



DRAFT
Meeting Minutes
PJM Interconnection
Energy Storage Resources in RPM Discussion
PJM Conference and Training Center
Valley Forge, PA
July 23, 2014
9:00 AM - 12:00 PM

Members Present:

Tom Rutigliano	Achieving Equilibrium LLC
Joe Karrasch	AEP
Thomas Fecho	AEP
Phil Cox	AES
Brian Perusse	AES
Takis Laios	American Electric Power
Chris Norton	American Municipal Power, Inc.
Kevin Patten	Appalachian Power Company
Brock Ondayko	Appalachian Power Company
John Fernandes	Baltimore Gas and Electric
Rehan Gilani	ConEdison Energy, Inc.
Bill Dugan	Customized Energy Solutions, Ltd.
Carl Johnson	Customized Energy Solutions, Ltd.
Judith Judson McQueeney	Customized Energy Solutions, Ltd.
John Farber	DE Public Service Commission
Steve Steffel	Delmarva Power & Light Company
Catharine Lacy	Dominion Virginia Power
Kenneth Jennings	Duke Energy Business Services LLC
Steve Steinkuhl	Duke Energy Business Services LLC
Rebecca Stadelmeyer	Exelon Corp.
Melanie Sanders	Exelon Business Services Company, LLC
Martin Bolan	FirstEnergy Solutions Corporation
Jim Benchek	FirstEnergy Solutions Corporation
David Pratzon	GT Power Group
Derek Hagaman	GT Power Group
John Webster	Icetec.com, Inc.
Kenneth Foladare	IMG Midstream LLC
Alex Ma	Invenergy
Robert O'Connell	JPMorgan Ventures Energy Corporation



Cody Hill	LS Power
Megan Wisersky	Madison Gas & Electric Company
Fred Rohs	Marina Energy, LLC
Ralph De Geeter	Maryland Public Service Commission
Kevin Dean	McNees Wallace & Nurick LLC
Tom Blair	Monitoring Analytics, LLC
Howard Haas	Monitoring Analytics, LLC
George Kogut	New York Power Authority
Jung Suh	Noble Americas Energy Solutions LLC
Brian Hamilton	North American Electric Reliability Corporation
John Hoeplinger	NRG Energy
Neal Fitch	NRG Power Marketing LLC
Fred Heizer	Ohio PUC
John Brodbeck	Potomac Electric Power Company
Mollie Maher	PPL EnergyPlus, L.L.C.
Michele Greening	PPL EnergyPlus, L.L.C.
Mark Brozina	Primary Power LLC
John Citrolo	PSEG Energy Resources and Trade LLC
Nicole Swan	Public Service Electric & Gas Company
Al Grisolia	Public Service Electric & Gas Company
Frank Czigler	Public Service Electric & Gas Company
Tom Hoatson	Riverside Generating, LLC
Steven Lichtin	Stasis Energy, LLC
Louis Slade	Virginia Electric & Power Company

PJM Staff Present:

Michael Herman, Facilitator	PJM Interconnection, LLC
Bhavana Keshavamurthy	PJM Interconnection, LLC
Bridgid Cummings	PJM Interconnection, LLC
Eric Hsia	PJM Interconnection, LLC
Janell Fabiano	PJM Interconnection, LLC
Jeffrey Bastian	PJM Interconnection, LLC
Jennifer Tribulski	PJM Interconnection, LLC
Jerry Bell	PJM Interconnection, LLC
Keyur Patel	PJM Interconnection, LLC
Michael Bryson	PJM Interconnection, LLC
Michael Sobotka	PJM Interconnection, LLC
Michael Ward	PJM Interconnection, LLC
Murty Bhavaraju	PJM Interconnection, LLC
Scott Baker	PJM Interconnection, LLC
Tom Falin	PJM Interconnection, LLC



Tom Hauske
Jason Quevada, Secretary

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PJM Interconnection, LLC



1. ADMINISTRATION

Mr. Herman called the meeting to order and then asked Mr. Quevada to call the roll. Mr. Herman then asked for additional items for the agenda, and there were no suggestions.

2. DISCUSS TARGETED WORK PLAN

Mr. Herman reviewed a targeted work plan for the discussion. The plan has moved to bi-monthly meetings until August 2014, leaving time for any recommended proposal to be implemented in advance of the May 2015 Base Residual Auction.

3. EDUCATION/ACTION ITEMS

PJM provided education and led discussions on topics as listed in the meeting's agenda. Education will be on-going as requested by the members for future meetings.

- PJM led a discussion on the question: How are advanced energy storage resources treated in NYISO, CAISO and other entities, specifically with respect to time capability and other design components in our Matrix?
- PJM addressed the topic of allowing energy storage resources to collocate with intermittent resources and provide capacity as one unit under this problem statement. PJM feels this is within scope, and is open to suggestions for additional Design Components and Solutions options for inclusion in the Matrix.
- PJM addressed the question: If a unit schedules 5 starts in a given week and uses all of those up by Wednesday, are they forced to take an outage? This topic is currently under consideration for inclusion at the Operating Committee.
- Should Run of River Hydro Resources have their ICAP limited? This question was determined to be out of scope for this problem statement.
- PJM addressed the analysis performed by ESA regarding the 20 Coincident peaks, the 3.3 MWh, and the effective load carrying capability.
- PJM addressed the representation of Status Quo in the Matrix. The Matrix has been updated to include two status quo columns, 1 for how Advanced Energy Storage Resources and Other Storage Resources are treated in PJM today, and one for how units in RPM are treated today. Please note that the current the status quo for Advanced Energy Storage Resources to participate in RPM is that they are not directly able to participate as a capacity product.
- Where is the topic of Pumped Storage maximum power output over 1 hour referred to in PJM manuals? This topic is covered in PJM Manual 21, Appendix A, Section B (4).
- Can PJM provide education on Metering/Telemetry requirements? We are working with our SME's to provide education on this topic at the August 15th meeting. Please See M11 and M14D for a detailed description.
- What is the status quo of the Make Resource Available design component/How will the interconnection process (and determination of rating) work for Energy Storage Resources?

4. OPTIONS MATRIX

PJM led a discussion on solution options and solicited member feedback in an effort to consolidate design components as listed in the options matrix. PJM also led discussions regarding its preferred package. The updated



design component matrix will be made available on the meeting's website. PJM will be polling the members to solicit their input in future meetings.

5. ACTION ITEMS

Through discussion, several action items (and questions) were identified for PJM to discuss in future meetings:

- PJM will provide an update on the status of the topic under consideration for the OC: If a unit schedules 5 starts in a given week and uses all of those up by Wednesday, are they forced to take an outage? Also on this topic to be discussed is how this situation is handled in eDart and in GADS.
- PJM will provide education on Metering and Telemetry requirements.
- PJM will provide education on the interconnection process and determination of ratings for Energy Storage Resources
- PJM will update the status quo for the Test Requirements Design component to reflect multiple market products.
- Does MOPR need to be addressed in Energy Storage Resource discussions?
- Look into the defined term Energy Storage Resources, and determine if it applies as we use it in the matrix.

6. FUTURE MEETINGS

August 15, 2015	9:00am – 1:00pm	Webinar/CTC, Norristown, PA
August 29, 2015	9:00am – 1:00pm	Webinar/CTC, Norristown, PA

Author: Jason Quevada, PJM
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