

DER and Inverter-based Resources Subcommittee

WebEx Only

September 24, 2021

9:00 a.m. – 4:00 p.m. ET

Administration (9:00 – 9:15)

1. Scott Baker, PJM, opened the meeting and reviewed the agenda.
2. Hamad Ahmed, PJM, reviewed the meeting participation guidelines. The meeting minutes from August 16 and August 17 DIRS were approved with 0 objections and 0 abstentions.

Order 2222 – Stakeholder Feedback on PJM Staff Proposal (9:15 – 11:15)

3. IMM presented feedback on the PJM straw proposal.
 - Catherine Tyler, Monitoring Analytics, reviewed response to PJM proposal for Order 2222. Catherine discussed PJM's need to have accurate information for the registration process and several potential issues within the PJM proposal. Catherine also discussed the need to have a maximum size requirement for DERs in DERA's.
 - Catherine discussed their input on modeling impact factor and reviewed an example between PJM and RT scenario. Catherine also discussed Monitoring Analytics input on DR with injection in DERA and potential dual role of EDC's.
4. PJM Staff reviewed updates to the PJM proposal in the matrix.
 - Danielle Croop, PJM, reviewed several redline changes to the matrix following discussion from August DIRS meetings.
 - Jeff Dennis, AEE, reviewed alternative approach to several topics within the matrix.
 - A post meeting matrix was posted on the DIRS page with the changes.

Order 2222 – Use Case Discussion (11:30 – 12:15)

5. Madalyn Beban, PJM, provided updates on the use cases that PJM has been developing as part of its proposal.
 - Madalyn reviewed different topics that were incorporated following feedback from Stakeholders and discussed several other key topics seeking feedback from Stakeholders. Madalyn reviewed use case characteristics, different DER types and a table highlighting two use cases consolidated into one. Madalyn also presented examples of five different use cases.


Order 2222 – DER / DERA Registration and Review Process (12:45 – 1:30)

6. Danielle Croop, PJM, reviewed draft considerations for the DER and DER Aggregation registration and review process.

- Danielle reviewed roles and responsibilities of RERRA, Aggregator, EDC, PJM and LSE during the DERA registration process and also reviewed flow diagram for 60 days registration and review process.

Wrap-up – Action items and next meeting agenda (1:30 – 1:45)

7. The facilitation reviewed action items from the meeting and took requests for future agenda items.

| Future Meeting Dates and Materials | | | Materials Due to Secretary  | Materials Published |
|--|-------------|----------|--|---------------------|
| Date | Time | Location | 5 p.m. | 4 p.m. |
| October 28, 2021 | 9:00 – 4:00 | WebEx | October 20, 2021 | October 25, 2021 |
| November 9, 2021-EDC Coordination workshop | 3:00 – 5:00 | 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 |
| Malcolm Ainspan | NRG Curtailment Solutions, Inc. | Other Supplier |
| Melissa Alfano | Solar Energy Industry Association | |
| William Allen | Commonwealth Edison Company | Transmission Owner |
| David Anders | PJM Interconnection | None |
| Jared Anderson | American Transmission Company - Retired | |
| todd aquino | Pine Gate Mid-Atlantic, LLC | |
| 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 |

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|-----------------------------|--|--------------------|
| Sudipto Bhowmik | Burns and McDonnell | |
| 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 |
| John Brodbeck | EDP Renewables North America LLC | Generation Owner |
| Patrick Bruno | PJM Interconnection | None |
| Michael Bryson | PJM Internal | |
| Thomas Buhler | PJM Connect | |
| Tim Burdis | PECO Energy Company | Transmission Owner |
| Tim Burdis | PJM Interconnection | None |
| Jennifer Burke | Guidehouse Inc. | None |
| Kevin Burns | Open Access Technology International, Inc. | None |
| Michelle Butler | Guidehouse | |
| 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. | |
| Onyinye Caven | Salil LLC | |
| Edrissa Cham | Savion, LLC | |
| Sean Chang | Shell Energy North America (US), L.P. | Other Supplier |
| Iker Chocarro Aguirrebengoa | RWE Renewables Americas, LLC | Generation Owner |
| Wonbae Choi | Samsung Renewable Energy Inc. | |
| Mahila Christopher | Public Utilities Commission of Ohio | |
| Roseanne Circelli | Public Service Electric & Gas Company | Transmission Owner |
| Stephen Thiel ComEd | PJM Connect | |
| Nancy Connelly | Duke Energy Ohio, Inc. | Transmission Owner |
| Billy Coyle | Dominion Virginia Power | Transmission Owner |
| Thomas Cremer | Centrica Business Solutions Optimize, LLC | Other Supplier |

