



ARR FTR Market Task Force (AFMTF) Webex March 25, 2020 9:00 a.m. – 4:00 p.m. EPT

Administration (9:00-9:05)

Ms. Emmy Messina provided welcome, announcements, and review of the Antitrust, Code of Conduct, and Public Meetings/Media Participant Guidelines. Stakeholders approved the draft minutes from the February 19, 2020 meeting.

Process and Work Plan (9:05-9:10)

1. Mr. Dave Anders previewed the proceedings of the day.

Education (9:10-9:20)

2. Dr. William Hogan, Harvard University, gave a perspective on the ARR/FTR construct.

Initial Interest Identification (9:20-9:50)

3. Mr. Dave Anders and Ms. Emmy Messina conducted initial interest identification.

Education Continued (9:50-12:00)

- 4. Mr. Tim Horger provided education on the FTR point-to-point construct.
- 5. Mr. Brian Chmielewski presented additional education on the current ARR/FTR design and supporting metrics.

Break 10:50 - 11:00

6. Dr. Howard Haas, Monitoring Analytics, presented an example detailing congestion calculations.

Lunch 12:00 - 1:00

Other Region's Congestion Rights Markets (1:00-4:00)

- 7. Dr. Guillermo Bautiste Alderete, CAISO, presented on the CAISO Congestion Revenue Rights (CRR) market structure and statistics.
- 8. Mr. Donald House, ERCOT, presented on the ERCOT CRR market structure and statistics.





Future Agenda Items

Value Proposition of ARR/FTR Market

PJM's Current ARR/FTR Design

Interest Identification

Design Components

Future Meeting Dates

| April 29, 2020 | 9:00 a.m. | PJM Conference & Training Center/ WebEx |
|----------------|-----------|---|
| May 27, 2020 | 9:00 a.m. | PJM Conference & Training Center/ WebEx |
| June 17, 2020 | 9:00 a.m. | PJM Conference & Training Center/ WebEx |
| June 26, 2020 | 9:00 a.m. | PJM Conference & Training Center/ WebEx |

Author: Emmy Messina

Webex Meeting Attendees

| Name | Company Name | Sector |
|-----------------------------|---|----------------------|
| Anders, David (Facilitator) | PJM Interconnection | Not Applicable |
| Messina, Emmy (Secretary) | PJM Interconnection | Not Applicable |
| Ali, Shadab | PPL Electric Utilities Corp. dba PPL Utilities (TO) | Transmission Owner |
| Bautista, Guillermo | California ISO | Not Applicable |
| Bazar, Kevin | PJM Interconnection | Not Applicable |
| Bearden, Joel | XO Energy MA, L.P. | Other Supplier |
| Bernstein, Matthew | PJM Interconnection | Not Applicable |
| Bleiweis, Bruce | DC Energy, LLC | Other Supplier |
| Bowring, Joe | Monitoring Analytics | Not Applicable |
| Brodbeck, John | EDP Renewables North America LLC | Generation Owner |
| Bruce, Matt | MCG Energy | Not Applicable |
| Bruce, Susan | McNees Wallace & Nurick LLC | Not Applicable |
| Buras, Josh | Calpine Energy Solutions, LLC | Other Supplier |
| Carmean, Gregory | OPSI | Not Applicable |
| Carrier, Ronald | Direct Energy Business, LLC | Other Supplier |
| Chang, Sean | Shell Energy North America (US), L.P. | Other Supplier |
| Chintapalli, Raj | BP Energy Company | Other Supplier |
| Chmielewski, Brian | PJM Interconnection | Not Applicable |
| Christopher, Mahila | Public Utilities Commission of Ohio | Not Applicable |
| Cocco, Michael | Old Dominion Electric Cooperative | Electric Distributor |
| Cochran, Seth | DC Energy, LLC | Other Supplier |
| Cook, Michael | AEP Energy Partners, Inc. | Transmission Owner |
| D'Alessandris, Lou | FirstEnergy Solutions Corp. | Transmission Owner |





