



Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators

Operator Actions

**Docket No. AD14-14-000
December 9, 2014**

Agenda

On December 9, 2014, a third and final workshop in this docket will be held to address matters of price formation in the energy and ancillary services markets administered by the Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs).¹ The workshop will focus on operator actions that affect price formation.

8:45am - 9:00am **Welcome and Opening Remarks**

9:00am – 12:00pm **Panel 1: Operator Actions in RTOs and ISOs
(with a 15 minute break)**

Panel 1 will address the nature of operator-initiated out-of-market resource commitments and operator adjustments to market inputs. Recognizing that the current state-of-the-art computational tools do not allow unit commitment and economic dispatch algorithms to consider all relevant system constraints, panelists will be asked to discuss whether and how to incorporate otherwise un-modeled constraints (e.g., voltage constraints) into the unit commitment and economic dispatch processes. Topics will include: the extent to which un-modeled constraints require operator actions outside of the market; how operators (and market designers) consider which constraints to model; under what circumstances unit commitment decisions should be made as part of the day ahead or real-time market, or as part of the residual unit commitment process; and, when making

¹ *Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators*, Notice of Workshop, Docket No. AD14-14-000 (Oct. 10, 2014).

commitments as part of the market processes, under what circumstances such commitments should be reflected in energy and ancillary services prices. Panelists will also be asked about the types of information that the RTOs and ISOs currently release publicly about operator actions, including the granularity and timing of such information. Panelists will be asked to discuss current or recent RTO and ISO efforts to improve the price formation process as it relates to un-priced or otherwise out-of-market operator actions.

Panelists:

- Peter Brandien, ISO New England Inc.
- Mark Rothleder, California Independent System Operator Corporation
- Jeff Bladen, Midcontinent Independent System Operator, Inc.
- Aaron Markham, New York Independent System Operator, Inc.
- Mike Bryson, PJM Interconnection, L.L.C.
- Sam Ellis, Southwest Power Pool, Inc.

12:00pm – 1:15pm Lunch

1:15pm – 2:45pm Panel 2: Experience with Operator Actions

Panel 2 will focus on the experience market participants have with out-of-market operator actions. In particular, this panel will explore the extent to which panelists believe such operator actions affect the operation and revenues/costs of market participants that own generation assets and serve load. Panelists will be asked to provide specific examples, based on their experience, of operator actions that they believe have negatively impacted the price formation process. To the extent possible, panelists will be asked to discuss differences among the approaches taken by the RTOs and ISOs to incorporate otherwise un-modeled constraints into the unit commitment and economic dispatch processes. Panelists will also be asked to comment on the information that would be most helpful to them in understanding why resources are committed for reasons other than economics and how those commitments affect prices and make-whole charges. Finally, panelists will be asked for their recommendations to improve the price formation process.

Panelists:

- Andrew Hartshorn, NRG/Boston Energy Trading & Marketing
- Michael Schnitzer, NorthBridge Group, speaking on behalf of Entergy Nuclear Power Marketing, LLC
- Michael Evans, Shell Energy North America (US), L.P.
- Edward Tatum, Old Dominion Electric Cooperative
- John A. Anderson, Electricity Consumers Resource Council (ELCON)
- Steve Wofford, Exelon Corporation

- Tom Kaslow, GDF SUEZ Energy North America, Inc.
- Mark Smith, Calpine Corporation
- Joel Gordon, PSEG

3:00pm – 4:30 pm Panel 3: Options to Reduce the Market Impacts of Operator Actions

Panel 3 will focus on practices that RTOs and ISOs have adopted, plan to adopt, or might consider adopting to incorporate otherwise un-modeled constraints (e.g., voltage constraints) into the unit commitment and economic dispatch processes. These practices include, but are not limited to: pricing run enhancements to expand the types of resources that are eligible to set the clearing price for energy; adjustments to better align the market model with the physical operation of the system; transmission constraint relaxation; ramping products and reserve products that better reflect the costs of supplemental commitments operators might make to address uncertainty. Panelists will be asked to discuss the factors that influence the ability to adopt any of the above practices and to discuss the considerations made when choosing among these practices. Panelists will also be asked to discuss other options to better reflect currently un-priced operator actions in market clearing prices.

Panelists:

- David Patton, Potomac Economics
- Joe Bowring, Monitoring Analytics, LLC
- Matthew White, ISO New England Inc.
- Andrew Hartshorn, NRG/Boston Energy Trading & Marketing
- Michael Schnitzer, NorthBridge Group, speaking on behalf of Entergy Nuclear Power Marketing, LLC
- Steve Wofford, Exelon Corporation
- Edward Tatum, Old Dominion Electric Cooperative
- John A. Anderson, ELCON