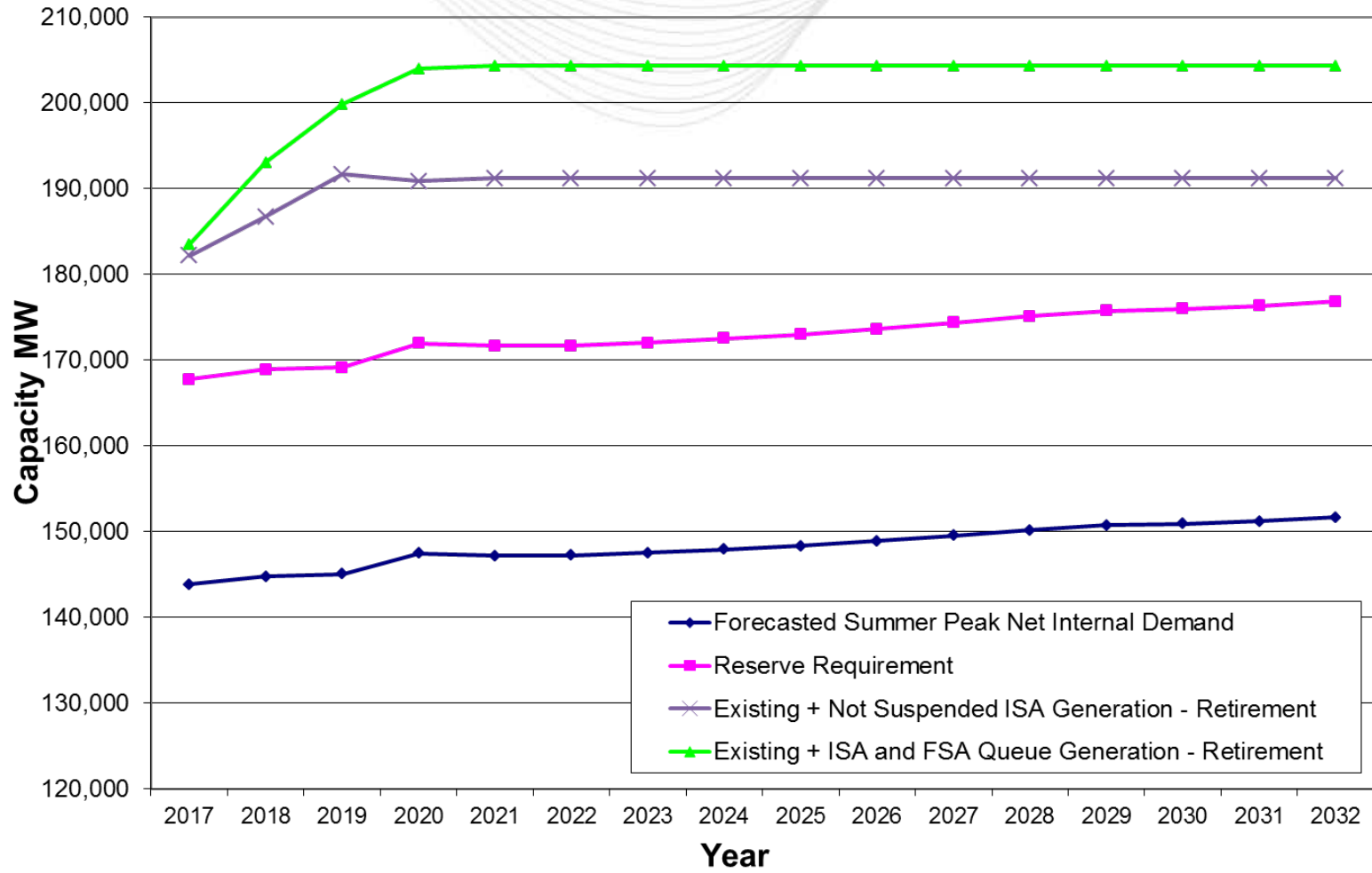
- PJM Operating Agreement Section 1.5.7 Development of Economic-based Enhancements
 - The assumptions used in the market efficiency analysis described in subsection (b) ... shall include, but not be limited to, the following:
 - (iv) Addition of Customer Facilities pursuant to an executed Interconnection Service Agreement, Facility Study Agreement or executed Interim Interconnection Service Agreement for which Interconnection Service Agreement is expected to be executed. Facilities with an executed Facilities Study Agreement may be excluded by the Office of the interconnection after review with the Transmission Expansion Advisory Committee.
- PJM Manual 14B C.7.3 General Procedures and Assumptions
 - Step 1: Develop Base case
 - Generation and Merchant Transmission projects that have proceeded at least through the execution of the Facility Study Agreement stage of the interconnection process are considered in the model along with any associated network upgrades.

- Generation Expansion model includes
 - In-service units
 - units with signed ISAs/Interim ISAs/ or not requiring an ISA
 - units with an executed FSA or suspended ISA
- Synchronized with the Machine List usually posted by transmission Planning at February TEAC

- 1 • Identify capacity and energy resources within the current RTEP load flow case
- 2 • Retire existing resources according to officially announced timetables
- 3 • Extend existing resources in the absence of official retirement announcement
- 4 • Add or modify future unit specific resources based on queue processing and load flow representation
- 5 • Retire database future resources not meeting queue processing requirements
- 6 • Scale resource capacity to meet planned installed reserve margins

Generation Expansion – Reserve Margin Impact

PJM Market Efficiency Reserve Margin



- A significant number of FSA units are never built.
- Including all FSA units increases the uncertainties in the Market Efficiency models and projected congestion patterns.

- **FSA Unit**
 - Generation projects that have proceeded at least through the execution of the Facility Study Agreement stage of the interconnection process

- **ISA Unit**
 - Generation projects that have signed an Interconnection Study Agreement with PJM upon completion of all required PJM reliability studies