

**Market Implementation Committee**  
**PJM Conference & Training Center, Audubon, PA**  
**February 5, 2020**  
**9:00 a.m. – 4:00 p.m. EPT**

## Administration

1. Ms. Bhavana Keshavamurthy, PJM, provided announcements; reviewed the Antitrust, Code of Conduct, Public Meetings/Media Participation, the WebEx Participant Identification Requirement and the reviewed the safety protocols.

The Committee approved the draft minutes from the Jan. 11, 2020 Market Implementation Committee meeting with **0 abstentions and 0 objections.**

Ms. Lisa Morelli, PJM, notified the MIC that an additional MIC Special Session - Capacity Market Minimum Offer Price Rule (MOPR) Order has been scheduled for Feb. 28, 2020 and that the meeting is open for registration. Ms. Morelli also notified the MIC that as the PJM Planning Queue now has over 10,000 MW of “hybrid” generators—those with storage paired with another generation technology, such as solar, PJM is bringing a problem statement/issue charge to the Feb. 20, 2020 Markets and Reliability Committee Meeting in order to address gaps identified with such resources.

Ms. Sharon Midgley, Exelon, made a motion to request that Item 12 - Five Minute Dispatch and Pricing be considered a First Reading by the Committee. Mr. Gary Greiner, PSEG, seconded the motion. The Committee voted by acclamation and the motion passed **with 0 objections and 13 abstentions.**

## Endorsements/Approvals

2. **Synchronized Reserve Variable Operation and Maintenance Cost**

Ms. Catherine Tyler, Monitoring Analytics, reviewed a problem statement and issue charge associated with the allowable level of variable operations and maintenance costs in synchronized reserve offers. The committee was asked to approve the issue charge and endorse the proposed revisions to Manual 15: Cost Development Guidelines as part of the Quick Fix process outlined in Section 8.6.1 of Manual 34. Ms. Sharon Midgley, Exelon, made a motion to defer this issue charge till at least 7 days after FERC rules on the PJM’s pending filing regarding the reserve markets and the Operating Reserve Demand Curve to ensure that the rule changes are in accordance with FERC’s guidance on the matter. Mr. David Scarpignato, Calpine, seconded the motion. The committee voted on the motion.

**The motion passed with 144 (77%) in favor, 44 (23%) against and 36 abstentions.**

## First Readings

3. **Pseudo-Tie Eligibility Requirements**

Mr. Phil D'Antonio, PJM, provided a first read on updates to Manual 12, Attachment F reviewing additional clarity and updated references for the Pseudo-Tie Eligibility Requirements. Several stakeholders expressed concern with the timing of the manual updates given that FERC has yet to rule on pending complaints addressing the current Pseudo-Tie rules. After extensive stakeholder discussion and feedback, Mr. D'Antonio announced that PJM will be withdrawing the proposed manual changes until FERC rules on the matter.

#### 4. **OC/MIC special session: Fuel Requirements for Black Start Resources**

Ms. Janell Fabiano, PJM, provided a first read on three proposals from the OC/MIC special session: Fuel Requirements for Black Start Resources. Ms. Fabiano also reviewed the logistics of the joint OC-MIC vote in March for this issue. This issue will be voted at a Joint OC/MIC Special Session to be held at 9.00 a.m. on Mar.11, 2020. Stakeholders are requested to update their MIC or OC rosters, as necessary, to ensure they are able to vote on this issue.

#### 5. **Five Minute Dispatch and Pricing**

- A. Mr. Thomas DeVita, PJM and Mr. Tim Horger, PJM, provided an overview of PJM's proposed path forward for addressing the misalignment of five minute dispatch and pricing in light of the recent FERC order holding the Fast Start docket in abeyance until July 31 given this issue.
- B. Ms. Catherine Tyler, Monitoring Analytics, provided Monitoring Analytics' perspective and reviewed suggested paths forward.
- C. Mr. Vijay Shah, PJM, provided the committee with an update on the discussions the MIC special sessions have had around the principles of LMP verification and sought feedback to inform future special session discussions.

**The committee will be asked to vote on this issue at the March MIC.**

[Issue Tracking: Five Minute Dispatch and Pricing](#)

### Working Items

#### 6. **Opportunity Cost Calculator Update**

Mr. Glen Boyle, PJM, provided an update on the Opportunity Cost Calculator (OCC) proposal that was previously voted at the September MIC. The proposal includes retiring the PJM OCC Calculator on Jun.1, 2020. This issue will be voted at the Mar.26 MRC.

