

## DER and Inverter-based Resources Subcommittee

WebEx Only

December 21, 2021

9:00 a.m. – 4:00 p.m. ET

### Administration (9:00 – 9:05)

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

### Order 2222 – Compliance Filing – Draft Tariff Review (9:05 – 3:30)

3. Thomas DeVita, PJM, will reviewed the draft governing document language associated with PJM's compliance filing.
  - Thomas reviewed several new Operating Agreement definitions such as Aggregated DER, DER Aggregator, DER Aggregation Resource, DER Capacity Aggregation Resource and DER Aggregator Participation Model.
  - Thomas discussed the DER Aggregator Participation Model and the associated information a DER Aggregator would be required to submit. Thomas also discussed the 60 day registration and review process conducted by the EDCs and the ramifications of identified concerns not resolved within 60 day period.
  - Thomas also touched on several key topics within the DER Participation Model such as Pnode, Day-ahead Energy Market and Real-time Energy Market based on bidding parameters, telemetry, bidding parameters, override, participation in the PJM energy, capacity and/or ancillary services Market, Day-ahead Energy Market must-offer requirements, MOPR floor offer price, Market Seller Offer Cap and load reduction resources.
  - Danielle Croop, PJM, reviewed RAA revisions on Planned DER Capacity Aggregation Resource, DER Capacity Aggregation Resource Sell Offer Plan, Existing DER Capacity Aggregation Resource, DER aggregator Officer Certification Form and RAA, Schedule 6.2.

### Order 2222 – Compliance Proposal (3:30 – 3:55)

4. Donnie Bielak, PJM, will present follow-up to a request for an example of nodal impacts for a given constraint.
  - Item deferred due to time constraint.
5. Ed Rich, PJM, will review settlement requirements, a DERA settlement example, and discuss feedback from stakeholders.
  - Item deferred due to time constraint.


6. Danielle Croop, PJM, reviewed draft implementation timeline for DER Aggregation market participation.
  - Danielle discussed the estimated implementation timeline for Marke-related milestones starting from the compliance filing submission on February 1, 2022 up to the 2026/2027 delivery year in year 2026.

### Order 2222 – Use Cases

7. Madelyn Beban, PJM, will present updates to DER use cases.
  - Item deferred due to time constraint.

### Wrap-up and Action items (3:55 – 4:00)

8. The facilitation team will reviewed action items from the meeting and took requests for future agenda items.
  - Stakeholders are requested to provide tariff redline changes to the DIRS team by Monday, 01/03/2022, but no later than Friday, 01/07/2022.

<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>January 5, 2022</i>	9:00 – 3:00	WebEx	<b>December 27, 2021</b>	<b>December 30, 2021</b>
<i>January 7, 2022 – EDC Coordination Workshop</i>	1:00 – 4:00	WebEx	<b>December 29, 2021</b>	<b>January 4, 2022</b>
<i>January 18, 2022</i>	9:00 – 12:00	WebEx	<b>January 7, 2022</b>	<b>January 12, 2022</b>
<i>February 25, 2022</i>	9:00 – 4:00	WebEx	<b>February 16, 2022</b>	<b>February 22, 2022</b>
<i>March 28, 2022</i>	9:00 – 4:00	WebEx	<b>March 18, 2022</b>	<b>March 23, 2022</b>
<i>April 29, 2022</i>	9:00 – 4:00	WebEx	<b>April 22, 2022</b>	<b>April 27, 2022</b>
<i>May 31, 2022</i>	9:00 – 4:00	WebEx	<b>May 23, 2022</b>	<b>May 26, 2022</b>
<i>June 23, 2022</i>	9:00 – 4:00	WebEx	<b>June 15, 2022</b>	<b>June 20, 2022</b>

