

DER and Inverter-based Resources Subcommittee (DIRS)

WebEx Only

June 28, 2021

9:00 a.m. – 4:00 p.m. ET

Administration (9:00 – 9:15)

1. Scott Baker, chair, opened the meeting and reviewed the agenda.
2. Nicole Militello, secretary, reviewed the meeting participation guidelines. The updated minutes from the last DIRS meeting were approved with 0 objections and 0 abstentions.
3. Thomas DeVita, PJM, provided a summary of FERC Order 2222-B.

Order 2222 – EDC Coordination Workshop (9:15 – 11:30)

4. Distribution utilities provided additional feedback on the PJM straw proposal.
 - Steven Hughes, PPL Electric Utilities Corp., started the discussion covering the following topics: EDC Core Principals and Requirements, Operational Coordination Models, Telemetry models, EDC Override Authority and Cyber Security.
 - Ed Stein, Ohio Edison Company, continued the discussion covering Real Time Data Flows and settlement process implications.
 - Steven Hughes, PPL Electric Utilities Corp., completed the discussion by reviewing potential Use Cases.

Order 2222 – Proposal feedback and Use Case discussion (11:30 – 12:00; 12:45 – 2:00)

5. Scott Baker provided an update on DERA use case development and use of the compliance matrix for tracking stakeholder alternatives.
 - Scott Baker discussed high level the various use cases PJM is working on and solicited feedback for additional use cases.
 - Scott Baker reviewed updates made to the Order 2222 Compliance Matrix as well as reviewed new and updated parking lot items.
6. Jeff Dennis and Prusha Hasan, Advanced Energy Economy, will provide feedback on the PJM straw proposal.
 - Jeff Dennis, Advanced Energy Economy, began the discussion by introducing Advanced Energy Economy (AEE), explaining the importance of DERs, the benefits of aggregated DER as well as general RTO Compliance Recommendations.

- Prusha Hasan, Advanced Energy Economy, continued the discussion by reviewing four (4) Order 2222 DER Use Cases and providing feedback from the recommendations discussed at the May DIRS.
- Jeff Dennis, Advanced Energy Economy, wrapped up the discussion by covering next steps.


Solar-Battery Hybrid Resources (2:00 – 3:55)

- Information Only -- FERC Staff whitepaper on hybrid resources & Order directing reports from ISO/RTOs
 - Scott Baker shared that the FERC Staff whitepaper was available with the posted materials but would not be discussed during the meeting.
- Andrew Levitt, PJM, reviewed the PJM staff proposal (package A in the solutions matrix).
 - Andrew Levitt reviewed a presentation which covered all clarifications and updates to the PJM staff proposal since it was previously reviewed at the May DIRS.
 - Andrew Levitt reviewed the same changes within the matrix and made edits based on stakeholder feedback.
 - Jim Davis, Dominion, reviewed an additional solution option, package C in the solutions matrix.
- Stakeholders discussed the solution packages in the matrix and tested for support to make a recommendation to the Markets and Implementation Committee.
 - Stakeholders had no objections to taking both proposals to July MIC.

[Issue Tracking: Solar-Battery Hybrid Resources](#)

Action items and next meeting agenda (3:55 – 4:00)

- The facilitation team reviewed action items from the meeting and took requests for future agenda items.
 - PJM to post updated Order 2222 Solution Matrix
 - PJM to pose updated Hybrid Solution Matrix
 - PJM to update Hybrid Solution slide deck to reflect only zero cost offers do not require validation
 - PJM to share DER Use Cases at a future meeting

<i>Future Meeting Dates and Materials</i>			Materials Due to Secretary 	Materials Published
<i>Date</i>	<i>Time</i>	<i>Location</i>	5 p.m.	4 p.m.
<i>July 15, 2021–EDC Coordination workshop</i>	2:00 – 4:00	WebEx	July 7, 2021	July 12, 2021
<i>July 23, 2021</i>	9:00 - 4:00	WebEx	July 15, 2021	July 20, 2021

