

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

**Computing, Communications, Cyber Resilience
and the Future of the U.S. Electric Power System**

November 1, 2019
Keck Center, Room 100
500 5th St. NW.
Washington D.C.

Computing, communications, and information technologies have become essential in the planning and operation of our nation's electricity system, a trend that is expected to increase in the future. How can we take advantage of new technologies while mitigating cyber security and resilience risks? This meeting will synthesize current efforts to increase the cyber resilience of the electric power sector. We will explore fundamental tensions that underlie different computing and communication technologies and strategies, for example: between simple and complex technologies and systems and between compliance versus security cultures. Join the National Academies' Committee on the Future of Electric Power in the U.S. for a discussion of these tensions and how they could shape electric power systems over the next 30 years.

8:45 AM Welcome and thanks from the committee

Granger Morgan, Carnegie Mellon University*

8:50 AM Setting the stage – The Past and the Future of Computing in the Grid

Bill Sanders, Discovery Partners Institute*

9:10 AM Panel 1a—Electric Sector Cyber Security: Perspectives on Current Status and Future Concerns

Moderator: Bill Sanders, Discovery Partners Institute*
Brian Harrell, Cybersecurity and Infrastructure Security Agency, DHS
Mike Hyland, American Public Power Association
Robert M. Lee, Dragos

10:10 AM Panel 1b—EMP & GMD: Perspectives on Current Status and Future Concerns

Moderator: Mike Howard, Electric Power Research Institute*
John Kappenman, Storm Analysis Consultants
Mark Lauby, North American Electric Reliability Corporation
Randy Horton, Electric Power Research Institute

11:10 AM Break

* Denotes member of NASEM *Committee on the Future of Electric Power in the US*

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

11:25 AM Panel 2—Where and how should digital technologies be used to improve security and resiliency?

Moderator: Jeff Dagle, Pacific Northwest National Laboratory*
Joy Ditto, Utilities Technology Council
Mark Adamiak, Adamiak Consulting and former GE
Samara Moore, Amazon Web Services
Tim Roxey, Former E-ISAC

12:35 PM **Lunch**

1:15 PM Panel 3—Strategies for moving from a culture of compliance to a culture of security

Moderator: Cynthia Hsu, NRECA*
Marc Child, CIPC chair and Great River Energy
Joe McClelland, Federal Energy Regulatory Commission
Scott Aaronson, Edison Electric Institute

2:15 PM Panel 4—How to reconcile the timescales of innovation with standards and regulation?

Moderator: Anjan Bose, Washington State University*
Kevin Stine, Information Technology Laboratory, NIST
Yair Amir, Johns Hopkins University
Carol Hawk, Cybersecurity for Energy Delivery Systems, DOE

3:15 PM **Break**

3:30 PM Panel 5—Boundaries and interactions between utilities and national security efforts

Moderator: Granger Morgan, Carnegie Mellon University*
Caitlin Durkovich, Toffler Associates
Paul Stockton, Sonecon LLC
David Batz, Edison Electric Institute

4:45 PM **Adjourn**

* Denotes member of NASEM *Committee on the Future of Electric Power in the US*