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| Danielle Croop | PJM Interconnection | None |
| | | Transmission Owner |
| Jeff Currier ES | Dominion Virginia Power | |
| | | Transmission Owner |
| Louis D'Alessandris | American Transmission Systems, Inc. | |
| | | Transmission Owner |
| Padmaja Dasari | Dayton Power & Light Company (The) (EDC) | |
| Elizabeth Davis | PJM Interconnection | None |
| | | Generation Owner |
| James Davis | Dominion Energy Generation Marketing, Inc. | |
| Joseph DeLosa | New Jersey Board of Public Utilities | |
| Nancy Demers | Kentucky Public Service Commission | |
| | | Electric Distributor |
| Brett Denby | Northern Virginia Electric Cooperative (NOVEC) | |
| Thomas DeVita | PJM Interconnection | None |
| Meredith Dibert | Pennsylvania Department of Environmental Protection | |
| Laura DiNicola | firstenergy | |
| | | Transmission Owner |
| Mamadou Diong | Dominion Virginia Power | |
| Nicholas Disciullo | PJM Interconnection | None |
| | | Transmission Owner |
| Christin Domian | Duquesne Light Company | |
| | | Other Supplier |
| Erin Donohue | Enel X North America, Inc. | |
| Jere Downs | PJM Connect | |
| Ilyana Dropkin | PJM Interconnection | None |
| | | Transmission Owner |
| Chuck Dugan | East Kentucky Power Cooperative, Inc. | |
| Nicolae Dumitriu | PJM Interconnection | None |
| | | Transmission Owner |
| Rachel Elkins | American Transmission Systems, Inc. | |
| | | Transmission Owner |
| David Ellis | Public Service Electric & Gas Company | |
| Christine Ericson | Illinois Commerce Commission | |
| zhenyu fan | PJM Interconnection | None |
| | | |
| Brett Feldman | Other | |
| Guy Filomena | Customized Energy Solutions, Ltd. | None |
| | | |
| Daniel Fipke | 174 Power Global | |
| Brian Fitzpatrick | PJM Interconnection | None |
| | | Other Supplier |
| Kenneth Foladare | Geenex Solar LLC | |

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| | | Electric Distributor |
| Adrien Ford | Old Dominion Electric Cooperative | |
| | | Transmission Owner |
| Denise Foster Cronin | East Kentucky Power Cooperative, Inc. | |
| Darrell Frogg | PJM Interconnection | None |
| | | Generation Owner |
| Christian Fuess | PBF Power Marketing, LLC | |
| | | Other Supplier |
| Janice Fuller | NextEra Energy Marketing, LLC | |
| Michael Gahimer | Indiana Office of Utility Consumer Counselor (IN OUCC) | |
| Jill Gates | PJM Interconnection | |
| | | Transmission Owner |
| Terry Gates | Appalachian Power Company (AEP Generation) | |
| Ike Gibbs | ibvenergy partners llc | |
| | | Other Supplier |
| Rehan Gilani | ConEdison Energy, Inc. | |
| Suzanne Glatz | PJM Interconnection | None |
| Craig Glazer | PJM Interconnection | None |
| Walter Graf | Banpu North America | |
| | | Transmission Owner |
| Luke Granstrand | Dominion Virginia Power | |
| Michele Greening | PJM Interconnection | None |
| | | Other Supplier |
| Gary Greiner | PSEG Energy Resources and Trade LLC | |
| | | Transmission Owner |
| Garan Gunn | Public Service Electric & Gas Company | |
| | | End-Use Customer |
| Vince Guntle | American PowerNet Management, L.P. | |
| Howard Haas | Monitoring Analytics | |
| Erik Hanser | Michigan Public Service Commission | |
| | | Transmission Owner |
| Gary Hartman | PPL Electric Utilities Corp. dba PPL Utilities (LSE) | |
| Prusha Hasan | Advanced Energy Economy | |
| David Hastings | PJM Committee Voting Generic Account | |
| Jason Hathcock | Strata Solar | |
| Thomas Hauske | PJM Interconnection | None |
| | | Other Supplier |
| Hassan Hayat | Siemens Industry, Inc. | |
| Frederick Heinle | Office of the Peoples Counsel | |
| Suzanne Herel | PJM Interconnection | None |
| | | Generation Owner |
| Tom Hoatson | West Deptford Energy, LLC | |

