



# Market Efficiency Process Enhancement Task Force Final Proposal Report

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## Contents

<b>Issue Summary</b> .....	<b>1</b>
<b>Phase 1</b> .....	<b>1</b>
<b>Non-Binding Poll Results</b> .....	<b>1</b>
<b>June 2018</b> .....	<b>1</b>
<b>July 2018</b> .....	<b>2</b>
<b>Proposals Not Meeting Threshold</b> .....	<b>2</b>
<b>Phase 2</b> .....	<b>3</b>
<b>Non-Binding Poll Results</b> .....	<b>3</b>
<i>February 2019</i> .....	<b>4</b>
<b>Phase 3</b> .....	<b>4</b>
<b>Non-Binding Poll Results</b> .....	<b>4</b>
October 2019.....	<b>5</b>
<b>Appendix I: MEPETF Matrix</b> .....	<b>6</b>
<b>Appendix II: Changes Implemented</b> .....	<b>6</b>
<b>Appendix III: Stakeholder Participation</b> .....	<b>7</b>

## Issue Summary

PJM has conducted multiple ME cycles (2014/15 and 2016/17) since implementing Order 1000 processes. The mission of the Market Efficiency Process Enhancement Task Force is to discuss challenges and opportunities for improvements that have become evident as a result of these ME cycles.

[Problem Statement & Issue Charge Charter](#)

Problem Statement/Issue Charge approved at Planning Committee on January 11, 2018

Number of Phase 1 meetings covering this topic: 10

Number of Phase 2 meetings covering this topic: 10

Number of Phase 3 meetings covering this topic: 9

### 1. Phase 1

#### a. Task Force Non-binding Results

In total, 6 packages were polled from June 25, 2018 through July 2, 2018. Only proposal A' was close to a simple majority vote, with 50.0% in favor. However, 16 out of the 18 respondents polled to make a change – supporting at least one of the below solution packages. Although a formal “retain status quo” poll question was not asked, the group was notified via email to note “status quo” in the comments section of the poll if anyone wished to retain the status quo. Proposals were offered by PJM, American Municipal Power, American Electric Power, LS Power, First Energy, and Exelon.

#### ***June Polling Results:***

<b>Total Unique Responders</b>	<b>18</b>
<b>Total Companies</b>	132
<b>Voting Members</b>	44
<b>Affiliates</b>	88

Question	Yes	No	Maybe	#	%
<b>1. Do you support Package A'?</b>	66	41	25	132	50.0%
<b>2. Do you support Package B?</b>	30	86	16	132	22.7%
<b>3. Do you support Package C?</b>	40	92	0	132	30.3%
<b>4. Do you support Package D?</b>	13	100	19	132	9.8%
<b>5. Do you support Package E?</b>	38	65	29	132	28.8%
<b>6. Do you support Package F?</b>	36	95	1	132	27.3%

During the July 5, 2018 meeting, the task force reviewed the June polling results. As a result of no solution package reaching Tier 1 consensus, the group decided to develop three new solution packages

for Planning Committee consideration, based on a subset of design components that garner the most support. An additional poll was sent out to the group on July 6, 2018 to gauge support for these new packages, G, H, I. This poll will close at noon on July 11, 2018 at which time the below table will be populated.

**July Polling Results:**

<b>Total Unique Responders</b>					
<b>Total Companies</b>					
<b>Voting Members</b>					
<b>Affiliates</b>					
<b>Question</b>	<b>Yes</b>	<b>No</b>	<b>Maybe</b>	<b>#</b>	<b>%</b>
1. Do you support Package G?					%
2. Do you support Package H?					%
3. Do you support Package I?					%
4. Do you wish to make a change or retain status quo?					

**Proposals G, H, I** represent compromise solution packages based on the June polling results. Fundamental disagreements remain in regards to modeling FSA generators in the base case. These three packages offer three separate methodologies for FSA modeling, while all sharing common recommendation for fixing generator and transmission topology at the RTEP year level for all simulation years. Proposal G recommends to exclude FSA and Suspended ISA generators by default and only including them if needed (below reserve requirement) based on commercial probability. Proposal H recommends scaling FSAs based on 40% of MW capability. Project reevaluation criteria and energy benefit trend and simulation year design components have been removed from these packages and pushed to Phase 2 for further consideration.