| Davis, James | Dominion Energy Generation Marketing, Inc. | Generation Owner |
|----------------------|---|----------------------|
| DeLosa, Joseph | New Jersey Board of Public Utilities | Not Applicable |
| Denby, Brett | Northern Virginia Electric Cooperative (NOVEC) | Electric Distributor |
| DePasquale, William | PJM Interconnection | Not Applicable |
| Depillo, Raymond | PSEG Energy Resources and Trade LLC | Other Supplier |
| Dillon, Matthew | UGI Development Company | Generation Owner |
| DiNicola, Laura | FirstEnergy Solutions Corp. | Transmission Owner |
| Duensing, Allison | Saracen Energy East LP | Other Supplier |
| Dugan, Chuck | East Kentucky Power Cooperative, Inc. | Transmission Owner |
| Eklof, Nate | WPPI Energy | Other Supplier |
| Engle, Andrew | XO Energy MA | Other Supplier |
| Everngam, Scott | Blue Horseshoe Energy LLC | Not Applicable |
| fan, zhenyu | PJM Interconnection | Not Applicable |
| Feng, Julan | PJM Interconnection | Not Applicable |
| Filomena, Guy | Customized Energy Solutions, Ltd. | Not Applicable |
| Findley, Samantha | Electrical Reliability Council of Texas | Not Applicable |
| Fitch, Neal | NRG Power Marketing, LLC | Generation Owner |
| Foladare, Kenneth | Geenex Solar LLC | Generation Owner |
| Foley, Imelda | Environmental Defense Fund | Not Applicable |
| Ford, Adrien | Old Dominion Electric Cooperative | Electric Distributor |
| Foster, Denise | East Kentucky Power Cooperative, Inc. | Transmission Owner |
| Francoeur, Rene | Red Wolf Energy Trading, LLC | Other Supplier |
| Gahimer, Michael | Indiana Office of Utility Consumer Counselor (IN OUCC) | End-Use Customer |
| Gibbs, Ike | Citadel Fnge Ltd. | Other Supplier |
| Gilani, Rehan | ConEdison Energy, Inc. | Other Supplier |
| Gluck, Jim | PJM Interconnection | Not Applicable |
| Gorman, Kevin | The Highlands Energy Group, LLC | Other Supplier |
| Gorman, Kevin | The Highlands Energy Group, LLC | Other Supplier |
| Grau, Patrick | Apogee Energy Trading LLC | Other Supplier |
| Guo, JauJia | Appalachian Power Company (AEP Generation) | Transmission Owner |
| Haas, Howard | Monitoring Analytics | Not Applicable |
| Hastings, David | Market Interconnection Consulting Services (MICS) | Not Applicable |
| Hayik, Seth | Monitoring Analytics | Not Applicable |
| Heinle, Frederick | Office of the People's Counsel for the District of Columbia | End-Use Customer |
| Herbert, Sebastian | DC Energy, LLC | Other Supplier |
| Hoatson, Tom | West Deptford Energy, LLC | Generation Owner |
| Hogan, Bill | Harvard University | Not Applicable |
| Hohenshilt, Jennifer | Talen Energy Marketing, LLC | Generation Owner |





| Holdbrook, Ruth | Northern Virginia Electric Cooperative (NOVEC) | Electric Distributor |
|---------------------|---|----------------------|
| Holter, Natasha | PJM Interconnection | Not Applicable |
| Horger, Tim | PJM Interconnection | Not Applicable |
| Horning, Lynn Marie | Customized Energy Solutions, Ltd. | Not Applicable |
| Horton, Dana | Appalachian Power Company (AEP Generation) | Transmission Owner |
| House, Donald | Electrical Reliability Council of Texas | Not Applicable |
| Howe, Keith | MCG Energy | Not Applicable |
| Hull, Gerit | American Municipal Power, Inc. | Electric Distributor |
| Hurwich, Mark | Elliott Bay Energy Trading, LLC | Other Supplier |
| Hyzinski, Tom | GT Power Group | Not Applicable |
| Janicki, Diane | Boston Energy Trading and Marketing LLC | Other Supplier |
| Jha, Monica | PCI | Not Applicable |
| Johnson, Carl | Customized Energy Solutions, Ltd. | Not Applicable |
| Johnston, David | Indiana Utility Regulatory Commission | Not Applicable |
| Jones, Pete | Monterey MA LLC | Other Supplier |
| Kazerooni, Hamid | Invenergy, LLC | Generation Owner |
| Kelly, Stephen | Brookfield Renewable Trading and Marketing LP (BSMH) | Other Supplier |
| Kharod, Ankit | PJM Interconnection | Not Applicable |
| Kilgallen, Kevin | Avangrid Renewables, LLC | Generation Owner |
| Klein, Abram | Appian Way Energy Partners MidAtlantic, LLC | Other Supplier |
| Kogut, George | New York Power Authority | Other Supplier |
| Kozhuharov, Dimitar | State Commissions | Not Applicable |
| Kumar, Nikhil | Darby Energy, LLC | Other Supplier |
| Kuo, David | DC Energy, LLC | Other Supplier |
| Lamp, Jeff | Peak Energy Capital Lp | Other Supplier |
| Lee, George | Tower Research | Not Applicable |
| Lejcar, Jamie | Allegheny Electric Cooperative, Inc. | Electric Distributor |
| Lieberman, Steven | American Municipal Power, Inc. | Electric Distributor |
| Lin, Michael | DC Energy, LLC | Other Supplier |
| Lynch, Ben | FirstEnergy Solutions Corp. | Transmission Owner |
| Mabry, David | McNees Wallace & Nurick LLC | Not Applicable |
| Mancuso, Melanie | FirstEnergy Solutions Corp. | Transmission Owner |
| Manders, Maarten | Danske Commodities US LLC | Other Supplier |
| Mariam, Yohannes | Office of the People's Counsel for the District of Columbia | End-Use Customer |
| Mehta, Chirag | Durable Power | Not Applicable |
| Metzler, Jakob | Castleton Commodities Merchant Trading L.P. | Other Supplier |
| Midgley, Sharon | Exelon Business Services Company, LLC | Transmission Owner |
| Mok, Alan | Duke Energy Kentucky, Inc. | Transmission Owner |