<i>August 10, 2021–EDC Coordination workshop</i>	3:00 – 5:00	WebEx	August 2, 2021	August 5, 2021
<i>August 16, 2021</i>	9:00 – 12:00	WebEx	August 6, 2021	August 11, 2021
<i>September 14, 2021</i>	9:00 – 12:00	WebEx	September 3, 2021	September 9, 2021
<i>September 21, 2021–EDC Coordination workshop</i>	3:00 – 5:00	WebEx	September 13, 2021	September 16, 2021
<i>October 22, 2021</i>	9:00 – 4:00	WebEx	October 14, 2021	October 19, 2021
<i>November 9, 2021-EDC Coordination workshop</i>	3:00 – 5:00	WebEx	November 1, 2021	November 4, 2021
<i>November 22, 2021</i>	9:00 – 3:00	WebEx	November 12, 2021	November 17, 2021
<i>December 9, 2021-EDC Coordination workshop</i>	3:00 – 5:00	WebEx	December 1, 2021	December 6, 2021
<i>December 21, 2021</i>	9:00 – 4:00	WebEx	December 13, 2021	December 16, 2021

Author: Nikki Militello

WebEx Meeting Attendance

Name	Company Name	Sector
Adrien Ford	Old Dominion Electric Cooperative	Electric Distributor
Aaron Anaya	Rockland Electric Company	Transmission Owner
Alex Rosenblatt	Duquesne Light Company	Transmission Owner
Alexander Stern	Public Service Electric & Gas Company	Transmission Owner
Alex Perez	Grid-X Partners LLC	None
Ali Lpakchi	Open Access Technology International, Inc.	None
Aliraza Rattansi	Jersey Central Power & Light Company	Transmission Owner
Amy Willey	Delaware Public Service Commission	None
Andrea Yeaton	PJM Interconnection	None
Andrew Blazek	Dominion Energy Generation Marketing, Inc.	Generation Owner
Andrew Levitt	PJM Interconnection	None
Arthur Iler	Indiana Office of Utility Consumer Counselor	End-Use Customer
Augustus Johnson	Dominion Virginia Power (EDC)	Transmission Owner
Bahaa Seireg	Rockland Electric Company	Transmission Owner
Becky Robinson	Dynegy Marketing and Trade, LLC	Generation Owner

Behnam Danaei	Open Access Technology International, Inc.	None
Benjamin Levitt	IHS Markit	None
Bernie Whitmoyer	Jersey Central Power & Light Company	Transmission Owner
Bethany Johnson	PPL Electric Utilities Corp. dba PPL Utilities (TO)	Transmission Owner
Billy Coyle	Dominion Virginia Power	Transmission Owner
Brad Swalwell	Tangent Energy Solutions, Inc.	Other Supplier
Brett Denby	Northern Virginia Electric Cooperative (NOVEC)	Electric Distributor
Brian Kauffman	Enel X North America, Inc.	Other Supplier
Brian McArdle	NextEra Energy Marketing, LLC	Other Supplier
Brock Ondayko	AEP Energy Partners, Inc. (AEP Gen Resources)	Transmission Owner
Bruce Campbell	Enerwise Global Technologies, LLC	Other Supplier
Bruce Sailors	Duke Energy Ohio, Inc. (EDC)	Transmission Owner
Byron Farnsworth Jr	Wellsboro Electric Company	Electric Distributor
Catherine Tyler	Monitoring Analytics	None
Chad Hirsh	Duquesne Light Company	Transmission Owner
Chris Rauscher	Sunrun	None
Christian Fuess	PBF Power Marketing, LLC	Generation Owner
Christian McDewell	Pennsylvania Public Utility Commission	None
Christin Domian	Duquesne Light Company	Transmission Owner
Christopher Pilong	PJM Interconnection	None
Christopher Wehr	Ohio Edison Company (EDC)	Electric Distributor
Chuck Dugan	East Kentucky Power Cooperative, Inc.	Transmission Owner