**Phase 1 Proposals Not Meeting the Threshold**

There exist three areas of the Market Efficiency (ME) process enhancement that has prevented the group from reaching a simple majority recommendation: The method for modeling FSA generators in the ME base case, the project reevaluation criteria, and the energy benefits calculation methodology.

**Proposal A'** by default, excludes FSA generators from the ME base case, however includes a mandatory sensitivity for all FSA generators. Proposal A' also adds criteria to the current project reevaluation process. Namely, projects must be above \$20M in capital cost to be reevaluated annually. Reevaluations for these projects would continue annually up until a CPCN was filed or 20% of the Engineering and Procurement phase was completed, whichever happens first. Proposal A' also modified the benefit simulation years to RTEP -2, RTEP, RTEP +2, and RTEP +4 and capped the benefits calculation at RTEP+15, including a benefits adjustment calculation for projects coming into service after the RTEP year.

**Proposal B** is very similar to Proposal A' except for the reevaluation and benefits calculation design components. This proposal suggests to only reevaluate projects with a capital cost of \$10M or more annually, up until a CPCN was filed or 20% of the Engineering and Procurement phase was completed, whichever happens first. This Proposal also suggests utilizing a third-order polynomial trend and benefit simulation years RTEP -2, RTEP, RTEP +2, and RTEP +4 and RTEP +6.

**Proposal C** mainly differs from Proposals A' and B in the areas of FSA modeling and project reevaluation. This proposal suggests to only reevaluate projects with a capital cost of \$20M or more once after the project has been approved. This proposal also recommends scaling FSA generators MW capability to 40% in the base case, while also including suspended ISAs at full capability.

**Proposal D** is mostly made up of parts from Proposals B and C. Proposal D recommends including FSAs in the base case based on commercial probability while also only reevaluating projects with a capital cost of \$10M or more up until the project has completed 20% of its construction. This proposal also does not offer a modification for adjusting benefits based on in-service date.

**Proposal E** is identical to Proposal A' except for the energy benefits calculation details. Proposal E recommends using 10 years from the in-service date, as opposed to 15 years, for the benefits calculation period. Proposal E also suggests the benefits trend to be interpolated between simulation years. Including a maximum annual benefit applied beyond the last simulation year, with annual escalation based on load projection.

**Proposal F** is identical to Proposal A', except that it suggests to only reevaluate projects with a capital cost of \$50M or more annually, up until a CPCN was filed or 20% of the Engineering and Procurement phase was completed, whichever happens first.

## 2. Phase 2

### a. Task Force Non-binding Results

The MEPETF non-binding poll was open from Wednesday, February 13, 2019, at 9:00 AM EPT until Wednesday, February 20, 2019, at 5:00 PM EPT. The poll was centered on the design components from the two solution packages presented to the MEPETF.

Package A provided proposed changes to the reevaluation of market efficiency projects, shifting the long-term window timing, and shifting the market efficiency cycle timing while keeping the benefit-to-cost ratio passing threshold as the status quo.

Package B was the same as package A except for the handling of the benefit-to-cost ratio passing threshold. This package proposed calculating capacity and energy benefits separately.

Two additional questions were polled. The task force was polled on the creation of a new process to address historical congestion similar to the Interregional Targeted market Efficiency process. Due to the impending FERC filings with potential effects on the capacity market, the task force was asked when they wanted to address how capacity and energy benefits are used in the benefit-to-cost calculations.

## February Polling Results:

Total Unique Responders	26				
Total Companies	164				
Voting Members	50				
Affiliates	113				
Ex Officio	1				
<b>Question</b>	<b>Yes</b>	<b>No</b>	<b>Maybe</b>	<b>#</b>	<b>%</b>
1. Can you support the Reevaluation component of Package A (PJM proposal)?	106	0	58	164	65%
2. Can you support the Long-term Window Timing component of Package A (PJM proposal)?	154	0	10	164	94%
3. Can you support the Market Efficiency Mid-Cycle Assumption and Model Update components of Package A (PJM proposal)?	152	3	9	164	93%
4. Can you support Package B (Exelon proposal)?	55	84	25	164	34%
5. Can you support addressing Historical Congestion through a new annual process that uses the same criteria and approach used in the current Interregional TMEP process?	72	59	33	164	44%
	<b>Now</b>	<b>After</b>			
6. When do you prefer the MEPETF address the handling of capacity benefits in the Benefit-to-Cost calculation: Now or After PJM receives FERC rulings on the Capacity Market?	86	78		164	52%