[Issue Tracking: Opportunity Cost Calculator](#)

#### 7. **Capacity Market Minimum Offer Price Rule (MOPR) Order**

- A. Mr. Ken Schuyler, PJM, discussed the tracking of voluntary RECs and the election of the competitive exemption.
- B. Mr. Joe Bowring, Monitoring Analytics, reviewed IMM's COMED Fixed Resource Requirement (FRR) analysis. Mr. Jason Barker, Exelon, provided Exelon's perspective on the IMM's FRR analysis.

## 8. **Update on PJM March 11 FERC filing on Capacity Market Capability of Energy Storage Resources**

Mr. Andrew Levitt, PJM, provided an update on the process to prepare PJM's brief to FERC on the Capability of Capacity Storage Resources in Docket EL19-100, due March 11, 2020. An additional MIC Special Session has been scheduled for Feb.24, 2020 to continue discussions on this topic.

### Additional Items

## 9. **Update on the October 2, 2019 Performance Assessment Interval**

Ms. Danielle Croop, PJM, provided an overview of the performance assessments that resulted from the Oct. 2 event.

## 10. **2020/21 ARR/FTR Update**

Ms. Xu Xu, PJM, reviewed the ARR/FTR modeling processes completed to date and upcoming deadlines for the 2020/2021 planning year.

## 11. **Incremental Auction Revenue Rights for RTEP Upgrades**

Ms. Emmy Messina, PJM, provided an update on Incremental Auction Revenue Rights for upgrades in the Regional Transmission Expansion Plan for the 2020/2021 planning year.

## 12. **Annual Meeting Update**

Ms. Jennifer Tribulski, PJM, provided an update regarding the PJM Annual Meeting and described registration updates and enhancements.

### Informational Section

**Note:** Discussions on the [Stability Limits in Markets and Operations](#) agenda item will resume at the March MIC.

#### **Q42019 Net Energy Injections Quarterly Report**

Materials are posted as informational only.

#### **CP Unit Specific Parameter Update**

Materials are posted as informational only.

#### **Interregional Coordination Update**

Materials are posted as informational only.

#### **Credit Subcommittee (CS)**

Meeting materials will be posted to the [CS website](#).

## Demand Response Subcommittee (DRS)

Meeting materials will be posted to the [DRS web site](#).

## Intermittent Resources Subcommittee (IRS)

Meeting materials will be posted to the [IRS web site](#).

## Market Settlements Subcommittee (MSS)

Meeting materials are posted to the [MSS web site](#).

## Report on Market Operations

The Report on Market Operations will be reviewed during the [MC Webinar](#).

### Future Meeting Dates

March 11, 2020	9:00 a.m.	PJM Conference & Training Center/ WebEx
April 15, 2020	9:00 a.m.	PJM Conference & Training Center/ WebEx
May 13, 2020	9:00 a.m.	PJM Conference & Training Center/ WebEx
June 3, 2020	9:00 a.m.	PJM Conference & Training Center/ WebEx

Author: Bhavana Keshavamurthy

### In-Person Meeting Attendees

Names	Company Name	Sector
Morelli, Lisa (Chair)	PJM Interconnection, LLC	Not Applicable
Keshavamurthy, Bhavana (Secretary)	PJM Interconnection, LLC	Not Applicable
Anders, David	PJM Interconnection, LLC	Not Applicable
Barker, Jason	Exelon Business Services Company, LLC	Transmission Owner
Benchek, Jim	American Transmission Systems, Inc.	Transmission Owner
Bowring, Joe	Monitoring Analytics, LLC	Not Applicable
Boyle, Glen	PJM Interconnection, LLC	Not Applicable
Bresler, Stu	PJM Interconnection, LLC	Not Applicable
Brodbeck, John	EDP Renewables North America, LLC	Other Supplier
Bruno, Patrick	PJM Interconnection, LLC	Not Applicable
Canter, David	Appalachian Power Company	Transmission Owner
Chmielewski, Brian	PJM Interconnection, LLC	Not Applicable
Croop, Danielle	PJM Interconnection, LLC	Not Applicable
D'Antonio, Phil	PJM Interconnection, LLC	Not Applicable
DeVita, Thomas	PJM Interconnection, LLC	Not Applicable
Dugan, Chuck	East Kentucky Power Cooperative, Inc.	Transmission Owner
Everngam, Scott	Blue Horse Shoe Energy	Not Applicable
Fabiano, Janell	PJM Interconnection, LLC	Not Applicable
Fernandez, Ray	PJM Interconnection, LLC	Not Applicable
Fitch, Neal	NRG Power Marketing LLC	Generation Owner
Foley, Imelda	Environmental Defense Fund	Not Applicable
Ford, Adrien	Old Dominion Electric Cooperative	Electric Distributor
Fuess, Christian	PBF Power Marketing	Generation Owner
Greening, Michele	PJM Interconnection, LLC	Transmission Owner
Greiner, Gary	PSEG Energy Resources and Trade LLC	Other Supplier
Haque, Asim	PJM Interconnection, LLC	Not Applicable

