Market Efficiency Process Enhancement Task Force: Phase 3 update

Brian Chmielewski
Manager, Market Simulation
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MEPETF
Market Efficiency Process Enhancement Background

MEPETF Phase 3 authorized by Planning Committee in June 2019

• Address concerns with benefit/cost calculations using summation of energy and capacity benefits
• Discuss Regional TMEP concept and explore any necessary alternatives
• Evaluate the benefit-to-cost calculation for the two items:
  – Evaluate whether the current b/c analysis for a project should include zones with both positive and negative benefits
  – Explore whether the current b/c analysis includes a method to evaluate risk in both cost and benefit estimates
• Poll responses are non-binding and intended to solicit feedback on potential support for key design components

• Total Unique Responders – 14
• Total Companies – 110
1. With regards to a new RTMEP process, do you prefer to retain the status quo which currently has no internal/regional targeted market efficiency process?

- Yes: 31
- No: 79

- Yes: 28%
- No: 72%
2. Please indicate whether or not you can support each option with regard to using a new RTMEP process for market efficiency projects.

A1
- Can Support: 36%
- Cannot Support: 64%

A2
- Can Support: 36%
- Cannot Support: 64%

A3
- Can Support: 28%
- Cannot Support: 72%

A4
- Can Support: 33%
- Cannot Support: 67%
3. With regards to the benefit calculation, do you prefer to retain the status quo?

- Yes: 53
- No: 57

Benefits Calculation Status Quo

52% Yes
48% No
4. Which of the benefit calculation metric options do you most strongly support?

- Net load payments only for benefitting zones (Status Quo) - 84%
- Net load payments for all zones, including incremental ARRs created by project (B2) - 25%
- Generator revenues (B3) - 1%
5. Please indicate whether or not you can support each option with regard to the benefit calculation metric used for market efficiency projects.

- **B1**: Can Support - 60, Cannot Support - 50
  - Can Support: 45%, Cannot Support: 55%

- **B2**: Can Support - 17, Cannot Support - 76
  - Can Support: 18%, Cannot Support: 82%

- **B3**: Can Support - 10, Cannot Support - 83
  - Can Support: 11%, Cannot Support: 89%

- **B4**: Can Support - 22, Cannot Support - 88
  - Can Support: 20%, Cannot Support: 80%
5. Please indicate whether or not you can support each option with regard to the benefit calculation metric used for market efficiency projects.

Comments

- Being in-service for RPM Year is too restrictive

- Primary support is for B4; could possibly support B2 and B3.
6. With regards to the window for capacity drivers, do you prefer to retain the status quo?

Yes: 17
No: 93

Window for Capacity Drivers Status Quo

15%
85%
7. Please indicate whether or not you can support each option with regard to the window for capacity drivers used for market efficiency projects.

C1:
- Can Support: 110
- Cannot Support: 0

C2:
- Can Support: 34
- Cannot Support: 76
7. Please indicate whether or not you can support each option with regard to the window for capacity drivers used for market efficiency projects.

Comments

• Primary support for C1; could also support C2

• Important to separate the evaluation of projects by Energy Market drivers from those based on Capacity Market drivers.
8. Please indicate your willingness to compromise on the following design components:

**RTMEP**
- Not willing to compromise: 23%
- May be able to compromise: 77%

**Benefits Metric**
- Not willing to compromise: 1%
- May be able to compromise: 32%
- Most willing to compromise: 67%

**Window**
- Not willing to compromise: 2%
- May be able to compromise: 93%
- Most willing to compromise: 15%
8. Please indicate your willingness to compromise on the following design components:

Comments

• There may be some flexibility around the solicitation process for RTMEPs.

• Alternative benefit proposals currently before the MEPETF have not been shown to be superior to the current MEP process.

