

DER and Inverter-based Resources Subcommittee

WebEx Only

October 28, 2021

9:00 a.m. – 4:00 p.m. ET

Administration (9:00 – 9:15)

1. Scott Baker opened the meeting and reviewed the agenda.
2. Hamad Ahmed reviewed the meeting participation guidelines. The minutes from EDC coordination workshop and DIRS from September were approved with 0 objections and 0 abstentions.

Order 2222 – Compliance Proposal Updates (9:15 – 12:15; 1:00 – 2:00)

3. PJM staff reviewed modifications to the DER Aggregation Market Participation Model proposal.
 - Danielle Croop, PJM, discussed order 2222 implementation timeline and PJM's guiding principles for design development. Danielle briefly reviewed DERA Jurisdiction and Interconnection topics and Market participation agreements.
 - Tim Burdis, PJM, reviewed several dispute topics and discussed whether they are adjudicated by FERC, by States or both.
 - Ryan Nice, PJM, discussed several topics around Telemetry highlighting specific values to be provided to PJM. Ryan also discussed data frequency and accuracy and reviewed a telemetry example. Ryan also discussed Cyber Security.
 - Danielle discussed outage information needed for DERA CP resources. Danielle also discussed Market Participation model, different DER Capacity capability, Energy Market model and comparison, bidding parameters available in DERA model and min/max size requirements.
 - Ed Rich III, PJM, discussed topics within Settlements.
 - Pete Langbein, PJM, reviewed DER aggregation registration and review process, DERA's approval next steps and discussed examples for registration data.
4. PJM staff reviewed updates to the compliance matrix, as well as alternatives received from stakeholders. One parking lot item was added to the matrix.


Order 2222 – Additional topics (2:00 – 3:45)

5. Madalyn Beban, PJM, provided updates on the use cases that PJM has been developing as part of its proposal.
 - Maddie discussed example of several use cases based on PJM's draft proposal presented during October DIRS on relevant topic such as Coordination, Operations, Market design, Settlements and others. Maddie reviewed seven list of use cases and thoroughly walkthrough use case 1-3.

6. PJM and stakeholders discussed calculating distribution losses for individual DER within a DERA.
 - In the interest of time, this topic was not discussed and will be brought back at the future meeting(s).

Wrap-up – Action items and next meeting agenda (3:45 – 4:00)

7. The facilitation team reviewed action items from the meeting and took requests for future agenda items.
 - Scott discussed parking lot item added to the matrix and the expectations for the upcoming meetings this year.

Future Meeting Dates and Materials			Materials Due to Secretary 	Materials Published
Date	Time	Location	5 p.m.	4 p.m.
November 9, 2021-EDC Coordination workshop	9:00 – 12:00	WebEx	November 1, 2021	November 4, 2021
November 22, 2021	9:00 – 3:00	WebEx	November 12, 2021	November 17, 2021
December 9, 2021-EDC Coordination workshop	3:00 – 5:00	WebEx	December 1, 2021	December 6, 2021
December 21, 2021	9:00 – 4:00	WebEx	December 13, 2021	December 16, 2021

Author: Hamad Ahmed

WebEx Meeting Attendance

Name	Company Name	Sector
Hamad Ahmed	PJM Interconnection	None
Melissa Alfano	Solar Energy Industry Association	
William Allen	Commonwealth Edison Company	Transmission Owner
David Anders	PJM Interconnection	None
Jeff Baker	PJM Connect	
Scott Baker	PJM Interconnection	None
George Beam	PPL Elec Utilities Corp dba PPL Utilities (PPL POLR Small C&I)	Transmission Owner
Madalyn Beban	PJM Interconnection	None
Jim Benchek	FirstEnergy Corporation	
Stephen Bennett	PJM Interconnection	None
Emanuel Bernabeu	PJM	
Aaron Berner	PJM Interconnection	None
Tyler Berton	AEP Appalachian Transmission Company, Inc.	Transmission Owner
Rajesh Bhana	Exelon Business Services Company, LLC	Transmission Owner

