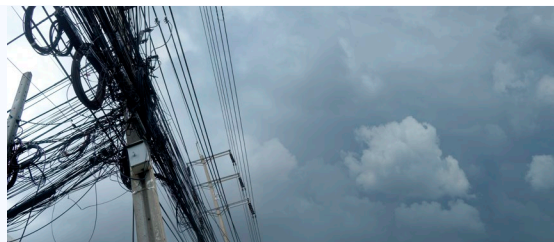


Electricity System Operability and Reliability under Increasing Complexity

A Workshop



PURPOSE

The key focus of this workshop is to understand how to maintain and improve the operational integrity of the United States' electricity grid while it integrates increasing quantities of distributed, complex elements. Workshop sessions will consider advances in technologies, energy equity and affordability imperatives, market mechanisms, as well as policy and regulatory frameworks as they pertain to supporting the electricity system's operational integrity.

This workshop will convene leaders from government, industry, academia, and nongovernmental organizations with the aim of forging relationships and opening communication channels for collaborative work towards building a more robust and flexible electricity system in the face of these challenges. A written proceedings will be produced, published, and disseminated to document and distribute the ideas presented during this workshop.

MONDAY, JUNE 17, 2024

Purpose

- Outline major technical changes occurring across the electricity system – load is increasingly uncertain, generation increasingly intermittent, the system is growing increasingly distributed and complex.

All times are Eastern Daylight Time

8:30

Welcome

Anu Annaswamy, *Massachusetts Institute of Technology*

Brent Heard, *Board on Energy and Environmental Systems, National Academies*

8:35–10:30

Session 1: What Keeps Grid Operators Up at Night?

Keynote: Gene Rodrigues, *Department of Energy*

Panel presentations followed by moderated discussion with Mark Lauby, *North American Electric Reliability Corporation*

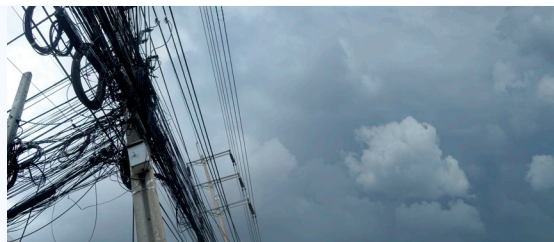
- Gordon Van Welie, *ISO-New England*
- Julieta Giráldez, *Julieta Energy*
- Katie Dykes, *Connecticut Department of Energy & Environmental Protection*
- Karen Onaran, *Electricity Consumers Resource Council*

10:30–11:00

Mid-Morning Coffee Break

Electricity System Operability and Reliability under Increasing Complexity

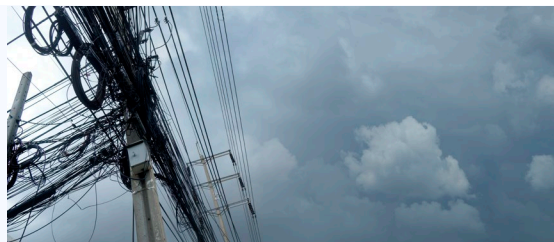
A Workshop



- 11:00–1:00** **Session 2: How do we compensate DERs and keep the lights on? Markets, equity, and consumer adoption lenses**
Keynote: Sue Tierney, *Analysis Group*
Panel presentations followed by moderated discussion with Anu Annaswamy, *Massachusetts Institute of Technology*
- JP Carvallo, *Lawrence Berkeley National Laboratory*
 - Anne Hoskins, *Generac*
 - Utopia Hill, *Reactivate*
 - Lauren Shwisberg, *RMI*
- 1:00–2:00** **Lunch**
- 2:00–3:30** **Session 3 (pt. 1): Moderated Breakout Sessions & Conversations**
Distributed grid technologies (e.g. grid-forming inverters, storage+) - how these could support the electricity system? – *Deepak Divan*
Managing load growth on an increasingly complex electricity system – *Julieta Giráldez*
Just, equitable, and inclusive planning practices for the future electricity system – *Shay Banton*
Cyber & physical security needs for an increasingly-distributed and IOT-heavy electricity system – *Jeff Dagle*
- 3:30–4:00** **Afternoon Break**
- 4:00–5:30** **Session 3 (pt. 2): Reconvene and Report-Out Key Insights from Breakouts**
- 5:30** **Reception**

Electricity System Operability and Reliability under Increasing Complexity

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TUESDAY, JUNE 18, 2024

Purpose

- Discuss navigating varied policy realities, regulatory jurisdictions, and legal considerations across the electricity system.

8:45 AM

Welcome

Anu Annaswamy, *Massachusetts Institute of Technology*

Brent Heard, *Board on Energy and Environmental Systems, National Academies*

8:55–10:30

Session 4: How do we regulate a complex electricity system with increasing distributed energy resources?

Panel presentations followed by moderated discussion with Janet Gail Besser

- Richard Glick, *GQ New Energy Strategies*
- Dede Subakti, *California ISO*
- David Brown, *University of Alberta*
- Ryan Katofsky, *Advanced Energy United*
- Erica S. McConnell, *Environmental Law & Policy Center*
- Ann E. Rendahl, *Washington Utilities and Transportation Commission*

10:30–11:00

Mid-Morning Coffee Break

11:00–12:30

Session 5 (pt. 1): Moderated Breakout Sessions & Conversations

Role for virtual power plants – *Debbie Lew*

Grid planning needs & technical architectures – *Anjan Bose*

Opportunities for munis and coops to try new technologies – *Murali Baggu*

How can we build a more resilient electricity system that serves our communities equitably? – *Elizabeth Stein*

12:30–1:30

Lunch

1:30–2:45

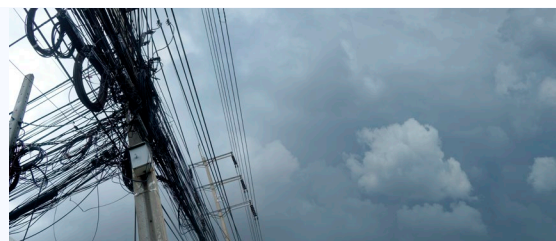
Session 5 (pt. 2): Reconvene and Report-Out Key Insights from Breakouts

2:45–3:00

Closing Remarks

Electricity System Operability and Reliability under Increasing Complexity

A Workshop



Brent Heard, *Board on Energy and Environmental Systems, National Academies*
Anu Annaswamy, *Massachusetts Institute of Technology*

3:00

Adjourn Workshop