



**U.S. Department of Energy
Electricity Advisory Committee Meeting**

**National Rural Electric Cooperative Association Conference Center
Arlington, Virginia
February 16, 2023**

Day 2 Meeting Summary

CONTENTS

Day 2 Participants	ii
Electricity Advisory Committee Members	ii
Registered U.S. Department of Energy (DOE), National Laboratories, and Power Marketing Administrations.....	iii
Registered Speakers, Guests, and Members of the Public	iv
Registered Support.....	iv
Meeting Overview	1
Opening Remarks	1
Hurricane Resilience Panel	1
Discussion.....	2
Energy Storage Subcommittee Update and Approval of the 2022 Biennial Storage Review	3
Discussion.....	3
Smart Grid Subcommittee Update and Approval of the EAC 8008 Pathways – Combined Executive Summary and Addendum	4
Discussion.....	5
Grid Resilience for National Security Subcommittee Update	5
Public Comments	6
Wrap-up and Adjournment of the February 2023 Meeting of the EAC	6
Signature Page	7

Day 2 Participants

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National Rural Electric Cooperative
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Registered Speakers, Guests, and
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Meeting Overview

The Electricity Advisory Committee's (EAC) first meeting of 2023 was held February 15 and 16 using a hybrid format at the National Rural Electric Cooperative Association building in Arlington, Virginia, with the option of virtual participation via the video conferencing platform Webex. On the second day of the meeting, EAC member Dr. Tom Bialek moderated a panel, entitled Hurricane Resiliency Lessons Learned. A moderated roundtable discussion between EAC members and panelists followed the panel presentations. Energy Storage Subcommittee Vice Chair Clay Koplin presented the 2022 Biennial Storage Review and Smart Grid Subcommittee Chair Dr. Tom Bialek presented the Section 8008 Pathways – Combined Executive Summary and Addendum. The EAC voted unanimously to approve both work products. To conclude the day, members from the Grid Resilience for National Security Subcommittee gave updates.

All presentations, as well as recordings of the meeting, can be found at <https://www.energy.gov/oe/february-15-16-2023-electricity-advisory-committee-meeting>.

Opening Remarks

Jayne Faith, EAC Designated Federal Officer, took attendance and officially called the meeting to order. EAC Chair Wanda Reder gave a brief overview of the Day 1 events, outlined the agenda for Day 2, and introduced the first panel.

Hurricane Resilience Panel

Moderator

- Dr. Tom Bialek

Panelists

- Mario Hurtado
- Dr. Jennie Chen
- Dave Herlong

Moderator and panelist remarks and presentation slides can be found online via the link provided in the Meeting Overview section above.

Discussion

Louis Finkel stated that the difference between municipal, cooperative, and investor-owned utilities should be noted. He commented that cooperative utilities face particular challenges in restoration, recovery, and reimbursement.

Mike Heyeck commented on the weaknesses inherent in transmission and distribution infrastructure that uses wooden poles. He stated that it was an important resiliency consideration to develop a better standard for the poles used in infrastructure.

Bob Cummings stated that more education is needed around the topics of post-hurricane restoration and virtual power plants.

Andrew Barbeau spoke about his experiences with rural cooperatives in coastal communities and noted the clear and present need to think about recovery in such communities more strategically. He noted the need for information sharing and suggested that the EAC develop recommendations around solutions that DOE may be able to support, such as pre-ordering equipment for stakeholders who do not have the capital to do so.

Assistant Secretary (AS) Gene Rodrigues expressed excitement at the discussion and stated his appreciation of the prudent discussion around the critical issue of resiliency.

Questions and Answers

Q1. Rick Mroz asked the panelists to speak about the importance of coordination and communication and requested that Mr. Hurtado, in particular, share his experiences working in Puerto Rico.

Mr. Herlong responded that communications and stakeholder processes are essential to an effective restoration. From his experience, he noted the need to embed external affairs and community relations personnel in emergency operations centers and counties. Mr. Herlong stated that another important consideration is to negotiate and communicate a critical infrastructure list in advance.

Mr. Hurtado echoed Mr. Herlong's comments and noted that his own experience also has involved setting up regional emergency operations centers and creating critical infrastructure lists. He stated that there is a need for personnel to be further trained in emergency regional communications. Mr. Hurtado stated that he also has seen advances in the unity of communications efforts in Puerto Rico through the developments of the Energy Bureau and the State Energy Office.

Q2. Sheri Givens asked the panelists to speak on their thinking about virtual power plants (VPPs), the regulatory hurdles or barriers they perceive in that area, and affordability and equity concerns.

Mr. Hurtado noted that VPPs are the subject of much discussion in Puerto Rico; however, there are some challenges in operationalizing them due to a lack of advanced metering infrastructure. He noted that one particular difficulty in utilizing VPPs is the challenge of pricing resources in a manner that makes sense for all stakeholders. Mr. Herlong concurred that equitable participation with the right pricing is an important consideration. Dr. Chen commented on the importance of recognizing the resilience, emissions, and other benefits that VPPs can provide to communities and the need to explore different financing options.

Q3. Sharon Allan commented on the importance of supply chain considerations and asked the panelists whether they kept a list of essential assets to stockpile.