Author: Hamad Ahmed

### WebEx Meeting Attendance

Name	Company Name	Sector
Syed Ahmad	Federal Energy Regulatory Commission	
Hamad Ahmed	PJM Interconnection	None
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	
Emanuel Bernabeu	PJM	
Tyler Berton	AEP Appalachian Transmission Company, Inc.	Transmission Owner
Rajesh Bhana	Exelon Business Services Company, LLC	Transmission Owner
Donnie Bielak	PJM Interconnection	None
John Borkoski	MD Public Service Commission	
Joe Bowring	Monitoring Analytics	
Glen Boyle	PJM Interconnection	None
Aaron Breidenbaugh	Centrica Business Solutions Optimize, LLC	Other Supplier
John Brodbeck	EDP Renewables North America LLC	Generation Owner
Michael Bryson	PJM Internal	
Thomas Buhler	PJM Connect	
Kevin Burns	Open Access Technology International, Inc.	None
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
Iker Chocarro Aguirrebengoa	RWE Renewables Americas, LLC	Generation Owner
Mahila Christopher	Public Utilities Commission of Ohio	
Roseanne Circelli	Public Service Electric & Gas Company	Transmission Owner
Tyler Cline	East Point Energy	
Chandra Colaresi	Enerwise Global Technologies, LLC	Other Supplier
James Conrad	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner
Danielle Croop	PJM Interconnection	None

Jeff Currier ES	Dominion Virginia Power	Transmission Owner
Kerinia Cusick	Center for Renewables Integration	
Louis D'Alessandris	American Transmission Systems, Inc.	Transmission Owner
Elizabeth Davis	PJM Interconnection	None
James Davis	Dominion Energy Generation Marketing, Inc.	Generation Owner
Joseph DeLosa	New Jersey Board of Public Utilities	
Thomas DeVita	PJM Interconnection	None
Laura DiNicola	firstenergy	
Mamadou Diong	Dominion Virginia Power	Transmission Owner
Nicholas Disciullo	PJM Interconnection	None
Ryan Dolan	Dayton Power & Light Company (The) (EDC)	Transmission Owner
Christin Domian	Duquesne Light Company	Transmission Owner
Jere Downs	PJM Connect	
Rick Drom	Rick Drom	
Chuck Dugan	East Kentucky Power Cooperative, Inc.	Transmission Owner
Nicolae Dumitriu	PJM Interconnection	None
Subbarao Eedupuganti	PJM Interconnection	
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
Flora Flygt	American Transmission Company - Retired	
Kenneth Foladare	Geenex Solar LLC	Other Supplier
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	End-Use Customer

Peter Fuller	Autumn Lane Energy Consulting LLC	
Betty Fung	Recurrent Energy, LLC	Other Supplier
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
Albert Grisolia	Public Service Electric & Gas Company	Transmission Owner
Vince Guntle	American PowerNet Management, L.P.	End-Use Customer
Erik Hanser	Michigan Public Service Commission	
Gary Hartman	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner
Prusha Hasan	Advanced Energy Economy	
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
Inwook Hwang	Baltimore Gas and Electric Company	Transmission Owner
Tom Hyzinski	gtpghyzinsk	
Arthur Iler	Indiana Office of Utility Consumer Counselor	
Ali Ipakchi	Open Access Technology International, Inc.	None
Farhad Jamshidian	OSI Digital Grid Solutions	

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	
Ibrahima Kalle	POWER Engineers, Inc	
Clark Kaml	Power System Engineering	
Brian Kauffman	Enel X North America, Inc.	Other Supplier
Samuel Kayne	Delaware PSC	
Stephen Kelly	Brookfield Renewable Trading and Marketing LP (BSMH)	Other Supplier
Janessa Kent	Duquesne Light Company	Transmission Owner
Bakhtawar Khan	Jersey Green Energy LLC	Other Supplier
David Kimmel	PJM Interconnection	None
Brady Klein	EnergyHub	
Pamela Knotts	Delaware Public Service Commission Staff	
George Kogut	New York Power Authority	Other Supplier
Andrew Levitt	PJM Interconnection	None
Cecilia Liang-Nicol	Allegheny Power (MonPwr Gen)	
Xi Lu	Ford Motor Company	
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
Katharine McCormick	Illinois Commerce Commission	
Christian McDowell	Pennsylvania Public Utility Commission	
Susan McGill	PJM Interconnection	None
Timothy McInerney	Commonwealth Edison Company	Transmission Owner
Justin McNeil	Kentucky Public Service Commission	
John Metz	University of Delaware	

