



Meeting Minutes
PJM Interconnection
Energy Storage Resources in RPM Discussion
PJM Conference and Training Center
Valley Forge, PA
July 2, 2014
9:00 AM - 12:00 PM

Members Present:

Tom Rutigliano	Achieving Equilibrium LLC
David Canter	AEP
Mark Smith	AEP Energy Partners, Inc. (AEP Retail)
Praveen Kathpal	AES Energy Storage, LLC
Takis Laios	American Electric Power
Chris Norton	American Municipal Power, Inc.
Gary Fuerst	American Transmission Systems, Inc.
Kevin Patten	Appalachian Power Company
Brock Ondayko	Appalachian Power Company
John Fernandes	Baltimore Gas and Electric
Joseph Kerecman	Calpine Energy Services, L.P.
Stewart Harris	Carmen Group
Rehan Gilani	ConEdison Energy, Inc.
Guy Filomena	Customized Energy Solutions, Ltd.
Bill Dugan	Customized Energy Solutions, Ltd.
Carl Johnson	Customized Energy Solutions, Ltd.
Judith Judson McQueeney	Customized Energy Solutions, Ltd.
John Horstmann	Dayton Power & Light Company
John Farber	DE Public Service Commission
Steve Steffel	Delmarva Power & Light Company
Andrea Maucher	Division of the Public Advocate of the State of Delaware
Catharine Lacy	Dominion Virginia Power
Nancy Connelly	Duke Energy
Jeff Gates	Duke Energy
Kenneth Jennings	Duke Energy Business Services LLC
Spencer Hanes	Duke Energy Business Services LLC
Jason Cox	Dynegy Power Marketing, Inc.
Katherine Hamilton	Energy Storage Association
Melanie Sanders	Exelon Business Services Company, LLC
Grant Marchewka	FirstEnergy Corporation



Evan Dean	FirstEnergy Corporation
Martin Bolan	FirstEnergy Solutions Corporation
David Marton	FirstEnergy Solutions Corporation
Jim Bencheck	FirstEnergy Solutions Corporation
David Pratzon	GT Power Group
John Webster	Icetec.com, Inc.
Kenneth Foadare	IMG Midstream LLC
Alex Ma	Invenergy
Robert O'Connell	JPMorgan Ventures Energy Corporation
Kevin Dean	McNees Wallace & Nurick LLC
Howard Haas	Monitoring Analytics, LLC
Mariann Wilczek	New York ISO
George Kogut	New York Power Authority
Fred Heizer	Ohio PUC
Greg Carmean	Organization of PJM States, Inc. (OPSI)
William Kouam Kamwa	Other
John Brodbeck	Potomac Electric Power Company
Tom Hyzinski	PPL EnergyPlus, L.L.C.
John Citrolo	PSEG Energy Resources and Trade LLC
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
Dave Pomian	PJM Interconnection, LLC
David Schweizer	PJM Interconnection, LLC
Doug MacGibbon	PJM Interconnection, LLC
Janell Fabiano	PJM Interconnection, LLC
Jeffrey Bastian	PJM Interconnection, LLC
Jennifer Tribulski	PJM Interconnection, LLC
Jerry Bell	PJM Interconnection, LLC
Jonathan Sasser	PJM Interconnection, LLC
Joseph Ciabattoni	PJM Interconnection, LLC
Keyur Patel	PJM Interconnection, LLC
Michael Olaleye	PJM Interconnection, LLC
Michael Ward	PJM Interconnection, LLC
Murty Bhavaraju	PJM Interconnection, LLC
Paul Scheidecker	PJM Interconnection, LLC



Scott Baker	PJM Interconnection, LLC
Stanley Williams	PJM Interconnection, LLC
Stanley Williams	PJM Interconnection, LLC
Tom Falin	PJM Interconnection, LLC
Tom Hauske	PJM Interconnection, LLC
Jason Quevada, Secretary	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.

4. **ESA PRESENTATION (10:20-10:50)**

Energy Storage Association led a presentation on "Valuing Storage in the PJM Capacity Market (RPM)"

5. **OPTIONS MATRIX**

PJM continued gathering design components from the members, and will continue to solicit further design components in future meetings. PJM will make available the updated design component matrix on the meeting's website. PJM will also be polling the members to solicit their input in future meetings.

6. **ACTION ITEMS**

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

- PJM will lead 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 will lead a discussion on considering the topic of allowing energy storage resources to collocate with intermittent resources and provide capacity as one unit under this problem statement
- Should the following discussion be taken up at 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?"
- Should Run of River Hydro resources have their ICAP limited? – Is this item within the scope of this Problem Statement



- PJM Should validate the analysis performed by ESA regarding the 20 Coincident peaks, the 3.3 MWh, and the effective load carrying capability
- The Representation of Status Quo in the Matrix may need adjusting: Maybe two Status quo columns, 1 for Energy Storage Resources in RPM currently (IE N/A) and another for how batteries are treated now and/or how other units in RPM are treated
- Where is the topic of Pumped Storage maximum power output over 1 hour referred to in PJM manuals
- Can PJM provide education on Metering/Telemetry requirements?
- 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?

7. **FUTURE MEETINGS**

July 23, 2014	9:00am – 1:00pm	Webinar/CTC, Norristown, PA
August 15, 2015	9:00am – 1:00pm	Webinar/CTC, Norristown, PA
August 29, 2015	9:00am – 1:00pm	Webinar/CTC, Norristown, PA

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