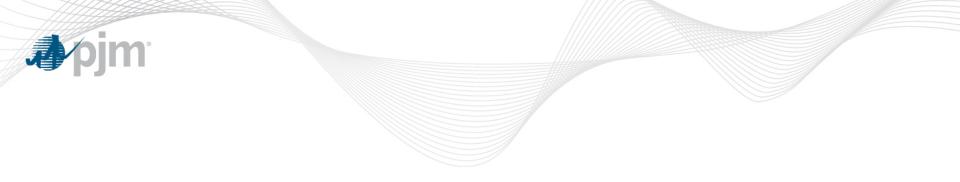


Transmission Expansion Advisory Committee Market Efficiency Update

February 12, 2015

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Market Efficiency Long Term Proposal Window Update



2014 RTEP Long Term Proposal Window: Market Efficiency

- Long Term Proposal Window closes on Friday, February 27,2015.
 - Proposals and pre-qualification documents
- Reactive Interfaces
 - > Market Reactive Interfaces are used in PJM markets as thermal proxies for voltage control.
 - Market Efficiency posted modeling document was updated with more details of the calculation used to determine the Market Efficiency Reactive Interface ratings.
 - Reactive Interface ratings calculated from PV analysis, Historical data, and PJM market/operations input.
 - > Actual operational ratings change every 5 minutes
 - > Market Efficiency only uses summer/winter ratings.
 - Most important for participants to measure the Incremental impact of proposed projects on Reactive Interfaces.
 - Power flow used for PV analysis added to secure site.

http://www.pjm.com/planning/rtep-development/powerflow-cases/base-line-cases.aspx

Market Efficiency Timeline

| | Year 0 | | | | | | | | | | | | | Year 1 | | | | | | | | | |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------|-----|-----|----|-------|---------|----------|----------|---------|------------|-------------|-------------|----------|------------|-----------|----------|---------|---------|----------|----------|--------|-----------|---------|
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| | | | | De | velop | Assumpt | ions (11 | , 15) | | | | | | | | | | | | | | | |
| | | | | 1 | | | Mark | et Effic | iency / | Analysis | (Y1, Y5 | a | | | | | | | | | | | |
| | | | | | | | | | | Modific | | 1 | | | | | | | | | 12 | -month | cycle |
| | | | | | | | | | | _ | | | | | | | | | | | | | |
| | | | | | | - | | | | Identi | fy and ev | aluate | Solutio | n Optio | ons (Ad | cleratio | ons and | d Modif | ications | ;) | | | |
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| | | | · | De | velop | Assumpt | ions (Y1 | , Y5, Y | 8, Y11 | , Y15) | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | _ | _ | | | _ | _ | _ | _ |
| | | - | | | | | Mark | et Effic | iency (| Criteria A | Analysis | (Y1, Y | 5, Y8, | Y11, Y | 15) | - | - | | | - | - | - | - |
| | - | | | - | | | | | | Marke | et Efficier | I ncv An | alvsis | Y1. Y5 | 5 Y8) | (11. Y1 | 5) | | | | 2 | 4-mont | h cycle |
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| | Identify proposed solutions | | | | | | | | | | | | | | | | | | | | | | |
| | _ | _ | _ | - | - | | | | - | | - | | | | | 11-1- | | | 1 | - | 0/0 1/ | 1 1/7 1 | 140 3/4 |
| | Update significant assumptions (Y0, Y4, Y7, Y10, Y1 | | | | | | | | | | | | | | | 10, 11 | | | | | | | |
| | Analysis of market solutions and support of benefits of reliability solutions (Y0, Y4, Y7, Y10, Y14) | | | | | | | | | | | | | | | | | | | | | | |
| | Independent Consultant reviews of buildability | | | | | | | | | | | | | | | | | | | | | | |
| | - | - | | - | - | | - | - | | ndepend | dent Con | sultant | t review | s of bu | ildabilit | У | | | | _ | - | - | _ |
| Adjustments to solution options by PJM on analysis | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | Deve | lop As: | sumptio | ons (Y1 | , Y5) | | | |
| | | | | | | | | | | | Market | Efficie | 000 | alvaia | | - | | | | | 1 | 2 mont | h cycle |
| | | | | | | | | | | | | | ons and | | | | | | | | | 2-1110110 | I Cycle |
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| | | | | | | | | Identi | ify and | evaluate | e Solutio | n Optio | ons (Ac | cleratio | ons and | d Modifi | cations | 5) | | | | | |
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2014-2015 24-Month Market Efficiency Cycle Timeline

- Long Term proposal window: November 2014 February 2015
- Analysis of proposed solutions: March 2015 November 2015
 - Determination of major assumptions (i.e. Load forecast, Fuel prices, Generators) that are significantly different in 2015 and can be used in sensitivity analysis for proposed projects: March 2015
 - Independent consultant review of cost and ability to build
 - Review of analysis with TEAC: June 2015-November 2015
- Determination of Final projects: December 2015
 - Final review with TEAC and Board approval
 - Projects may be approved earlier if analysis and review complete

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2015 12-Month Market Efficiency Cycle

- 12 month cycle used to complete near-term (year 1 through year 5) analysis to identify approved RTEP projects that can be accelerated or modified based on Market Efficiency criteria.
- PJM only effort and requires no stakeholder effort.
 - Comments are always welcomed

<u>Timeline</u>

- Develop Market Efficiency 2016 and 2020 cases: January 2015-April 2015
 - > Update of 2015 and 2019 Long Term Proposal Market Efficiency cases
- Analysis of approve RTEP projects for accelerations and modifications: May 2015-August 2015
- Determination of final candidates: August 2015-November 2015
- Recommendation to PJM Board: December 2015
 - > Projects may be approved earlier if analysis and review complete



Questions?

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