### 3. Phase 3

#### a. Task Force Non-binding Poll Results

The MEPETF Phase 3 non-binding poll was open from Monday, October, 2019, at 8:00 AM EPT until Friday, October 25, 2019, at 5:00 PM EPT. The poll was used to gauge support for the Phase 3 packages presented to the MEPETF.

Package A (PJM) provided proposed changes to separate the study of energy and capacity benefits for Market Efficiency proposals when the constraint drivers for Energy and Capacity are not the same, to modify the capacity benefit calculation in order to mitigate future topology and Capacity Emergency Transfer Limit (CETL) uncertainties, and to create a new Regional Targeted Market Efficiency Process in order to address persistent historical congestion not forecasted in the economic planning models.

An additional package has been proposed that is similar to package A, however does not offer a competitive window for the Regional Targeted Market Efficiency Process. Additionally, this package does not change the capacity benefit calculation and provides suggestions for changes to the hourly Monte Carlo processes and energy benefit sensitivities analyses.

Monitoring Analytics has submitted separate packages that alter the energy benefit calculation. Two separate methods were discussed: 1. Changes in system wide load cost, net of modeled congestion allocation and 2. Changes in system wide production costs. Monitoring Analytics is supportive of a new Regional Targeted Market Efficiency Process, however proposed to use the same benefit calculation as proposed above.

### October Polling Results:

Total Unique Responders	14
Total Companies	110
Voting Members	24
Affiliates	86

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	Total # 110	% Support 28
2. Please indicate whether or not you can support each option with regard to using a new RTMEP process for market efficiency projects.	Can Support	Cannot Support	Total #	% Support
Package A1	33	59	92	36
Package A2	33	59	92	36
Package A3	26	66	92	28
Package A4	74	36	110	67
3. With regards to the benefit calculation, do you prefer to retain the status quo?	Yes 53	No 57	Total # 110	% Support 48
4. Which of the benefit calculation metric options do you most strongly support?	Support	% Support		
a. Net load payments only for benefitting zones (Status Quo)	84	76		
b. Net load payments for all zones, including incremental ARR's created by project (B2)	25	23		
c. Generator revenues (B3)	1	1		
5. Please indicate whether or not you can support each option with regard to the benefit calculation metric used for market efficiency projects.	Can Support	Cannot Support	Total #	% Support
Package B1	60	50	110	55
Package B2	17	76	93	18
Package B3	10	83	93	11
Package B4	22	88	110	20
6. With regards to the window for capacity drivers, do you prefer to retain the status quo?	Yes 17	No 93	Total # 110	% Support 15



7. Please indicate whether or not you can support each option with regard to the window for capacity drivers used for market efficiency projects	Can Support	Cannot Support	Total #	% Support
Package C1	110	0	110	100
Package C2	34	76	110	31

  

8. Please indicate your willingness to compromise on the following design components:	Most Willing	May Be Able	Not Willing	% Most Willing
RTMEP	0	85	25	0
Benefits Metric	1	74	35	1
Window	2	93	15	2

## Appendix I: Supplemental Documents

[MEPETF Current Problem Statement Matrix](#)

## Appendix II: Changes Implemented

### Phase 1

- The MEPETF proposal “G” and the associated Manual 14B and Operating Agreement (OA) revisions were first endorsed at the August 9<sup>th</sup> 2018 meeting by PJM Planning Committee. At the Aug 23 meeting, PJM Markets & Reliability Committee endorsed the revisions in a sector-weighted vote with 3.87 in favor. PJM Members Committee endorsed the same at the Sept 27<sup>th</sup> 2018 meeting (see [Package Matrix for PJM Proposal G details](#)).
- On December 10 and 14, 2018, pursuant to section 205 of the Federal Power Act (FPA), PJM Interconnection, L.L.C. (PJM) filed revisions to its economic transmission planning process (market efficiency process) as set forth in Schedule 6, section 1.5.7, of its Amended and Restated Operating Agreement (Operating Agreement). The revisions addressed the generation assumptions that go into PJM’s market efficiency analysis, and 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 13th 2019 FERC accepted PJM’s proposed Operating Agreement (OA) revisions effective immediately ([Docket No.ER19-562-000](#)).

