



**Reactive Supply Compensation in Markets Operated by Regional Transmission Organizations and Independent System Operators Workshop**  
**Docket No. AD16-17-000**  
**June 30, 2016, Washington, DC**

**Agenda**

- 1. Introduction and Background** **12:00 p.m. to 12:15 p.m.**<sup>1</sup>
  - 1.1 Introduction of Commission staff
  - 1.2 Workshop procedures
  - 1.3 Brief overview of Commission precedent on Reactive Supply compensation
  
- 2. Costs Incurred by Synchronous Generators for Reactive Supply** **12:15 p.m. to 1:15 p.m.**
  - 2.1 What costs do synchronous generators incur to install and maintain Reactive Supply capability?
  - 2.2 Is the equipment required for synchronous generators to maintain Reactive Supply capability the same as that required to produce and deliver real power, or must additional costs be incurred to provide Reactive Supply capability?
  - 2.3 Would synchronous generators be designed or operated differently were it not for the Reactive Supply capability requirements of their respective Interconnection Agreements or Reactive Supply reliability requirements?
  - 2.4 What costs do synchronous generators incur in real-time to provide Reactive Supply service?
  - 2.5 How are the costs required for synchronous generators to maintain Reactive Supply capability and to provide Reactive Supply service recovered?

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<sup>1</sup> All times are eastern daylight time.

**Panelists:**

- Dennis Bethel, Bethel Electric Rate Consulting, LLC
- Brook Knodel, Mott MacDonald
- Robert O'Connell, Main Line Electricity Market Consultants, LLC, on behalf of Panda Power Funds
- Jason Sine, PSEG Services Corporation

**3. Costs Incurred by Non-Synchronous Generators for Reactive Supply 1:15 p.m. to 2:15 p.m.**

- 3.1 What costs do non-synchronous generators incur to install and maintain Reactive Supply capability?
- 3.2 Is the equipment required for non-synchronous generators to maintain Reactive Supply capability the same as that required to produce and deliver real power, or must additional costs be incurred to provide Reactive Supply capability?
- 3.3 Would non-synchronous generators be designed or operated differently were it not for the Reactive Supply capability requirements of their respective Interconnection Agreements or Reactive Supply reliability requirements?
- 3.4 What costs do non-synchronous generators incur in real-time to provide Reactive Supply service?
- 3.5 How are the costs required for non-synchronous generators to maintain Reactive Supply capability and to provide Reactive Supply service recovered?

**Panelists:**

- Ravi Bantu, RES America Developments Inc.
- Mason Emmett, NextEra Energy, Inc.
- Omar Martino, EDF Renewable Energy
- Nicholas Miller, GE Energy Consulting
- Robert Nelson, Siemens Wind Power

**4. Compensation Methods for Reactive Supply in Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs) 2:15 p.m. to 3:55 p.m.**

- 4.1 How does each RTO and ISO currently compensate for Reactive Supply capability and Reactive Supply service?
- 4.2 Is compensation for Reactive Supply capability and Reactive Supply service in RTOs and ISOs commensurate with the associated costs?
- 4.3 How do the RTOs and ISOs monitor the availability and amount of Reactive Supply capability, and is availability and amount of Reactive Supply capability

- and Reactive Supply service linked to compensation?
- 4.4 How could RTOs and ISOs compensate for Reactive Supply based on the actual provision of Reactive Supply service?
  - 4.5 Are there compensation mechanisms other than those currently in place that would be more commensurate with costs?
  - 4.6 Should real power capacity compensation mechanisms (i.e., centralized capacity markets and other capacity constructs in RTOs/ISOs) account for reactive power capital cost compensation, and, if so, how?
  - 4.7 Should Reactive Supply compensation be adjusted to account for changes in Reactive Supply capability (e.g., capability that has degraded or increased), and, if so, how? Should a degradation threshold be considered?

**Panelists:**

- Joe Bowring, Monitoring Analytics, LLC
- Michael DeSocio, New York Independent System Operator, Inc.
- Keith Johnson, California Independent System Operator Corporation
- Pallas LeeVanSchaick, Potomac Economics
- Neil Levy, King & Spalding LLP, on behalf of the Electric Power Supply Association
- Alan McBride, ISO New England Inc.
- Robert A. Weishaar, Jr., McNees Wallace & Nurick LLC, on behalf of the PJM Industrial Customer Coalition and the Coalition of MISO Transmission Customers
- Stan Williams, PJM Interconnection, L.L.C.

**6. Closing Comments and Next Steps**

**3:55 p.m. to 4:00 p.m.**