| Murawski, Jim | PSEG Energy Resources and Trade LLC | Other Supplier |
|---------------------|---|--------------------|
| Nathan, Prabhakaran | MISO | Not Applicable |
| Noonan, Casey | PJM Interconnection | Not Applicable |
| Ondayko, Brock | AEP Energy Partners, Inc. (AEP Gen Resources) | Transmission Owner |
| Pakela, Greg | DTE Energy Trading, Inc. | Other Supplier |
| Parsons, John | MIT | Not Applicable |
| Patel, Keyur | PJM Interconnection | Not Applicable |
| Perera, Asanga | PJM Interconnection | Not Applicable |
| Poulos, Greg | CAPS | Not Applicable |
| Price, Mark | DC Energy Mid-Atlantic, LLC | Other Supplier |
| Price, Ruth | Delaware Division of the Public Advocate | End-Use Customer |
| Rajan ES, Abhijit | Dominion Virginia Power | Transmission Owner |
| Ramsey, James | Perast Fund LP | Other Supplier |
| Ramsey, James | Perast Fund LP (Suffolk) | Other Supplier |
| Reeping, Bob | Ohio Edison Company (ATSI FRR) | Transmission Owner |
| Robinson, Becky | Vistra Energy | Not Applicable |
| Robson, Matt | SESCO Enterprises, LLC | Other Supplier |
| Rosenberg, Michael | None | Not Applicable |
| Sasser, Jonathan | Customized Energy Solutions, Ltd. | Not Applicable |
| Schneider, Kurt | FirstEnergy Solutions Corp. | Transmission Owner |
| Schreim, Morris | MD PSC | Not Applicable |
| Shanker, Roy | East Coast Power Linden Holdings, LLC | Generation Owner |
| Sheehan, Shawn | XO Energy MA | Other Supplier |
| Sillin, John | The Federal Energy Regulatory Commission | Not Applicable |
| Sock, Bryan | Cogentrix | Not Applicable |
| Solomon, Greg | NextEra Energy Marketing, LLC (AF) | Other Supplier |
| Squibb, Bill | Ohio Valley Electric Corporation | Transmission Owner |
| Stevens, Andrew | DC Energy, LLC | Other Supplier |
| Sturgeon, John | Duke Energy Business Services LLC | Transmission Owner |
| Suh, Jung | Calpine Energy Solutions, LLC | Other Supplier |
| Sweeney, Rory | GT Power Group | Not Applicable |
| Thompson, Matthew | XO Energy MA | Other Supplier |
| Tibbetts, Maeve | Pierce Atwood | Not Applicable |
| Toomey, Megan | Talen Energy Marketing, LLC | Generation Owner |
| Torres, Maria | Active Power Investments | Not Applicable |
| Tournois, Pierre | Durable Power | Not Applicable |
| VanderLaan, William | Illinois Commerce Commission | Not Applicable |
| Wadsworth, Joseph | Vitol Inc. | Other Supplier |





| Ward, Michael | PJM Interconnection | Not Applicable |
|--------------------|---------------------------------------|----------------------|
| Whitehead, Jeffrey | GT Power Group | Not Applicable |
| Willey, Amy | Delaware Public Service Commission | Not Applicable |
| Wisersky, Megan | Madison Gas & Electric Co. | Other Supplier |
| Witt, Sally | East Kentucky Power Cooperative, Inc. | Transmission Owner |
| Wood, Gordon | ETC Endure Energy L.L.C. | Other Supplier |
| Wynder, Michael | PJM Interconnection | Not Applicable |
| XU, XU | PJM Interconnection | Not Applicable |
| Yi, Weili | Energy Authority, Inc. (The) | Other Supplier |
| Yoo, Kyungjin | Monitoring Analytics | Not Applicable |
| Zemanek, Kevin | Buckeye Power, Inc. | Electric Distributor |
| Zhao, Rongda | Dominion Virginia Power (LSE) | Not Applicable |
| Zhong, Wanyun | FirstEnergy Solutions Corp. | Transmission Owner |
| Zhou, Ming | PSEG Energy Resources and Trade LLC | Other Supplier |
| Zhu, Min | Jane Street Energy Trading, LLC | Other Supplier |