



Meeting Minutes
PJM Interconnection
Energy Storage Resources in RPM Discussion
PJM Conference and Training Center
Valley Forge, PA
June 10, 2014
1:00 PM - 3:00 PM

Members Present:

Tom Rutigliano	Achieving Equilibrium LLC
David Canter	AEP
Mark Smith	AEP Energy Partners, Inc. (AEP Retail)
Takis Laios	American Electric Power
Chris Norton	American Municipal Power, Inc.
Brock Ondayko	Appalachian Power Company
Mike Berlinski	Beacon Power, LLC
Joseph Kerecman	Calpine Energy Services, L.P.
Stewart Harris	Carmen Group
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 Horstmann	Dayton Power & Light Company
Catharine Lacy	Dominion Virginia Power
Nancy Connelly	Duke Energy
Kenneth Jennings	Duke Energy Business Services LLC
Chuck Dugan	East Kentucky Power Cooperative, Inc.
Katherine Hamilton	Energy Storage Association
Rebecca Stadelmeyer	Exelon Business Services Company, LLC
Grant Marchewka	FirstEnergy Corporation
Jim Bencheck	FirstEnergy Solutions Corporation
Michael Borgatti	Gable and Associates
David Pratzon	GT Power Group
John Webster	Icetec.com, Inc.
Kenneth Foadare	IMG Midstream LLC
Dennis Worthem	Independent Observer from Ohio
Robert O'Connell	JPMorgan Ventures Energy Corporation
Megan Wisersky	Madison Gas & Electric Company
Ralph De Geeter	Maryland Public Service Commission



Kevin Dean	McNees Wallace & Nurick LLC
George Kogut	New York Power Authority
David Applebaum	NextEra Energy Power Marketing, LLC
Anoop Shah	NextEra Energy Power Marketing, LLC
Edgar Garcia	Noble Americas Energy Solutions LLC
Brian Hamilton	North American Electric Reliability Corporation
Neal A. Fitch	NRG Power Marketing LLC
Fred Heizer	Ohio PUC
William Kouam Kamwa	Other
John Brodbeck	Potomac Electric Power Company
Tom Hoatson	Riverside Generating, LLC
Kevin Gorman	The Highlands Energy Group LLC
Louis Slade	Virginia Electric & Power Company

PJM Staff Present:

Michael Herman, Facilitator	PJM Interconnection, LLC
Aaron Berner	PJM Interconnection, LLC
Adam Keech	PJM Interconnection, LLC
Andrew Gledhill	PJM Interconnection, LLC
Dave Pomian	PJM Interconnection, LLC
David Anders	PJM Interconnection, LLC
Ed Hoey	PJM Interconnection, LLC
Francis Barrett	PJM Interconnection, LLC
Jennifer Tribulski	PJM Interconnection, LLC
Jerry Bell	PJM Interconnection, LLC
Jim Kirby	PJM Interconnection, LLC
Joseph Ciabattoni	PJM Interconnection, LLC
Laura Walter	PJM Interconnection, LLC
Michael Olaleye	PJM Interconnection, LLC
Mike Ward	PJM Interconnection, LLC
Murty Bhavaraju	PJM Interconnection, LLC
Patricio Rocha-Garrido	PJM Interconnection, LLC
Paul Scheidecker	PJM Interconnection, LLC
Risa Holland	PJM Interconnection, LLC
Tom Falin	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 roughly calls for monthly meetings until August 2014, leaving time for any recommended proposal to be implemented in advance of the May 2015 Base Residual Auction.

3. DESIGN COMPONENTS

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

4. ACTION ITEMS

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

- Should topic of allowing energy storage resources to collocate with intermittent resources and provide capacity as one unit be discussed under this problem statement?
- If an energy storage resource charges during a specific hour, is that netted out for a make whole payment?

According to section 4.2 of manual 28 (Operating Agreement Accounting): "If the resource's pool-scheduled Regulation offer price (plus lost opportunity costs, including shoulder hours' lost opportunity costs, for generators) is greater than its Regulation Clearing Price credit for that hour, then the resource receives an additional credit equal to the amount that its Regulation offer price (plus lost opportunity costs, including shoulder hours' lost opportunity costs, for generators) is in excess of its Regulation Clearing Price credit." The regulation market clearing price is intended to cover the scenario as long as the energy storage resource in question is pool scheduled for regulation (If an energy storage resource charges during a specific hour). This is because regulation is priced in real-time every five minutes and where the clearing price is determined as the most expensive (offer + LOC) of all resources pool scheduled providing regulation at the time.

- 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? (waiting on a response from Jerry for the exact wording of this one)
- 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?
- Can PJM discuss the process for determining the capacity value of a resource based on continuous time capability
- More definition around the status quo for "Method of availability to PJM as a generating resource"
- Has IEEE done any work on assessing the availability of Energy Resources



5. FUTURE MEETINGS

July 2, 2014	9:00am – 1:00pm	Webinar/CTC, Norristown, PA
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

Author: Jason Quevada, PJM
Draft: 6/16/2014
Final: 7/7/14
Docs: 797729 v1