Market Efficiency Process Enhancement Task Force Phase 3

Jack Thomas

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Markets and Reliability Committee

July 23, 2020

- Market Efficiency Process Enhancement Task Force
  - Approved to start work in January 2018
  - Address challenges and opportunities for improvements to Market Efficiency process since implementing FERC Order 1000 processes
- Phase 1 completed - August 2018
- Phase 2 completed - April 2019
- Phase 3
  - New Regional Targeted Market Efficiency Project Process
  - Evaluate Benefit-to-Cost Calculations
  - Separate Energy and Capacity Benefits in Calculations

Issues addressed via 3 packages

- ➢ A – Regional Targeted Market Efficiency Project (RTMEP)
    - ❖ New Process to address historical congestion
    - ❖ Continuation from Phases 1 and 2
- ➢ B -- Benefit Calculation
    - ❖ Focused on concerns with inputs to the calculation of energy and capacity benefits
- ➢ C -- Window for Capacity Drivers
    - ❖ Separate energy and capacity benefit windows when drivers are not the same
    - ❖ Potential issues noted by stakeholders late in Phase 2

Packages will be voted separately.

AEP (A4)

56%

58% support over Status Quo

- Project capital cost < $20 million
- In service by June 1 or third summer season
- Based on historical congestion
- 4 years of benefits fully cover capital cost
- Periodic studies between ME cycles (24-month)
- Project awarded to incumbent TO
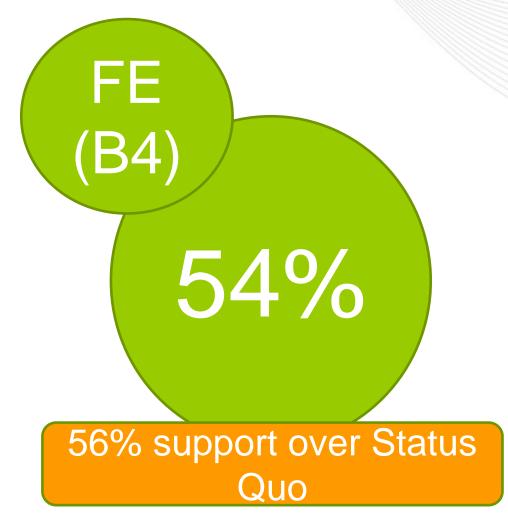
PC **Alternative** RTMEP Package

PJM (A1)

55%

- Same as A4 except for use of a 30-day competitive window to award projects

FE (B4)

54%

56% support over Status Quo

- Use weighted averages for energy benefit sensitivities and base case
- Capacity driver project in service before June 1 of Delivery Year
- Use average of Monte Carlo hourly draws
- All other design components Status Quo

- Stakeholder may propose friendly amendment

PC **Alternative** Benefits Package

PJM
(B1)

52%

- Simulation years for calculating benefits
  - RPM and RTEP
- Capacity driver project in service before June 1 of Delivery Year
- All other design components Status Quo

PJM
(C1)

52%

63% support over Status Quo

- Capacity driver window every 12 months following Base Residual Auction
  - Duration = 60 days
- Energy driver window every 24 months
  - January - April of odd years
  - Duration = 120 days
- Congestion drivers identified in both will be evaluated in 24-month window
- Capacity driver criteria follows OATT, Att. DD, Section 15 language

- May 12, 2020 PC
  - Packages Endorsed
- July 23, 2020 MRC
  - First Read of Endorsed Packages
- August 20, 2020 MRC
  - Votes for Packages and Documentation Updates
- September 17, 2020 MC
  - Vote on Packages and Documentation Updates
- FERC Filing targeted for October 2020

Contact

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Market Efficiency Process Enhancement Task Force

Member Hotline

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Appendix

RTMEP

AEP (A4)   56%
  Y – 89
  N - 71
  Abstain - 14
PJM (A1)   55%
  Y – 87
  N - 72
  Abstain - 15
IMM (A2)   12%
  Y – 19
  N - 143
  Abstain - 12

