

Market Efficiency Update

Transmission Expansion Advisory Committee October 11, 2018

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Upcoming Market Efficiency Training

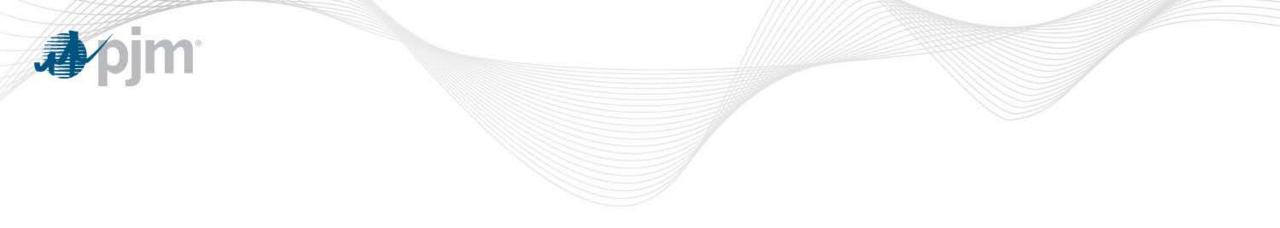
- Market Efficiency Training scheduled for October 16th 2018.
- Half-day training course designed to educate participants on the Market Efficiency aspects of PJM's RTEP process.
- Combo session (simultaneous in-person and virtual sessions).
- Cost: There is no charge to PJM Members. Non-Members are charged a nominal fee.
- Offers PDH and CEU
- <u>https://www.pjm.com/Calendar-Events/PJM-Calendars/Training-Events/2018/October/16/ip-mkt-efficiency.aspx</u>

Market Efficiency Timeline

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2018/19 RTEP Long Term Window



Updated Market Efficiency Base Case (10-08-2018)

- Posted updated 2023 Base Case (XML files PROMOD 11.1.13 format)
 - Includes MISO feedback received by Oct 4th
 - Includes PJM stakeholders feedback received by Oct 4th
 - Posted model includes all years: 2019, 2023, 2026, 2029
 - Also posted separate PROMOD XML file to remove FSA units

http://www.pjm.com/planning/rtep-development/market-efficiency.aspx

- Posted Additional Files
 - Updated event file
 - 15-years Monte Carlo outage library
 - Current Congestion Output Report (simulated years 2023 and 2026)
- Final Base Case to be posted before the start of Long-Term Window



2018/19 Market Efficiency Assumptions

- Posted Market Efficiency Assumptions Whitepaper
 - <u>https://www.pjm.com/-/media/committees-</u> <u>groups/committees/teac/20181011/20181011-2018-market-efficiency-analysis-</u> <u>assumptions.ashx</u>
 - Recently announced First Energy retirements not included (network upgrades not finalized at this time)
- Financial parameters, Discount Rate and Carrying Charge, NSPL based on the Transmission Cost Information Center spreadsheet
 - <u>http://www.pjm.com/planning/rtep-upgrades-status/cost-allocation-view.aspx</u>
 - Discount Rate: 7.37%
 - Carrying Charge: 12.84%



2018/19 Market Efficiency Sensitivities

Sensitivity	Range
Load Sensitivity	Plus or Minus 2%
Gas Sensitivity	Plus or Minus 20% Henry Hub
No FSA Sensitivity	Remove all units with FSA or suspended ISA status

• PJM reserves right to add sensitivities as necessary.



TEAC Market Efficiency Special Session

- Live WebEx TEAC session scheduled for Oct 24th, 2:00 4:00 pm EPT
 - Overview of the 2018/2019 Market Efficiency Base Case
 - Review of PROMOD congestion outputs
 - Overview of RTEP Window process
- Final Market Efficiency 2018/19 base case, problem statement, congestion drivers, and required documentation to be posted before November 1st 2018
- PROMOD modeling sensitivity cases will be posted
- Long-Term Market Efficiency Window opens November 1st 2018



Step	Timeline
Live WebEx TEAC session	Oct 24 th
Post Final Base Case, Target Congestion Drivers and Sensitivities	End of October 2018
Long Term Proposal Window	November 2018 - February 2019
2018 Reevaluation Analysis	October – November 2018
2018 Acceleration Analysis	November – December 2018
Analysis of Proposed Solutions	March - November 2019
Final TEAC Review and Board Approval	November - December 2019

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Market Efficiency RTEP Window Registration

- Register for the 2018/19 RTEP Market Efficiency Window at
 - <u>http://www.pjm.com/planning/competitive-planning-process.aspx</u>
- In the CEII Request form write "Access to the 2018-19 Long Term RTEP Window" as the description of the information requested.
- Everyone must register to access the data regardless of prior participation in the PJM Competitive Process.