Cristina Drivas	Whitetail Solar 1, LLC	Generation Owner
Damon Fereshetian	PJM Interconnection	None
Daniel Moscovitz	PJM Interconnection	None
Darlene Phillips	PJM Interconnection	None
David Aitoro	Voltus, Inc.	Other Supplier
David Anders	PJM Interconnection	None
David Ellis	Public Service Electric & Gas Company	Transmission Owner
David Egan	PJM Interconnection	None
David Hastings	MICS	None
David Mabry	McNees Wallace & Nurick LLC	None
David Schmitt	New Jersey Board of Public Utilities	None
Diane Janicki	Boston Energy Trading and Marketing LLC	Other Supplier
Donnie Bielak	PJM Interconnection	None
Ed Stein	Ohio Edison Company	Electric Distributor
Elizabeth Davis	PJM Interconnection	None
Emily Orvis	Voltus, Inc.	Other Supplier
Emma Nix	Jersey Green Energy LLC	Other Supplier
Eric Hsia	PJM Interconnection	None
Erik Hanser	Michigan Public Service Commission	None
Evan Pierce	Amazon Energy LLC	Other Supplier
Evan Syers	Daymark Energy Advisors	None
Farrokh Rahimi	Open Access Technology International, Inc.	None
Flora Flygt	American Transmission Company, LLC	None
Gary Hartman	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner
George Beam	PPL Elec Utilities Corp dba PPL Utilities (PPL POLR Small C&I)	Transmission Owner
George Fee	Appalachian Power Company (AEP Generation)	Transmission Owner

George Kogut	New York Power Authority	Other Supplier
Gerald Warchol	Dominion Virginia Power (EDC)	Transmission Owner
Gerit Hull	American Municipal Power, Inc.	Electric Distributor
Gina Jardot	NRG Curtailment Solutions, Inc.	Other Supplier
Glen Boyle	PJM Interconnection	None
Greg Geller	Enel X North America, Inc.	Other Supplier
Greg Poulos	CAPS	None
Guy Filomena	Customized Energy Solutions, Ltd.	None
Heather Svenson	Public Service Electric & Gas Company	Transmission Owner
Ilya Slutsker	Open Access Technology International, Inc.	None
Ilyana Dropkin	PJM Interconnection	None
Jacqueline Walker	Duke Energy Business Services LLC	Transmission Owner
James McAnany	PJM Interconnection	None
Janell Fabiano	PJM Interconnection	None
James Davis	Dominion Energy Generation Marketing, Inc.	Generation Owner
James Mirabile	Baltimore Gas and Electric Company	Transmission Owner
James Rouland	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner
James Sorrels	AEP Appalachian Transmission Company, Inc.	Transmission Owner
James Tobia	American Transmission Systems, Inc.	Transmission Owner
Jason Hathcock	Strata Solar	None
Jeff Baker	Duke Energy Ohio, Inc.	Transmission Owner
Jeff Dennis	Advanced Energy Economy Inc.	None
Jim Waight	Siemens Energy, Inc.	None

Jeffrey Whitehead	GT Power Group	None
Jennifer Hohenshilt	Talen Energy Marketing, LLC	Generation Owner
Jim Reilly	Reilly Associates	None
John Borkoski	MD Public Service Commission	None
John Brodbeck	EDP Renewables North America LLC	Generation Owner
John Horstmann	Dayton Power & Light Company (The)	Transmission Owner
John Peoples	Duquesne Light Company	Transmission Owner
John Rohrbach	Wabash Valley Power Association, Inc.	Electric Distributor
John Rostock	American Transmission Systems, Inc.	Transmission Owner
Jonathan Sasser	Customized Energy Solutions, Ltd.	None
Joseph DeLosa	New Jersey Board of Public Utilities	None
Joseph Polka	Duquesne Light Company	Transmission Owner
Joe Sullivan	Sempra Global	None
Julian Echeverri	Opdenergy	None
Kalyan Chilukuri	Power System Consultants	None
Katherine Legates	Appalachian Power Company (AEP Generation)	Transmission Owner
Kathleen Wehnes	Maryland Department of the Environment	None
Kelsi Jewell ES	Dominion Virginia Power	Transmission Owner
Ken Schuyler	PJM Interconnection	None
Kenneth Curtis	Drilling Info, Inc.	None
Kenneth Foladare	Geenex Solar LLC	Other Supplier
Kenneth Schisler	Enerwise Global Technologies, LLC	Other Supplier