Benefit Calculation

FE (B4)   54%
  Y – 84
  N - 73
  Abstain - 17
PJM (B1)   52%
  Y – 82
  N - 75
  Abstain - 17
IMM (B2)   16%
  Y – 26
  N - 135
  Abstain - 13

Window for Capacity Drivers

PJM (C1)   52%
  Y – 82
  N - 75
  Abstain - 17
IMM (C2)   25%
  Y – 40
  N - 119
  Abstain - 15

- AEP (A4) preferred over the status quo
  - Y – 97
  - N – 71
  - Abstain – 12
- FE (B4) preferred over the status quo
  - Y – 93
  - N – 73
  - Abstain – 14
- PJM (C1) preferred over the status quo
  - Y – 102
  - N – 61
  - Abstain – 5

Market Efficiency Process Enhancement Task Force: Phase 3 PJM Proposal

Nick Dumitriu, Market Simulation

February 4, 2020

Planning Committee

- **Proposing three changes to the market efficiency process:**

  1. Create a backwards looking "quick hit" market efficiency process to address persistent congestion not identified in the forward looking planning model (PJM Proposal Package A1)

  2. Modify calculation inputs for RPM benefits (PJM Proposal Package B1)

  3. Create standalone process to address RPM drivers independent of energy driver analysis (PJM Proposal Package C1)

Create new RTMEP process to address historical congestion not captured in planning models

Design Component	Status Quo	Proposed Change	Justification
Qualified Projects	No process exists	Projects which resolve congestion on one or more Qualified Congestion Driver(s), with a capital cost under $20 million, to be in service by June 1 of the third summer season	Establish process to fill gap that exists when historical congestion is persistent and not captured in planning models
Qualified Congestion Drivers	No process exists	PJM identified facilities with significant and persistent historical congestion (based on previous 2 years) that are not due to outages, that are not addressed by any planned system changes	
Benefits	No process exists	Average of past 2 years of historical congestion (Day Ahead + Balancing), adjusted for outage impacts	
Cost	No process exists	Project capital cost (no discount or inflation rate)	
Passing Threshold	No process exists	Four years worth of Benefits (no discount/inflation rate) must completely cover project's capital cost	

Create new RTMEP process to address historical congestion not captured in planning models

Design Component	Status Quo	Proposed Change	Justification
Timing and Coordination between TMEP and ME Processes	No process exists	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.	Establish process to fill gap that exists when historical congestion is persistent and not captured in planning models
Unit Retirements in Area of Congestion	No process exists	Announced generator deactivations at time of project recommendation are considered.	
Competitive Process Type	No process exists	Sponsorship Model (Competitive Window)	
TMEP Window	No process exists	30-day window, as needed	

AEP Presentation to PJM PC Regional TMEP (Package A4)

PJM PC Meeting February 4, 2020

Description of Package (A4)

1. **Regional TMEP Package (A4) is identical to Package (A1) in all respects except for the process for identifying the solution and selecting the developer**

    a) Package (A1) calls for identification and selection through proposal window

    b) Package (A4) calls for identification and selection without proposal window

Rationale for Package (A4)

1. **Regional TMEP construct is looking to address historical congestion through quick-hit non-greenfield upgrades that can be placed in-service in short order**

2. **Regional TMEP projects must be in-service by third summer after approval**
   a) Limited amount of time to accommodate proposal window planning process
   b) Proposal window unlikely to change the identification and selection decision

3. **Interregional PJM-MISO TMEP planning process has successfully produced half-dozen projects costing $0.12M to $6.70M and assigned to incumbent TOs**
   a) b2971, b2972, b2973, b2974, b2975, b3053
   b) None involve greenfield projects (are non-competitive by FERC's definition)
      - three involve reconductoring of lines,
      - one involves reconfiguration of ring bus, and
      - two involve replacement/upgrading of terminal equipment.
   c) Expectation that regional planning process will produce similar projects

4. **PJM may not be able to share historical model needed for proposal window since historical model may contain market sensitive information**
   a) Holding proposal window without modeling information is unproductive

AEP Presentation to PJM PC -- Regional TMEP (Package A4)

Questions ???

