



Economic Approaches to Understanding and Addressing Resilience in the Bulk Power System

**May 30, 2018, 9:00 a.m. – 3:30 p.m.
Resources for the Future, 1616 P Street, NW, Washington, DC**

AGENDA

Background

The motivating factor for this workshop is the high level of regulatory and political interest in grid resilience, a concept still emerging from intellectual infancy. In an effort to understand the nature and severity of challenges to resilience, the FERC initiated a proceeding in January. Given the limited application of economic principles and methods in the recent discussions of resilience, we hope that an economics-oriented workshop can aid FERC, RTO/ISO stakeholders, energy policymakers, Hill staffers and others in making upcoming decisions. The goals of the event are to learn from each other and to develop advice about addressing resilience in wholesale electricity market design and system planning.

Light Breakfast (8:30 – 9:00)

Introduction and Opening Remarks (9:00 – 9:15)

- Richard Newell, Resources for the Future
- Conference organizers on ground rules and objectives

Defining and Measuring Resilience (9:15 – 10:15)

- How should we define, identify and measure bulk power system resilience and how does it differ from reliability?
- How should resilience be valued?

Moderator: Karen Palmer, Resources for the Future

Speakers:

- Granger Morgan, Carnegie Mellon University
- Dan Shawhan, Resources for the Future
- Alison Silverstein, Independent Consultant

Coffee Break (10:15 – 10:30)

Identifying Resilience Market Failures and Services (10:30 – 12:00)

- What are the market failures that can cause the under-provision (or over-provision) of bulk power supply resilience?
- What are the services that are important for electric system resilience?
- To procure services of the kinds that support power supply resilience, what factors make organized markets better, and what factors make planning and other non-market methods better?

Moderator: Devin Hartman

Speakers:

- Ben Hobbs, Johns Hopkins University
- John Moura, North American Electric Reliability Corporation
- Rob Gramlich, Grid Strategies LLC
- Sue Tierney, Analysis Group

Lunch (12:00 – 12:30)

Reconciling Resilience Services with Current Market Design (12:30 – 1:45)

- How should we determine what threats to bulk electricity supply resilience are not adequately addressed in current market design, electric and gas system planning, and industry practices?
- How should we assess potential changes should be in the ways that the specific services are procured, and what changes do you recommend?
- To what extent should economic objectives rather than standards be used in choosing resilience measures and in choosing the rules, incentives, and market designs used to induce resilience measures?

Moderator: Daniel Shawhan, Resources for the Future

Speakers:

- Jim Bushnell, University of California, Davis
- Erik Ela, Electric Power Research Institute
- Sam Newell, The Brattle Group

Afternoon Break (1:45 – 2:00)

Identifying Next Steps (2:00 – 3:15)

- What should next steps be to address resilience concerns in wholesale market design, operating procedures, transmission planning, DER integration or other mechanisms?
- How urgent and region-specific are these issues?

Moderator: Karen Palmer, Resources for the Future

Panelists:

- Mike Hogan, Regulatory Assistance Project
- Joe Bowring, Monitoring Analytics
- David Patton, Potomac Economics
- Devin Hartman, R Street Institute

Closing Session: Review of take away points from today (3:15 – 3:30)

- Sue Tierney, Analysis Group