Donnie Bielak	PJM Interconnection	None
Michael Borgatti	PJM Committee Voting Generic Account	
John Borkoski	MD Public Service Commission	
Joe Bowring	Monitoring Analytics	
Glen Boyle	PJM Interconnection	None
Aaron Breidenbaugh	Black Dog Insights	
Aaron Breidenbaugh	Centrica Business Solutions Optimize, LLC	Other Supplier
John Brodbeck	EDP Renewables North America LLC	Generation Owner
Patrick Bruno	PJM Interconnection	None
Michael Bryson	PJM Internal	
Kevin Burns	Open Access Technology International, Inc.	None
Zachary Callen	Illinois Commerce Commission	
Bruce Campbell	Enerwise Global Technologies, LLC	Other Supplier
David Canter	Appalachian Power Company (AEP Generation)	Transmission Owner
Gregory Carmean	Organization of PJM States, Inc.	
Edrissa Cham	Savion, LLC	
Sean Chang	Shell Energy North America (US), L.P.	Other Supplier
Mahila Christopher	Public Utilities Commission of Ohio	
Nancy Connelly	Duke Energy Ohio, Inc.	Transmission Owner
James Conrad	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner
Jeff Currier ES	Dominion Virginia Power	Transmission Owner
Kerinia Cusick	Center for Renewables Integration	
Louis D'Alessandris	American Transmission Systems, Inc.	Transmission Owner
Behnam Danai	Open Access Technology International, Inc.	None
Elizabeth Davis	PJM Interconnection	None
James Davis	Dominion Energy Generation Marketing, Inc.	Generation Owner
Joseph DeLosa	New Jersey Board of Public Utilities	
Brett Denby	Northern Virginia Electric Cooperative (NOVEC)	Electric Distributor
Thomas DeVita	PJM Interconnection	None
Meredith Dibert	Pennsylvania Department of Environmental Protection	
Laura DiNicola	firstenergy	

Mamadou Diong	Dominion Virginia Power	Transmission Owner
Ryan Dolan	Dayton Power & Light Company (The) (EDC)	Transmission Owner
Christin Domian	Duquesne Light Company	Transmission Owner
Erin Donohue	Enel X North America, Inc.	Other Supplier
Sophia Dossin	Invenergy, LLC	Generation Owner
Jere Downs	PJM Connect	
Chuck Dugan	East Kentucky Power Cooperative, Inc.	Transmission Owner
Nicolae Dumitriu	PJM Interconnection	None
David Egan	PJM Interconnection	None
Rachel Elkins	American Transmission Systems, Inc.	Transmission Owner
David Ellis	Public Service Electric & Gas Company	Transmission Owner
Theresa Esterly	PJM Interconnection	None
zhenyu fan	PJM Interconnection	None
Brett Feldman	Other	
Guy Filomena	Customized Energy Solutions, Ltd.	None
Regan Fink	Pine Gate Renewables	
Luke Fishback	Affirmed Energy LLC (F3)	Other Supplier
Flora Flygt	American Transmission Company - Retired	
Kenneth Foladare	Geenex Solar LLC	Other Supplier
Sheila Foley	PJM Interconnection	None
Adrien Ford	Old Dominion Electric Cooperative	Electric Distributor
Denise Foster Cronin	East Kentucky Power Cooperative, Inc.	Transmission Owner
Darrell Frogg	PJM Interconnection	None
Christian Fuess	PBF Power Marketing, LLC	Generation Owner
Bryan Garnett	Duke Energy Ohio, Inc.	Transmission Owner
Jill Gates	PJM Interconnection	
Terry Gates	Appalachian Power Company (AEP Generation)	Transmission Owner
Rehan Gilani	ConEdison Energy, Inc.	Other Supplier
Suzanne Glatz	PJM Interconnection	None
Craig Glazer	PJM Interconnection	None