Takis Laios (tlaios@aep.com)

Benefit Calculation Metric Used for Market Efficiency Projects

- **Proposing three changes to the market efficiency process:**

  1. Create a backwards looking "quick hit" market efficiency process to address persistent congestion not identified in the forward looking planning model (PJM Proposal Packages A1)

  2. Modify calculation inputs for RPM benefits (PJM Proposal Package B1)

  3. Create standalone process to address RPM drivers independent of energy driver analysis (PJM Proposal Package C1)

Design Component	Status Quo	Proposed Change	Justification
Capacity Benefit Calculation Simulation Years	RTEP, RTEP+3 and RTEP+6	RPM and RTEP years	Addresses topology and CETL uncertainties beyond RTEP year
In-Service for RPM Market	No restrictions	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.	Ensure projects address a capacity driver by the RPM year

PJM is <u>not</u> proposing changes to the existing energy benefit calculation or rules governing project cost commitments
Summary available [here](#)

MEPETF Phase 3, Package B4 (First Energy) Proposal

■ **Includes elements of IMM's Package B2 & B3 that would calculate Energy Benefit using:**

- Weighted average of Sensitivities

- Average of multiple Monte Carlo results

These process enhancements are important to

- Substantiating the beneficial value of proposals

- Moderating extrapolation of benefits far into the future

■ **Excludes elements of IMM's Package B2 & B3 that would change the formula for applying Load Payments and Production Costs to Energy Benefit calculation.**

■ **Includes timing restrictions for Capacity Market solutions as in Packages B1, B2 and B3.**

Window for Capacity Drivers Used for Market Efficiency Projects

- **Proposing three changes to the market efficiency process:**

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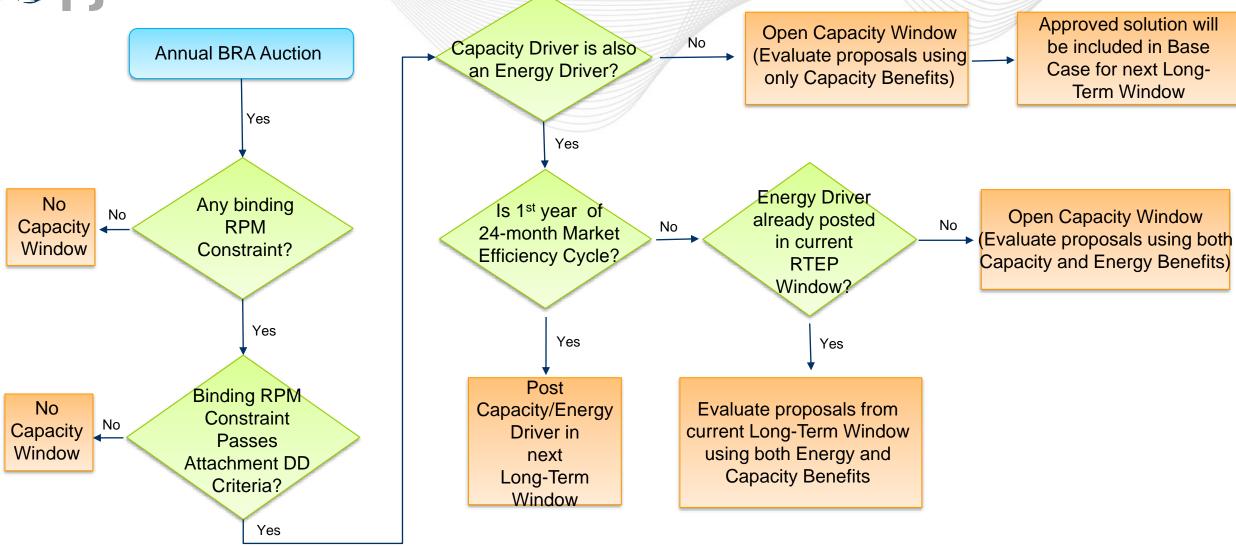 3. Create standalone process to address RPM drivers independent of energy driver analysis (PJM Proposal Package C1)