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| | | Generation Owner |
| Jennifer Hohenshilt | Talen Energy Marketing, LLC | |
| Nels Hoplin | Trans-Allegheny Interstate Line Company | Transmission 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 |
| Benjamin Hunter | BSHunter | |
| Tom Hyzinski | gtphyzinsk | |
| 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 |
| Augustus Johnson | Dominion Virginia Power (EDC) | Transmission Owner |
| Carl Johnson | Customized Energy Solutions, Ltd. | None |
| Nathaniel Johnson | Appalachian Power Company (AEP Generation) | Transmission Owner |
| David Johnston | Other | |
| Ibrahima Kalle | Tibiri Energy Group | |
| Brian Kauffman | Enel X North America, Inc. | Other Supplier |
| Samuel Kayne | Delaware PSC | |
| Stephen Kelly | Brookfield Renewable Trading and Marketing LP (BSMH) | Other Supplier |
| Kevin Kilgallen | Avangrid Renewables, LLC | Generation Owner |
| Nicolas Koehler | Appalachian Power Company (AEP Transmission) | Transmission Owner |
| Alexandria Koeplinger | Michigan Public Service Commission | |
| George Kogut | New York Power Authority | Other Supplier |
| Dimitar Kozuharov | State Commissions | |
| Katherine Legates | Appalachian Power Company (AEP Generation) | Transmission Owner |
| Cecilia Liang-Nicol | Allegheny Power (MonPwr Gen) | |

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| | | Electric Distributor |
| Steven Lieberman | American Municipal Power, Inc. | |
| David Lopez | Center for Renewables Integration | |
| CONNIE LOWE | Dominion Virginia Power | Transmission Owner |
| Leonid Lyakhovich | Public Service Electric & Gas Company | Transmission Owner |
| David Mabry | McNees Wallace & Nurick LLC | |
| Anthony Madonna | EnergyHub | |
| Angelo Marcino | PJM Interconnection | None |
| Yohannes Mariam | Office of the People's Counsel for the District of Columbia | |
| | | Generation Owner |
| Timothy Martin | Green River Holdings, LLC | |
| Ray MASON | Other | |
| | | Other Supplier |
| Doug Matheson | Enel X North America, Inc. | |
| John McCombIII | PJM Interconnection | None |
| Katharine McCormick | Illinois Commerce Commission | |
| Ken McCracken | Reliability First | |
| Steve McElwee | PJM Interconnection | None |
| Paul McGlynn | PJM Interconnection | None |
| | | Transmission Owner |
| Timothy McInerney | Commonwealth Edison Company | |
| Allison Mensik | University of Delaware | |
| | | Transmission Owner |
| Sharon Midgley | Exelon Business Services Company, LLC | |
| | | Transmission Owner |
| Mike Nester | Dominion Virginia Power (EDC) | |
| Ryan Nice | PJM Interconnection | |
| | | Other Supplier |
| Emma Nix | Jersey Green Energy LLC | |
| | | Electric Distributor |
| Chris Norton | American Municipal Power, Inc. | |
| Brent Oberlin | Plus Power | |
| | | Transmission Owner |
| Brock Ondayko | AEP Energy Partners, Inc. (AEP Gen Resources) | |
| Sara Parkison | University of Delaware | |
| Martin Paszek | OSI Digital Grid Solutions | |
| Asanga Perera | New York ISO | |
| Darlene Phillips | PJM Interconnection | None |
| Christopher Pilong | PJM Interconnection | None |