Hauske, Thomas	PJM Interconnection, LLC	Not Applicable
Hoatson, Tom	LS Power	Not Applicable
Holter, Natasha	PJM Interconnection, LLC	Not Applicable
Horger, Tim	PJM Interconnection, LLC	Not Applicable
Horning, Lynn Marie	Customized Energy Solutions, Ltd.*	Not Applicable
Johnson, Carl	Customized Energy Solutions, Ltd.*	Not Applicable
Keech, Adam	PJM Interconnection, LLC	Not Applicable
Kilgallen, Kevin	Avangrid Renewables, LLC	Generation Owner
Levitt, Andrew	PJM Interconnection, LLC	Not Applicable
Lieberman, Steve	American Municipal Power, Inc.	Electric Distributor
Lowe, Connie	Virginia Electric & Power Company	Transmission Owner
Lu, Chenchao	PJM Interconnection, LLC	Not Applicable
Mabry, David	McNees Wallace & Nurick LLC	Not Applicable
Messina, Emmy	PJM Interconnection, LLC	Not Applicable
Midgley, Sharon	Exelon Business Services Company, LLC	Transmission Owner
Nix, Emma	Gable Associates	Not Applicable
Noonan, Casey	PJM Interconnection, LLC	Not Applicable
Philips, Darlene	PJM Interconnection, LLC	Not Applicable
Pilong, Chris	PJM Interconnection, LLC	Not Applicable
Pilong, Melissa	PJM Interconnection, LLC	Not Applicable
Pincus, Steve	PJM Interconnection, LLC	Not Applicable
Poulos, Greg	CAPS	Not Applicable
Powers, Sean	Linde, LLC	End User Customer
Robinson, Becky	Vistra Energy	Not Applicable
Sasser, Jonathan	Customized Energy Solutions, Ltd.*	Not Applicable
Scarpignato, David	Calpine Energy Services, L.P	Generation Owner
Shah, Vijay	PJM Interconnection, LLC	Not Applicable
Sweeney, Rory	GT Power Group	Not Applicable
Tribulski, Jennifer	PJM Interconnection, LLC	Not Applicable
Tyler, Catherine	Monitoring Analytics, LLC	Not Applicable
Whitehead, Jeffrey	GT Power Group	Not Applicable
Xu, Xu	PJM Interconnection, LLC	Not Applicable

## Webex Meeting Attendees

<b>Names</b>	<b>Company Name</b>	<b>Sector</b>
Ainspan, Malcolm	Energy Curtailment Specialists, Inc.	Other Supplier
Ament, Todd	Cube Hydro	Generation Owner
Anderson, Bob	Tenaska Power Services	Generation Owner
Anderson, Jared	SPG Global	Not Applicable
Anthony, Jason	Korean Energy Limited	Not Applicable
Berg, William	Exelon Business Services Company, LLC	Transmission Owner
Bernstein, Matthew	PJM Interconnection, LLC	Not Applicable
Bhavaraju, Murty	PJM Interconnection, LLC	Not Applicable
Bickerstaff, Dean	Hartree Partners, LLC	Other Supplier
Bockhorn, Tim	AES Ohio Generation, LLC	Generation Owner
Borgatti, Michael	Gabel and Associates	Not Applicable
Briscar, Joseph	SMXB Law	Not Applicable
Bryson, Mike	PJM Interconnection, LLC	Not Applicable
Budney, Dave	PJM Interconnection, LLC	Not Applicable
Burwen, Jason	Electric Storage Association	Not Applicable