• Capacity window must be separated from the energy window; there is no alternative or compromise in this situation.
PJM is proposing three changes to the market efficiency process

- create standalone process to address RPM drivers independent of energy driver analysis
- modify calculation inputs for RPM benefits
- create a backwards looking “quick hit” market efficiency process to address persistent congestion not identified in the forward looking planning model

PJM is not proposing changes to the existing energy benefit calculation or rules governing project cost commitments

- summary available [here](https://example.com)
<table>
<thead>
<tr>
<th>Design Component</th>
<th>Status Quo</th>
<th>Proposed Change</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity Benefit Calculation Simulation Years</td>
<td>RTEP, RTEP+3 and RTEP+6</td>
<td>RPM and RTEP years</td>
<td>Addresses topology and CETL uncertainties beyond RTEP year</td>
</tr>
<tr>
<td>In-Service for RPM Market</td>
<td>No restrictions</td>
<td>To be in service prior to June 1 of the Delivery Year for which the Base Residual Auction is being conducted. In the event a transmission expansion cannot be placed in service by this date, PJM will consider capacity market solutions that can be in service before RTEP year.</td>
<td>Ensure projects address a capacity driver by the RPM year</td>
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### Design Component

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<tr>
<td><strong>Cycle Type</strong></td>
<td>24-Month</td>
<td>24-Month for Energy drivers</td>
<td>• Address capacity driver in time for BRA delivery year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12-Month for Capacity drivers</td>
<td>• Existing procedures outline when transmission solutions are appropriate in RPM</td>
</tr>
<tr>
<td><strong>Proposal Windows Type and Duration</strong></td>
<td>120-day long-term window for Energy, Capacity and multi-criteria drivers; biennial</td>
<td>120-day biennial window for long-term Energy drivers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>60-day annual short-term window for Capacity exclusive and multi-criteria drivers, when needed</td>
<td></td>
</tr>
<tr>
<td><strong>Window Timing</strong></td>
<td>January-April of odd years (addressed in Phase 2)</td>
<td>Energy drivers: January-April of odd years Capacity drivers: Following the annual Base Residual Auction (BRA)</td>
<td></td>
</tr>
<tr>
<td><strong>Capacity Driver Criteria</strong></td>
<td>Tied to Eligible Energy Congestion Drivers</td>
<td>Follow existing OATT Att. DD, Section 15 language</td>
<td></td>
</tr>
<tr>
<td><strong>Timing and Coordination with Energy Drivers and Capacity Drivers Windows</strong></td>
<td>N/A</td>
<td>If the same congestion drivers are identified for both Energy and RPM, then the evaluation of the combined benefits will be performed during the 24-month process used for the evaluation of Energy congestion drivers. The latest available ME base case will be used to evaluate the proposals for such multi-criteria drivers.</td>
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Capacity Window Workflow Chart

Annual BRA Auction

Capacity Driver is also an Energy Driver?

Is 1st year of 24-month Market Efficiency Cycle?

Energy Driver already posted in current RTEP Window?

Open Capacity Window (Evaluate proposals using only Capacity Benefits)

Approved solution will be included in Base Case for next Long-Term Window

Open Capacity Window (Evaluate proposals using both Capacity and Energy Benefits)

Evaluate proposals from current Long-Term Window using both Energy and Capacity Benefits

Post Capacity/Energy Driver in next Long-Term Window

No Capacity Window

No Capacity Window

Any binding RPM Constraint?

Binding RPM Constraint Passes Attachment DD Criteria?

No Capacity Window

Yes

Yes

No

Yes

No

Yes

No
**Illustrative Example – Capacity Window**

**Drivers**
- Identify Capacity Drivers, after the BRA Annual Auction, as necessary
  - Identified capacity constraint should pass Attachment DD Criteria*

**Window**
- Open Short-Term Capacity Window
  - 60 days
  - Use latest BRA model (post powerflow and other info that is not market sensitive)

**Benefits**
- Proposal Evaluations
  - RPM Simulations (RPM and RTEP years) using the most recent BRA engine
  - Capacity Benefits > 1.25 threshold

**Review**
- Cost/Constructability Independent Review
  - In-Service Date before 3rd summer

**Selection**
- Proposals Comparative Analysis

**Approval**
- TEAC 1st and 2nd read.
- Recommend to PJM Board for Approval
Create new RTMEP process to address historical congestion not captured in planning models