Sharon Midgley	Exelon Business Services Company, LLC	Transmission Owner
John Miller	Calico Energy	
Terrence Moran	Public Service Electric & Gas Company	Transmission Owner
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
Cynthia Nowell	Potomac Electric Power Company	Electric Distributor
James Okenfuss	Savion, LLC	
Michael Olaley	PJM Interconnection	None
Brock Ondayko	AEP Energy Partners, Inc. (AEP Gen Resources)	Transmission Owner
Greg Pakela	DTE Energy Trading, Inc.	Other Supplier
Amanda Parker	Pennsylvania Electric Company	Electric Distributor
Sara Parkison	University of Delaware	
John Peoples	Duquesne Light Company	Transmission Owner
Darlene Phillips	PJM Interconnection	None
Joseph Polka	Duquesne Light Company	Transmission Owner
Greg Poulos	PJM Committee Voting Generic Account	
Nicholas Pratt	PPL Electric Utilities Corp. dba PPL Utilities (TO)	Transmission Owner
Ruth Price	Delaware Division of the Public Advocate	
Jason Proconiar	Buckeye Power, Inc.	Electric Distributor
Farrokh Rahimi	Open Access Technology International, Inc.	None
John Rainey	Northern Virginia Electric Cooperative (NOVEC)	Electric Distributor
Ryann Reagan	New Jersey Board of Public Utilities	
Jim REILLY	Reilly Associates	
Temujin Roach	EDF Renewable Development, Inc.	

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
Kenneth Schisler	Enerwise Global Technologies, LLC	Other Supplier
David Schmitt	New Jersey Board Of Public Utilities	
CONNIE SCHROEDER	Dominion Virginia Power	Transmission Owner
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
Zachary Stines	Borrego Solar	
Heather Svenson	Public Service Electric & Gas Company	Transmission Owner
Brad Swalwell	Tangent Energy Solutions, Inc.	Other Supplier
Eric Swanger	Appalachian Power Company (AEP Transmission)	Transmission Owner
Rory Sweeney	GT Power Group, LLC	None



Kristin Swenson	Midcontinent Independent Sys Op, Inc. (CTS)	
Phaedra Taiarol	Other	
Robert Taylor	Commonwealth Edison Company	Transmission Owner
Zelalem Tekle	Bath County Energy, LLC	Generation Owner
Kevin Thundiyl	Exelon Generation Co., LLC (NEV_XLON)	Generation Owner
Andrea Tighe	CAPS	
James Tobia	Jersey Central Power & Light Company	Transmission Owner
Jed Trott	David Energy Supply, LLC	Other Supplier
Catherine Tyler	Monitoring Analytics	
Jim Waight	Siemens Industry, Inc.	Other Supplier
Jacqueline Walker	Duke Energy Carolinas, LLC	Other Supplier
Jerry Warchol	Dominion Virginia Power (EDC)	Transmission Owner
Luan Watson	Potomac Electric Power Company	Electric Distributor
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
Jeffrey Whitehead	GT Power Group	
Bernie Whitmoyer	Jersey Central Power & Light Company	Transmission Owner
Rob Whitworth	Duke Energy Business Services LLC	Transmission Owner
Amy Willey	Delaware Public Service Commission	
De Andre Wilson	Maryland Public Service Commission	
Damon Xenopoulos	Other	
Andrea Yeaton	PJM Interconnection	None
Jin An Yi	jinan	
Michael Yoder	RTO Insider	
Kyungjin Yoo	Monitoring Analytics	
Vivian Younes	PPL Electric Utilities Corp. dba PPL Utilities (LSE)	Transmission Owner

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