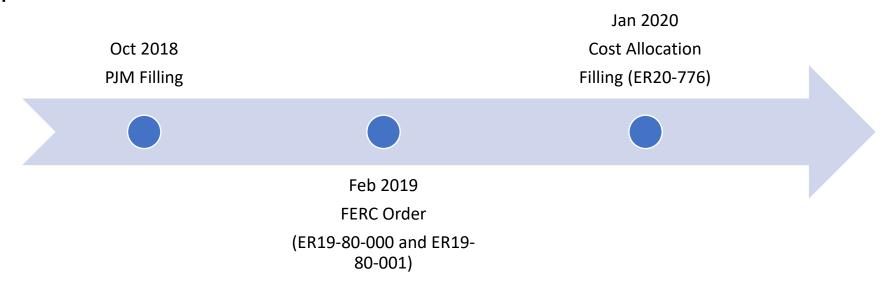| Design Component	Status Quo	Proposed Change	Justification
Cycle Type	24-Month	24-Month for Energy drivers 12-Month for Capacity drivers	Address capacity driver in time for BRA delivery year
Proposal Windows Type and Duration	120-day long-term window for Energy, Capacity and multi-criteria drivers; biennial	120-day biennial window for long-term Energy drivers 60-day annual short-term window for Capacity exclusive and multi-criteria drivers, when needed	
Window Timing	January-April of odd years	Energy: January-April of odd years Capacity: Following the annual Base Residual Auction (BRA)	
Capacity Driver Criteria	Tied to Eligible Energy Congestion Drivers	Follow existing OATT Att. DD, Section 15 language	Existing procedures outline when transmission solutions are appropriate in RPM
Window Timing and Coordination Energy Drivers and Capacity Drivers	N/A	If the same congestion drivers are identified for both Energy and RPM, then the combined benefits will be evaluated during the 24-month process. Latest available ME base case used to evaluate proposals for such multi-criteria drivers.	

Example of Cost Allocation Methodology Update

- On October 10, 2018, pursuant to section 205 of the Federal Power Act (FPA), PJM filed proposed revisions to the benefit/cost analysis it conducts in its evaluation of economic-based enhancements or expansions as part of its regional transmission expansion plan (RTEP) process.

- On Feb. 19, 2019 FERC accepted PJM's proposed revisions to the benefit/cost analysis, effective Dec. 10, 2018, (Docket Nos. ER19-80-000 and ER19-80-001)

- ER20-776 filed January 13, 2020 by TOA-AC "Cost allocation methodology for economic projects"

Cost Allocation Process

- Cost Allocation is the responsibility of transmission owners and covered under the CTOA

- Cost Allocation methodology updates discussed at TOA-AC once there is certainty about the planning change that triggered the cost allocation review (i.e. FERC issues order approving the planning change)

- Example: Cost allocation timeline for recent change to the Market Efficiency B/C ratio calculation

Oct 2018

PJM Filling

Jan 2020

Cost Allocation

Filling (ER20-776)

Feb 2019

FERC Order

(ER19-80-000 and ER19-80-001)

FERC Ruling for PJM Filing on Benefit/Cost Analysis (Docket Nos. ER19-80-000 and ER19-80-001)

Item	PJM Modification	FERC Ruling	FERC Reasoning
Regional and Lower Voltage Benefits Calculation Period	15 years from in-service year, capped at RTEP+14	FERC accepted PJM's proposed Operating Agreement (OA) changes.	PJM's proposal to use the same 15-year planning period for evaluating all projects is just and reasonable and not unduly discriminatory modification to PJM's existing benefit/cost ratio calculation, given that the data for periods outside of the planning period are less accurate.
Project Cost Calculation Period	15 years of annual revenue requirements from in-service year, capped at RTEP+14	FERC accepted PJM's proposed Operating Agreement (OA) changes	