Campbell, Bruce	EnergyConnect, Inc.	Other Supplier
Canchi ,Devendra	Monitoring Analytics, LLC	Not Applicable
Carmean, Greg	OPSI	Not Applicable
Catanach, James	FirstEnergy Solutions Corp.	Transmission Owner
Chang, Sean	Shell Energy North America (US), LP	Other Supplier
Chen,Hong	PJM Interconnection, LLC	Not Applicable
Chocarro, Iker	RWE Renewables Americas, LLC	Generation Owner
Christopher,Mahila	Ohio Public Utility Commission	Not Applicable
Chu, George	PJM Interconnection, LLC	Not Applicable
Ciabattoni, Joe	PJM Interconnection, LLC	Not Applicable
Cocco, Michael	Old Dominion Electric Cooperative	Electric Distributor
Codd, Chris	Transalta Energy Marketing	Other Supplier
Coultas, Ann	Invenergy, LLC	Generation Owner
Coyne, Suzanne	PJM Interconnection, LLC	Not Applicable
Crystle, Gil	UGI Development Company	Transmission Owner
Daily, Mike	Northern Virginia Electric Cooperative	Electric Distributor
Dadourian, John	Monitoring Analytics, LLC	Not Applicable
Davis, Elizabeth	PJM Interconnection, LLC	Not Applicable
Dennis, Jeff	Advanced Energy Economy	Not Applicable
DePillo, Ray	PSEG Energy Resources and Trade LLC	Transmission Owner
DiNicola, Laura	FirstEnergy Solutions Corp.	Transmission Owner
Dixon, Chad	Customized Energy Solutions. Ltd	Not Applicable
Domian, Christin	Duquesne Light Company	Transmission Owner
Drom, Richard	Eckert Seamans	Not Applicable
Duensing, Allison	Saracen Energy	Other Supplier
Fan, Zhenyu	PJM Interconnection, LLC	Not Applicable
Fazio,Danielle	Engelhart CTP (US) LLC	Other Supplier
Feely, Brian	Eligo Energy	Other Supplier
Feller, John	PPL Electric Utilities Corp. dba PPL Utilities	Transmission Owner
Fink, Sari	American Wind Energy Management Corporation	Not Applicable
Fishback, Luke	Affirmed Energy	Other Supplier
Fitzpatrick, Brian	PJM Interconnection, LLC	Not Applicable
Foldare, Kenneth	Tangible	Not Applicable
Frogg, Darrell	PJM Interconnection, LLC	Not Applicable
Fuller, Pete	Autumn Lane Energy	Not Applicable
Garnett, Bryan	Duke Energy	Transmission Owner
Genuario,Gabrielle	PJM Interconnection, LLC	Not Applicable
Gilani, Rehan	ConEdison Energy, Inc.	Other Supplier
Glazer. Craig	PJM Interconnection, LLC	Not Applicable
Grant, Andrew	Geronimo Energy	Not Applicable
Guntle, Vince	UGI Development Company	Generation Owner
Guo, Nongchao	NYISO	Not Applicable
Hanser, Erik	Michigan Public Service Commission	Not Applicable
Hastings, David	Market Interconnection LLC	Not Applicable
Heinle, Erik	D.C. Office of the People's Counsel	Not Applicable
Helms, Joe	Rainbow Energy Marketing Corporation	Other Supplier
Herel, Suzanne	PJM Interconnection, LLC	Not Applicable
Hilaski, Steve	Potomac Electric Power Company	Electric Distributor
Hohenshilt, Jennifer	Talen Energy Marketing, LLC	Generation Owner
Holdbrook, Ruth	Northern Virginia Electric Cooperative	Electric Distributor
Horton, Dana	Appalachian Power Company	Transmission Owner
Hsia, Eric	PJM Interconnection, LLC	Not Applicable
Hudis, Gabriella	Jersey Green Energy LLC	Other Supplier
Hull, Gerit	American Municipal Power, Inc.	
Hurwich, Mark	Elliott Bay Energy Trading, LLC	Other Supplier