RTEP Window Registration Screenshot

Services & Requests	Home Planning Competitive Planning Process		-				
RTEP Upgrades & Status							
	Competitive Planning Process						
Process	The PJM competitive planning process implements FERC Order 1000. The						
Pre-Qualification for Designated Entity Status	opportunity to participate in the regional planning and expansion of the PJM bulk electric system. By publishing a set of criteria violations and soliciting solutions from competing transmission developers, PJM and the FERC hope to encourage innovative, cost						
RTEP Development	effective and timely solutions to the challenges of building and maintain						
Resource Adequacy	PJM will announce in the Transmission Expansion Advisory Committee (Transmission Expansion Advisory Committee (it into three categories and follo					
Planning Criteria	month planning cycles as described in Manual 14F: Clean (WEB) Clean (PDF).					
Design, Engineering & : Construction	Planning Cycles	Standard Window Length	Required In-Service Date (Years)				
Interregional Planning	Long Term - considers reliability criteria violations, economic constrain conditions and public policy requirements	ts, system 120 days	> 5				
	Short Term - considers reliability criteria violations	60 days	3-5				
	Immediate-Need Reliability - considers reliability criteria violations	Shortened	< 3				
	While PJM endeavors to adhere to the standard length of the proposal win standard window length would be unnecessarily burdensome on the transn	ission developers, PJM may elect	When adhering to the				
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Market Efficiency RTEP Window Data Posting

- Market Efficiency Web Page located at
 - <u>http://www.pjm.com/planning/rtep-development/market-efficiency.aspx</u>
- Data will be posted before November 1st 2018
 - Market Efficiency Base Case files for all study years (XML format)
 - Access requires CEII confirmation (PJM and MISO)
 - Access requires PROMOD vendor (ABB) confirmation
 - PROMOD input files: .lib, .eve
 - Benchmark test case and results
- Auxiliary Files
 - Input Assumptions Summary
 - Updated Modeling Document which will provide details of setup and modeling methods
 - Benefit/Cost Evaluation Tool
 - ARR Data



2018 Reevaluation Approved Market Efficiency Projects



Reevaluation Process Status

- Completed Reevaluations
 - Project 2014/15_1-9A, AP-South, (b2743.1-8, b2752.1-7)
 - 9A Reevaluation presentation posted at September 2018 TEAC meeting
 - Project 2016/17_1-5E, BGE, (b2992.1-4)
 - See next slide
- Currently prioritizing the reevaluation work with the opening of the RTEP Window
- Projects already in-service or with a near in-service date will not be reevaluated
- As projects complete reevaluation, results will be presented at the next TEAC meetings



BGE 1-5E

Mendes N Project ID: 201617_1-5E PH Glatfelte Proposed by: BGE Crossroads **Proposed Solution:** Reconductor the Conastone to Graceton 230kV lines. Tolna Peach Bottom Tap Nottingh Upgrade substation equipment at Conastone. Add bundled Rock Springs conductors to the Graceton-Bagley-Raphael Road 230kV Coope Conastone Graceton double circuit lines. Reconductor the Raphael Road to Rock Ridge Northeast 230 kV double circuit lines. Upgrade substation Conowingo **Colonial Pipeli** equipment at Windy Edge substation. Bagley kV Level: 115/230 kV Shawan Rd Glenarm Bagle In-Service Cost (\$M): \$25.40 Perryville PJM Cost Estimate (\$M): \$39.65 Summerfield Tap2 In-Service Date: 2021 East Towson B G Otter Pt Raphael Rd Legend Target Zone: BGE Texas Substations Transmission Lines Raphael R 69 kV Mays Chap **ME Constraints:** erryman Combustion Turbines BGE 120 kV Gunpowder CONASTONE - GRACETON - BAGLEY 230 kV 138 kV Windy Edge Joppatowne 161 kV DPL Northeast 230 kV V 230 kV GMAllison Northeast Notes: Golden Washington • 500 kV B/C = 9.18 > 1.25 threshold (PASS) 765 kV Erdman #2 Center **Reevaluation completed Oct 2018** Green'e St OC. P. Crane



Revision History

- Revision History
 - V1 10/9/2018 Original Version Posted to PJM.com