Michele Greening	PJM Interconnection	None
Gary Greiner	PSEG Energy Resources and Trade LLC	Other Supplier
Jeffrey Guistwhite	PJM Interconnection	
Erik Hanser	Michigan Public Service Commission	
Gary Hartman	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner
Prusha Hasan	Advanced Energy Economy	
David Hastings	PJM Committee Voting Generic Account	
Jason Hathcock	Strata Solar	
Thomas Hauske	PJM Interconnection	None
Frederick Heinle	Office of the Peoples Counsel	
Suzanne Herel	PJM Interconnection	None
Rebecca Hilderbrand	EY	
Tom Hoatson	West Deptford Energy, LLC	Generation Owner
Phil Hoffer	Appalachian Power Company (AEP Transmission)	Transmission Owner
Jennifer Hohenshilt	Talen Energy Marketing, LLC	Generation Owner
Lynn Marie Horning	Customized Energy Solutions, Ltd.	None
John Horstmann	Dayton Power & Light Company (The)	Transmission Owner
Steven Hughes	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner
Gerit Hull	American Municipal Power, Inc.	Electric Distributor
Andrew Hunter	Metropolitan Edison Company (Transmission)	Electric Distributor
Benjamin Hunter	BSHunter	
Tom Hyzinski	GT Power Group, LLC	None
Arthur Iler	Indiana Office of Utility Consumer Counselor	
Ali Ipakchi	Open Access Technology International, Inc.	None
Farhad Jamshidian	OSI Digital Grid Solutions	
Diane Janicki	Boston Energy Trading and Marketing LLC	Other Supplier
Gina Jardot	NRG Curtailment Solutions, Inc.	Other Supplier
William Jett	Duke Energy Business Services LLC	Transmission Owner
Bethany Johnson	PPL Electric Utilities Corp. dba PPL Utilities (TO)	Transmission Owner
Carl Johnson	Customized Energy Solutions, Ltd.	None
Nathaniel Johnson	Appalachian Power Company (AEP Generation)	Transmission Owner

David Johnston	Other	
Ryan Jones	Allegheny Electric Cooperative, Inc.	Electric Distributor
Ibrahima Kalle	Tibiri Energy Group	
Clark Kaml	Power System Engineering	
Brian Kauffman	Enel X North America, Inc.	Other Supplier
Samuel Kayne	Delaware PSC	
Hamid Kazerooni	PJM Interconnection	
Stephen Kelly	Brookfield Renewable Trading and Marketing LP (BSMH)	Other Supplier
Bakhtawar Khan	Jersey Green Energy LLC	Other Supplier
Matthew King	GDS	
Brady Klein	EnergyHub	
Nicolas Koehler	Appalachian Power Company (AEP Transmission)	Transmission Owner
Alexandria Koeplinger	Michigan Public Service Commission	
George Kogut	New York Power Authority	Other Supplier
Katherine Legates	Appalachian Power Company (AEP Generation)	Transmission Owner
David Leventhal	Dayton Power & Light Company (The) (EDC)	Transmission Owner
Cecilia Liang-Nicol	Allegheny Power (MonPwr Gen)	
Steven Lieberman	American Municipal Power, Inc.	Electric Distributor
Camille Littlefield	AMP Solar US Services, LP.	
CONNIE LOWE	Dominion Virginia Power	Transmission Owner
Leonid Lyakhovich	Public Service Electric & Gas Company	Transmission Owner
David Mabry	McNees Wallace & Nurick LLC	
Yohannes Mariam	Office of the People's Counsel for the District of Columbia	
Valerie martin	Federal Energy Regulatory Commission	
Doug Matheson	Enel X North America, Inc.	Other Supplier
Brian McArdle	NextEra Energy Marketing, LLC	Other Supplier
John McCombIII	PJM Interconnection	None
Christian McDewell	Pennsylvania Public Utility Commission	
Paul McGlynn	PJM Interconnection	None
Timothy McInerney	Commonwealth Edison Company	Transmission Owner
Justin McNeil	Kentucky Public Service Commission	
Sharon Midgley	Exelon Business Services Company, LLC	Transmission Owner