Kevin Thundiyl	Exelon Generation Co., LLC (NEV_XLON)	Generation Owner
Keyur Patel	PJM Interconnection	None
Kristin Swenson	Midcontinent Independent Sys Op, Inc. (CTS)	None
Lisa Rouse	American Transmission Systems, Inc.	Transmission Owner
Luke Fishback	Affirmed Energy	Other Supplier
Luke Granstrand	Dominion Virginia Power	Transmission Owner
Lynn Marie Horning	Customized Energy Solutions, Ltd.	None
Madalyn Beban	PJM Interconnection	None
Mahila Christopher	Public Utilities Commission of Ohio	None
Mamadou Diong	Dominion Virginia Power	Transmission Owner
Mark Smith	AEP Energy Partners, Inc. (AEP Retail)	Transmission Owner
Marlena Gouin	Pennsylvania Electric Company	Electric Distributor
MD Sakib	Rockland Electric Company	Transmission Owner
Melissa Pilon	PJM Interconnection	None
Michael Bryson	PJM Interconnection	None
Michael Gahimer	Indiana Office of Utility Consumer Counselor (IN OUCC)	
Michael Purdie	Dominion Virginia Power	Transmission Owner
Michele Somerday	American Transmission Systems, Inc.	Transmission Owner
Michelle Farhat	PJM Interconnection	None
Mike Nester	Dominion Virginia Power (EDC)	Transmission Owner
Mike Thorn	American Transmission Systems, Inc.	Transmission Owner

Mohan Chakragiri	ENGIE Energy Marketing NA, Inc. (Bluestone)	Other Supplier
Monica Jha	PCI	None
Nancy Connelly	Duke Energy Ohio, Inc.	Transmission Owner
Nathaniel Johnson	Appalachian Power Company (AEP Generation)	Transmission Owner
Nicholas Pratt	PPL Electric Utilities Corp. dba PPL Utilities (TO)	Transmission Owner
Nelson Dias III	Public Service Electric & Gas Company	Transmission Owner
Nicole Militello	PJM Interconnection	None
Paul Heitmann	New Jersey Board of Public Utilities	None
Paul McGlynn	PJM Interconnection	None
Prusha Hasan	Advanced Energy Economy Inc.	None
Rachel Elkins	American Transmission Systems, Inc.	Transmission Owner
Rajat Pungaliya	Pine Gate Renewables	None
Rebecca Hilderbrand	PJM Interconnection	None
Regan Fink	Pine Gate Renewables	None
Rehan Gilani	ConEdison Energy, Inc.	Other Supplier
Rob Smith	National Grid Renewables, LLC	None
Rory Sweeney	GT Power Group, LLC	None
Ruth Holdbrook	Northern Virginia Electric Cooperative (NOVEC)	Electric Distributor
Ryan Dolan	Dayton Power & Light Company (The)	Transmission Owner
Ryan Nice	PJM Interconnection	None
Sara Parkison	University of Delaware	None
Scott Baker	PJM Interconnection	None
Sean Chang	Shell Energy North America (US), L.P.	Other Supplier
Sean Redmond	Rockland Electric Company	Transmission Owner

Sharon Midgley	Exelon Business Services Company, LLC	Transmission Owner
Shaun Ishwanthlal	Peak Power Energy	None
Stephen Kelly	Brookfield Renewable Trading and Marketing LP (BSMH)	Other Supplier
Steve Thiel	Commonwealth Edison Company	Transmission Owner
Steven Hughes	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner
Suzanne Glatz	PJM Interconnection	None
Tarik Bensala	PJM Interconnection	None
Tamara Dzubay	ecobee	None
Terry Gates	Appalachian Power Company (AEP Generation)	Transmission Owner
Thomas Buhler	Rockland Electric Company	Transmission Owner
Thomas DeVita	PJM Interconnection	None
Thomas Hauske	PJM Interconnection	None
Timothy McInerney	Commonwealth Edison Company	Transmission Owner
Tom Hoatson	West Deptford Energy, LLC	Generation Owner
Tom Hyzinski	GT Power Group	None
Tori Walker	Pine Gate Renewables	None
Tom Rutigliano	NRDC	None
Tyler Conklin	Public Utilities Commission of Ohio	None
Vince Guntle	American PowerNet Management, L.P.	End-Use Customer
Vincent Stefanowicz	PJM Interconnection	None
Vivian Younes	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner

Wesley Walker	Dominion Virginia Power	Transmission Owner
William Jett	Duke Energy Business Services LLC	Transmission Owner
Yohannes Mariam	Office of the People's Counsel for the District of Columbia	End-Use Customer
Zachary Callen	Illinois Commerce Commission	None
Zhenyu Fan	PJM Interconnection	None