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| | | Transmission Owner |
| Joseph Polka | Duquesne Light Company | |
| Greg Poulos | PJM Committee Voting Generic Account | |
| | | Transmission Owner |
| Nicholas Pratt | PPL Electric Utilities Corp. dba PPL Utilities (TO) | |
| Ruth Price | Delaware Division of the Public Advocate | |
| | | Electric Distributor |
| Jason Proconiar | Buckeye Power, Inc. | |
| Farrokh Rahimi | Open Access Technology International, Inc. | None |
| | | Electric Distributor |
| John Rainey | Northern Virginia Electric Cooperative (NOVEC) | |
| Wanda Reder | PPL | |
| Edward Rich | PJM Interconnection | |
| Becky Robinson | vistra energy | |
| Tomas Rodriguez | Organization of PJM States, Inc. | |
| | | Electric Distributor |
| John Rohrbach | Wabash Valley Power Association, Inc. | |
| | | Transmission Owner |
| 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) | |
| Eric Runge | Open Access Technology International, Inc. | None |
| Tom Rutigliano | Natural Resources Defense Council | |
| Jonathan Sasser | Customized Energy Solutions, Ltd. | None |
| | | Generation Owner |
| David Scarpignato | Calpine Energy Services, L.P. | |
| Ken Schuyler | PJM Interconnection | None |
| David Schweizer | PJM Interconnection | |
| August Seibel | Black Dog Insights | |
| | | Transmission Owner |
| Bahaa Seireg | Rockland Electric Company | |
| | | Transmission Owner |
| Evan Shearer | Duke Energy Business Services LLC | |
| | | Transmission Owner |
| Mark Smith | AEP Energy Partners, Inc. (AEP Retail) | |
| Greg Solomon | Pennsylvania Public Utility Commission | |
| | | Transmission Owner |
| James Sorrels | AEP Appalachian Transmission Company, Inc. | |

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| | | Other Supplier |
| Trevor Sprague | Jersey Green Energy LLC | |
| Sean Sproul | AMP Solar US Services, LP. | |
| Vincent Stefanowicz | PJM Interconnection | None |
| Ed Stein | Ohio Edison Company | Electric Distributor |
| Alexander Stern | Public Service Electric & Gas Company | Transmission Owner |
| Haibin Sun | Exelon Business Services Company, LLC | 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 Thundiyl | Exelon Generation Co., LLC (NEV_XLON) | Generation Owner |
| Andrea Tighe | CAPS | |
| James Tobia | FirstEnergy Services | |
| Jianzhong Tong | University of Delaware | |
| Catherine Tyler | Monitoring Analytics | |
| Jerry Warchol | Dominion Virginia Power (EDC) | Transmission Owner |
| Kathleen Wehnes | Maryland Department of the Environment | |
| Christopher Wehr | Ohio Edison Company (EDC) | Electric Distributor |
| Joshua Whitaker | Budderfly, Inc. | |
| Brett White | Invernergy, LLC | Generation Owner |
| Brett White | Pine Gate Mid-Atlantic, LLC | Other Supplier |
| Jeffrey Whitehead | GT Power Group | Transmission Owner |
| Bernie Whitmoyer | Jersey Central Power & Light Company | |
| Amy Willey | Delaware Public Service Commission | |
| Femie Williams | East Kentucky Power Cooperative, Inc. | Transmission Owner |
| Emily Wilmoth ES | Dominion Virginia Power | Transmission Owner |
| De Andre Wilson | Maryland Public Service Commission | |

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| Megan Wisersky | Madison Gas & Electric Co. | Other Supplier |
| Damon Xenopoulos | Other | |
| Andrea Yeaton | PJM Interconnection | None |
| Jin An Yi | jinan | |
| 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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