**Phase 2**

- The MEPETF proposal “A” and the associated Manual 14B and 14F and Operating Agreement revisions were endorsed at the April 2018 PC/MRC/MC meetings meeting (see [PJM Proposal A details](#)).
- The revisions included clarifications about the Market Efficiency Reevaluation process (OA and Manual 14B), and the timing of the Long-Term Window (Manual 14F).
- On June 28, 2019, PJM filed revisions to the Operating Agreement (OA), Schedule 6, section 1.5.7(f) Pursuant to section 205 of the Federal Power Act (FPA), to add clarity by specifying a time after which PJM is no longer required to conduct an annual re-evaluation of previously approved market efficiency projects.
- On August 22, 2019 FERC accepted PJM’s proposed OA revisions, effective August 28, 2019 ([Docket No. ER19-2301-000](#)).

**Appendix III: Stakeholder Participation**

Last Name	First Name	Company Name	Sector
Abdur-Rahman	Muhsin	ABB	Not Applicable
Abing	Benjamin	ITC Transco	Not Applicable
Achaab	Edward Ed	AEP Energy Partners, Inc.	Other Supplier
Adams	Darrin	East Kentucky Power Cooperative, Inc.	Transmission Owner
Ali	Shadab	PPL Electric Utilities Corp. dba PPL Utilities	Transmission Owner
Allen	William Bill	Commonwealth Edison Company	Transmission Owner
Arsalan	Qamar	Public Service Electric & Gas Company	Transmission Owner
Bainbridge	Thomas	FirstEnergy Solutions Corp.	Transmission Owner
Barrett	Fran	PJM Interconnection, LLC	Not Applicable
Benckek	Jim	American Transmission Systems, Inc.	Transmission Owner
Benson	Ed	NextEra Energy Transmission, LLC	Other Supplier
Canter	David	Appalachian Power Company	Transmission Owner
Chmielewski	Brian	PJM Interconnection, LLC	Not Applicable
Corash	Richard	PSEG Energy Resources and Trade LLC	Transmission Owner

Dadourian	John	Monitoring Analytics, LLC	Not Applicable
DeAngelis	Cameron	Public Service Electric & Gas Company	Transmission Owner
Dolan	Ryan	American Municipal Power, Inc.	Electric Distributor
Domian	Christin	Duquesne Light Company	Transmission Owner
Dugan	Chuck	East Kentucky Power Cooperative, Inc.	Transmission Owner
Dumitriu	Nicolae	PJM Interconnection, LLC	Not Applicable
Ericson	Christine	Illinois Commerce Commission	Not Applicable
Feller	John	PPL Electric Utilities Corp. dba PPL Utilities	Transmission Owner
Filomena	Guy	Customized Energy Solutions, Ltd.	Not Applicable
Foladare	Kenneth	Tangibl	Not Applicable
Foley	Pauline	PJM Interconnection, LLC	Not Applicable
Ford	Adrien	Old Dominion Electric Cooperative	Electric Distributor
Fuerst	Gary	American Transmission Systems, Inc.	Transmission Owner
Gahimer	Mike	IN Office of Utility Consumer Counselor	End User Customer
Gilani	Rehan	ConEdison Energy, Inc.	Other Supplier
Glatz	Suzanne	PJM Interconnection, LLC	Not Applicable
Gobrecht	Wade	York Planning Commission	Not Applicable
Haas	Howard	Monitoring Analytics, LLC	Not Applicable
Hastings	David	Market Interconnection LLC	Not Applicable
Heinle	Frederick	Office of the People's Counsel	End User Customer
Helms	Joseph	Rainbow Energy Marketing Corporation	Other Supplier
Herling	Steve	PJM Interconnection, LLC	Not Applicable
Hirsh	Chad	Duquesne Light Company	Transmission Owner
Hoatson	Tom	Riverside Generating, LLC	Other Supplier
Hollis	Gabriel	NextEra Energy Transmission, LLC	Other Supplier
Horger	Tim	PJM Interconnection, LLC	Not Applicable
Horning	Lynn	Customized Energy Solutions, Ltd.	Not Applicable
Horstmann	John	Dayton Power & Light Company (The)	Transmission Owner
Huang	Jame	Con Edison Co. of NY	Not Applicable
Hutt	Daniel	Public Service Electric & Gas Company	Transmission Owner
Hyzinski	Tom	GT Power Group	Not Applicable
Jens	Tom	Black Oak Capital, LLC	Other Supplier
Jha	Monica	PCI	Not Applicable
Johnson	Carl	Customized Energy Solutions, Ltd.*	Not Applicable
Laios	Takis	Appalachian Power Company	Transmission Owner