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<tr>
<td>Qualified Projects</td>
<td>N/A</td>
<td>Consistent with interregional TMEP process</td>
<td>• Establish process to fill gap that exists when historical congestion is persistent and not captured in planning models</td>
</tr>
<tr>
<td>Qualified Congestion Drivers</td>
<td>N/A</td>
<td>PJM Identified facilities with significant and persistent historical congestion (based on previous 2 years) that are not due to planned outages, that are not addressed by any planned system changes</td>
<td></td>
</tr>
<tr>
<td>Benefits</td>
<td>N/A</td>
<td>Average of past 2 years of historical congestion (Day Ahead + Balancing), adjusted for outage impacts</td>
<td></td>
</tr>
<tr>
<td>Cost</td>
<td>N/A</td>
<td>Project capital cost (no discount or inflation rate)</td>
<td></td>
</tr>
<tr>
<td>Passing Threshold</td>
<td>N/A</td>
<td>Four years worth of Benefits (no discount/inflation rate) must completely cover project’s capital cost</td>
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Create new RTMEP process to address historical congestion not captured in planning models

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<td>Timing and Coordination between TMEP and ME Processes</td>
<td>N/A</td>
<td>TMEPs will be studied periodically throughout the market efficiency 24-month cycle. Any identified TMEP driver will be reviewed by TEAC and identified solutions will be approved by Board on an as needed basis.</td>
<td>• Establish process to fill gap that exists when historical congestion is persistent and not captured in planning models</td>
</tr>
<tr>
<td>Unit Retirements in Area of Congestion</td>
<td>N/A</td>
<td>Consistent with interregional TMEP process</td>
<td></td>
</tr>
<tr>
<td>Competitive Process Type</td>
<td>N/A</td>
<td>Sponsorship Model</td>
<td></td>
</tr>
<tr>
<td>TMEP Window</td>
<td>N/A</td>
<td>30-day window, as needed</td>
<td></td>
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Regional Targeted Market Efficiency Process

- As a result of Phase 2, PJM Markets has been tracking and classifying causes of day-ahead and balancing congestion revenues since June 1, 2019
  - Two potential candidates if trends continue

Causes of Congestion
June 2019 – October 2019

Monitored Element | Contingency | Identified Solution in RTEP?
--- | --- | ---
TANNERSC345 KV TAN-MIA1 | L345.EastBend-Terminal | Yes
CONASTON500 KV CNS-PEA | L500.Hunterstown-Conastone.5013 | Yes
CONASTON500 KV CNS-PEA | BASE | Yes
BELLEFON T3 XFORMER H 138 KV | 138/69/34.Bellevonte.T2 | Yes
HAVILAND J CB 138 KV | L345.EastLima-MaddoxCreek | No
FACEROCK FAROZBR SER DEV A 69 KV | L500.Conastone-PeachBottom.5012 | Yes
SBENDAEP138 KV SBE-TWI1 | 345/138.Olive.T2(SctnLz) | Yes
<table>
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<tr>
<th>Design Component</th>
<th>MEP</th>
<th>Regional TMEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit Metric</td>
<td>Net Load Payment Savings</td>
<td>Congestion Cost Savings</td>
</tr>
<tr>
<td>Project cost for B:C Ratio</td>
<td>15-years of Annual Revenue Requirement</td>
<td>Total Capital Cost</td>
</tr>
<tr>
<td>Project Cost Cap</td>
<td>N/A</td>
<td>$20M</td>
</tr>
<tr>
<td>In-service Date</td>
<td>RTEP year or later</td>
<td>3rd Summer Peak</td>
</tr>
<tr>
<td>Passing Threshold</td>
<td>1.25:1 NPV over 15 years</td>
<td>1:1 over 4 years</td>
</tr>
<tr>
<td>Qualified Congestion Driver</td>
<td>Simulated congestion of $1M or more in each RTEP and RTEP+3 simulation years</td>
<td>Historical avg. congestion of $1M or more in 2 previous years; Simulated congestion less than MEP threshold</td>
</tr>
<tr>
<td>Proposal Window</td>
<td>60 days</td>
<td>30 days</td>
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Next Steps

- OA / Manual redline review December 3rd at MEPETF (pending poll results)
  - Q/A session

- Planning Committee first read December 2019, vote January 2020
  - Full task force report
  - Recommend group sunset at January PC vote

- MRC first read (if necessary) February 2020, vote (if necessary) March 2020

- File OA changes with FERC April 2020 effective for 20/21 window