Terrence Moran	Public Service Electric & Gas Company	Transmission Owner
Colin Mount	Trans-Allegheny Interstate Line Company	Transmission Owner
Nancy Muhl	PJM Interconnection	None
Koushy Nareshkumar	Potomac Electric Power Company	Electric Distributor
Mike Nester	Dominion Virginia Power (EDC)	Transmission Owner
Nathaniel Nichols	PECO Energy Company	Transmission Owner
Emma Nix	Jersey Green Energy LLC	Other Supplier
Chris Norton	American Municipal Power, Inc.	Electric Distributor
Michael Olaleye	PJM Interconnection	None
Brock Ondayko	AEP Energy Partners, Inc. (AEP Gen Resources)	Transmission Owner
Amanda Parker	Pennsylvania Electric Company	Electric Distributor
Sara Parkison	University of Delaware	
keyurbhai patel	PJM Interconnection	None
james pigeon	New York ISO	
Christopher Pilong	PJM Interconnection	None
Melissa Pilong	PJM Interconnection	None
Joseph Polka	Duquesne Light Company (ARS)	Transmission Owner
Greg Poulos	PJM Committee Voting Generic Account	
Salil Pradhan	Salil LLC	
Nicholas Pratt	PPL Electric Utilities Corp. dba PPL Utilities (TO)	Transmission Owner
Ruth Price	Delaware Division of the Public Advocate	
Rajat Pungaliya	Pine Gate Mid-Atlantic, LLC	
Farrokh Rahimi	Open Access Technology International, Inc.	None
John Rainey	Northern Virginia Electric Cooperative (NOVEC)	Electric Distributor
Samuel Ramos	University of Delaware	
Wanda Reder	PPL	
Jim REILLY	Reilly Associates	
Tomas Rodriguez	Organization of PJM States, Inc.	
John Rohrbach	Wabash Valley Power Association, Inc.	Electric Distributor

Alexa Rooney	PPL Electric Utilities Corp. dba PPL Utilities (TO)	Transmission Owner
Alex Rosenblatt	Duquesne Light Company	Transmission Owner
James Rouland	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner
Amanda Rumsey	PPL Electric Utilities Corp. dba PPL Utilities (TO)	Transmission Owner
Jonathan Sasser	Customized Energy Solutions, Ltd.	None
David Scarp	Calpine Energy Services, L.P.	Generation Owner
David Scarpignato	Calpine Energy Services, L.P.	Generation Owner
David Schmitt	New Jersey Board Of Public Utilities	
David Schweizer	PJM Interconnection	
Bahaa Seireg	Rockland Electric Company	Transmission Owner
William Sharkazy III	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner
Evan Shearer	Duke Energy Business Services LLC	Transmission Owner
Mohit Singh	Commonwealth Edison Company	Transmission Owner
Mark Smith	AEP Energy Partners, Inc. (AEP Retail)	Transmission Owner
James Sorrels	AEP Appalachian Transmission Company, Inc.	Transmission Owner
Vincent Stefanowicz	PJM Interconnection	None
Ed Stein	Ohio Edison Company	Electric Distributor
Alexander Stern	Public Service Electric & Gas Company	Transmission Owner
Heather Svenson	Public Service Electric & Gas Company	Transmission Owner
Brad Swalwell	Tangent Energy Solutions, Inc.	Other Supplier
Rory Sweeney	GT Power Group, LLC	None
Kristin Swenson	Midcontinent Independent Sys Op, Inc. (CTS)	
Ryan Thompson	Metis Energy, LLC	None
Kevin Thundiyil	Exelon Generation Co., LLC (NEV_XLON)	Generation Owner
Shilpa Toppo	174 Power Global	
Jed Trott	David Energy Supply, LLC	Other Supplier
Catherine Tyler	Monitoring Analytics	

Jim Waight	Siemens Industry, Inc.	Other Supplier
Tori Walker	Pine Gate Mid-Atlantic, LLC	
Jerry Warchol	Dominion Virginia Power (EDC)	Transmission Owner
John Webster	Ictec.com, Inc.	Other Supplier
Kathleen Wehnes	Maryland Department of the Environment	
Christopher Wehr	Ohio Edison Company (EDC)	Electric Distributor
Christopher Werner	Appalachian Power Company (AEP Transmission)	Transmission Owner
Matthew Wharton	Guidehouse Inc.	None
Brett White	Pine Gate Mid-Atlantic, LLC	Other Supplier
Jeffrey Whitehead	GT Power Group	
Bernie Whitmoyer	Jersey Central Power & Light Company	Transmission Owner
Amy Willey	Delaware Public Service Commission	
Fernie Williams	East Kentucky Power Cooperative, Inc.	Transmission Owner
Emily Wilmoth ES	Dominion Virginia Power	Transmission Owner
De Andre Wilson	Maryland Public Service Commission	
Megan Wisersky	Madison Gas & Electric Co.	Other Supplier
Damon Xenopoulos	Other	
Andrea Yeaton	PJM Interconnection	None
Kyungjin Yoo	Monitoring Analytics	
Vivian Younes	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner
Mike Zhang	PJM Interconnection	None

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