LaVista	Bill William	PSEG Energy Resources and Trade, LLC	Transmission Owner
Lawson	Ryen	Dominion Virginia Power	Not Applicable
Loresch	Jonathan	American Transmission Systems, Inc.	Transmission Owner
Lyakhovich	Leonid	Public Service Electric & Gas Company	Transmission Owner
Mariam	Yohannes	Office of the Peoples Counsel for the District of Columbia	End User Customer
Mauroschadt	Erich	PJM Interconnection, LLC	Not Applicable
McGlynn	Paul	PJM Interconnection, LLC	Not Applicable
Mirhosseini	Niloufar	PJM Interconnection, LLC	Not Applicable
Nekolny	Christopher	Exelon Generation Co., LLC	Generation Owner
Ondayko	Brock	Appalachian Power Company	Transmission Owner
Ovando	Pablo	The Federal Energy Regulatory Commission	Not Applicable
Rumsey	Amanda	PPL Electric Utilities Corp. dba PPL Utilities	Transmission Owner
Sasser	Jonathan	Customized Energy Solutions, Ltd.*	Not Applicable
Scarpignato	David	Calpine Energy Services, L.P.	Generation Owner
Seiler	Ken	PJM Interconnection, LLC	Not Applicable
Segner	Sharon	LS Power Transmission, LLC	Not Applicable
Shah	Pulin	PECO Energy Company	Transmission Owner
Shegarfi	Roosbeh	Exelon Energy Company	Transmission Owner
Shoemaker	Jason	PJM Interconnection, LLC	Not Applicable
Sims	Mark	PJM Interconnection, LLC	Not Applicable
Sock	Bryan	PSEG Energy Resources and Trade LLC	Transmission Owner
Squibb	Bill	Ohio Valley Electric	Generation Owner
Stanisz	Mark	PJM Interconnection, LLC	Not Applicable
Steinkuhl	Steve	Duke Energy Business Services LLC	Transmission Owner
Stern	Alexander	Public Service Electric & Gas Company	Transmission Owner
Sun	Haiban	Exelon Corp	Transmission Owner
Sweeney	Rory	GT Power Group	Not Applicable
Taylor	Robert	Exelon Business Services Company, LLC	Transmission Owner
Taylor	Miles	Northern Indiana Public Service Company	Other Supplier
Tekle	Zelalem	Baltimore Gas and Electric Company	Transmission Owner
Thomas	Jack	PJM Interconnection, LLC	Not Applicable
Thundiyil	Kevin	Exelon Energy Company	Transmission Owner
Von Pinho	Frederico	NextEra Energy Transmission, LLC	Other Supplier
Wang	Yang	NiSource Inc.	Not Applicable
Weber	Adam	Union Electric Company d/b/a Ameren Missouri	Other Supplier

Westendorf	Alex	Commonwealth Edison Company	Transmission Owner
Whitehead	Jeffrey	GT Power Group	Not Applicable
Wicks	Tonja	Duquesne Light Company	Transmission Owner
Wisersky	Megan	Madison Gas & Electric Company	Other Supplier
Worcester	Alex	PJM Interconnection, LLC	Not Applicable
York	Amy	McNees Wallace & Nurick	Not Applicable
Zhang	Li Frank	Dominion Virginia Power	Not Applicable
Zweig	James	American Transmission Company, LLC	Transmission Owner