Hyatt, John	Monitoring Analytics, LLC	Not Applicable
Hyzinski, Tom	GT Power Group	Not Applicable
Islam, Lubaba	ConEdison Energy, Inc.	Other Supplier
Jacobs, Mike	Union of Concerned Scientists	Not Applicable
Janicki, Diane	Boston Energy Trading & Marketing, LLC	Generation Owner
Jens, Tom	Blackoak Capital	Other Supplier
Jett, William	Duke Energy Business Services LLC	Generation Owner
Jha, Monica	PCI	Not Applicable
Johnson, Nick	Tenaska Power Services	Generation Owner
Keegan, Jack	Just Energy	Other Supplier
Kenney, Susan	PJM Interconnection, LLC	Not Applicable
Kimmel, David	PJM Interconnection, LLC	Not Applicable
Kozhuharov, Dimitar	Delaware Municipal Electric Corporation, Inc.	Electric Distributor
Langbein, Pete	PJM Interconnection, LLC	Not Applicable
Leasure, Jill	Keystone-Conemaugh Projects, LLC	Other Supplier
Lejcar, Jamie	Allegheny Electric Cooperative, Inc.	Electric Distributor
Leopold, Chris	Appalachian Power Company	Transmission Owner
Levine, Jeffrey	ENGIE Energy Marketing NA, Inc.	Other Supplier
Libbos, Robin	FirstEnergy Solutions Corp.	Transmission Owner
Mancuso, Melanie	FirstEnergy Solutions Corp.	Transmission Owner
Mariam, Yohanna	Office of the Peoples Counsel for the District of Columbia	End User Customer
Markiewicz, Cindy	FirstEnergy Solutions Corp.	Transmission Owner
Martin, Valerie	The Federal Energy Regulatory Commission	Not Applicable
Marzewski, Skyler	Monitoring Analytics, LLC	Not Applicable
Matsuzak, Alex	UGI Energy Services	Other Supplier
McGlynn, Paul	PJM Interconnection, LLC	Not Applicable
Miller, John	Commonwealth Edison Company	Transmission Owner
Monzon, Stephanie	PJM Interconnection, LLC	Not Applicable
Nowell, Cynthia	Potomac Electric Power Company	Electric Distributor
Olaleye, Michael	PJM Interconnection, LLC	Not Applicable
Ondayko, Brock	Appalachian Power Company	Transmission Owner
Opel, Laurie	Grid Advisors	Not Applicable
Pakela, Gregory	DTE Energy Trading, Inc.	Other Supplier
Patel, Keyurbhai	PJM Interconnection, LLC	Not Applicable
Pelletier, Eveline	Hydro-Quebec	Not Applicable
Peoples, John	Duquesne Light Company	Transmission Owner
Philips, Marjorie	Direct Energy Business, LLC	Other Supplier
Reeping, Bob	Ohio Edison Company	Transmission Owner
Rohrbach, John	ACES Power	Not Applicable
Rutigliano, Tom	NRDC	Not Applicable
Salaneck, Alexandra	Monitoring Analytics, LLC	Not Applicable
Scheidecker, Paul	PJM Interconnection, LLC	Not Applicable
Schum, Alice	Illinois Municipal Electric Agency	Electric Distributor
Shanker, Roy	H.Q. Energy Services (U.S.), Inc.	Other Supplier
Sock, Brian	Public Service Electric & Gas Company	Transmission Owner
Sotkiewicz, Paul	E-Cubed Policy Associates LLC	Not Applicable
Stefanowicz, Vince	PJM Interconnection, LLC	Not Applicable
Stern, Alex	PSEG Energy Resources and Trade LLC	Transmission Owner
Stone, Andy	PJM Interconnection, LLC	Not Applicable
Strella, Lauren	PJM Interconnection, LLC	Not Applicable
Sturgeon, John	Duke Energy Carolinas, LLC	Other Supplier
Swalwell, Brad	Tangent Energy	Other Supplier
Tangirala, Subha	ABB	Not Applicable
Theodore, Sharon	Electric Power Supply Association	Not Applicable
Tibbetts, Maeve	Pierce Atwood	Not Applicable



# Draft Minutes

Vayda, Brian  
Walter, Laura  
Ward, Michael  
Warshel, Kim  
Wehnes, Kathleen  
Widom, Stu  
Wilson, Bram  
Zhou, Ming

Borough of Park Ridge, NJ  
PJM Interconnection, LLC  
PJM Interconnection, LLC  
PJM Interconnection, LLC  
Maryland Department of the Environment  
PJM Interconnection, LLC  
EFW, Inc  
PSEG Energy Resources and Trade LLC

Electric Distributor  
Not Applicable  
Not Applicable  
Not Applicable  
Not Applicable  
Not Applicable  
Not Applicable  
Transmission Owner