Mr. Herlong responded that they do prepare stores of essential assets, such as key substation and transmission items. He noted that the pool of storage stock has changed in the past 15 years due to conversions in the system because different types of items are needed.

Q4. Clay Koplín responded to Dr. Chen's questions, stating that he has experience using advanced metering infrastructure to surgically manage load. He asked the panelists to speak on their communications infrastructure and their experiences communicating when there is congestion during an outage.

Mr. Herlong stated running fiber optics as part of hardening efforts is an area in which DOE could support utilities. This is because utilities often face issues competing with telecom companies for space and need assistance breaking open that area so they can cost effectively deploy fiber and other communications infrastructure. Mr. Herlong noted that, in his experience, communications infrastructure held up well during hurricanes except in the hardest hit communities.

Mr. Hurtado stated that, in his experience, remote terminal units were heavily impacted; however, communications infrastructure held up well. He noted that cell phone companies invested a great deal in hardening after Hurricane Maria.

Energy Storage Subcommittee Update and Approval of the 2022 Biennial Storage Review

Clay Koplín, Subcommittee Vice Chair, presented the development process and key findings of the 2022 Biennial Energy Storage Review. The work product was passed unanimously by the EAC.

Discussion

Mr. Barbeau stated that a core and extremely valuable part of the 2022 Biennial Storage Review development process was outreach; approximately 10 members of the EAC reached out to contacts in industry and conducted interviews over the summer of 2022 that informed the work

product. He noted that a repeated message expressed by interviewees was that DOE's focus on chemistry research is appreciated; however, other barriers to deployment also require attention.

Lynne Kiesling noted that the connection between research and deployment was an important consideration included in the work product. She stated that vehicle-to-everything is an active research area.

Tom Weaver thanked Mr. Barbeau and Mr. Koplin for their work on the recommendations and suggested that DOE review the full document. He emphasized that industry members have difficulty getting projects deployed because of supply chain and other logistical issues and asked DOE to consider any actions that could be taken to help streamline these processes.

Mr. Cummings mentioned the distribution transformer issue with the supply chain. He noted that many storage options are still in development and that there is an existing energy and balance problem with deploying energy storage.

AS Rodrigues stated that Office of Electricity (OE) leadership is working hard on energy storage efforts and that the Energy Storage Grand Challenge (ESGC) is just the first step. He welcomes the report as the conclusions fit well with his expectations from his team, and he will take a holistic view of the EAC's findings and report back.

Eric Hsieh, Acting Deputy Assistant Secretary for the Energy Storage Division in OE, noted that his team and many other DOE staff involved in energy storage are attending the EAC meeting and are very interested in the reading the report and recommendations. He commended the report's authors and invited them to engage in further conversation with ESGC leadership.

Smart Grid Subcommittee Update and Approval of the EAC 8008 Pathways – Combined Executive Summary and Addendum

Dr. Bialek, Subcommittee Chair, presented the integrated Section 8008 Voluntary Model Pathways recommendations and asked for comments. The work product was passed unanimously by the EAC.

Lauren Azar, head of the Transmission Working Group, gave an overview of the group's current work product regarding national transmission corridors. Dr. Bialek stated that the EAC would hold a special meeting to vote on the work product before the June meeting.

Dr. Bialek gave an overview of potential future panel topics.

Discussion

Mr. Cummings suggested that the subcommittee consider variable load issues in the June panel. He stated that the subcommittee should begin differentiating and defining the topics for future panels.

Mr. Heyeck stated that many do not understand load growth in the United States as electricity, which is doing well to reduce carbon dioxide emissions, penetrates other sectors such as transportation, industry, and buildings, and replaces other energy forms in those sectors. He also noted that the mandate of the Grid Resilience for National Security Subcommittee may overlap with the Smart Grid Subcommittee and asked for DOE to provide further guidance.

Ms. Azar stated that the Inflation Reduction Act provision for hydrogen hubs will increase load dramatically in those areas, which is an impact that has not yet received sufficient study.

Lisa Frantzis stated that she has spoken with utility representatives who have similar concerns around load issues.

Dr. Chen suggested that EAC members look at the new Energy Systems Integration Group (ESIG) paper, released in March 2023, on locational flexible loads.

Darlene Phillips stated that PJM Interconnection is currently completing a stakeholder process around operational flexibility, which also may provide useful resources.

Dr. Kiesling seconded Dr. Chen's recommendation of the ESIG paper on spatial issues and noted that ESIG has published several good papers within the past month that are related to the topic and from which the EAC may wish to draw potential speakers. From a research perspective, she noted relevant work in transactive energy that may be the topic of future panel discussions.

Mario Hurtado and Brian Lipscomb both seconded topics that came up in earlier conversation and suggested holding a series of panels, rather than a single discussion.

Grid Resilience for National Security Subcommittee Update

Mr. Mroz provided an update from the National Association of Regulatory Utility Commissioners (NARUC) meeting. In discussions around the emerging issue of cybersecurity at the distribution and state levels, NARUC, the National Association of State Energy Officials, and the Office of Cybersecurity, Energy Security, and Emergency Response (CESER) have decided to convene a new advisory group to develop recommended standards for states.

Mr. Weaver provided an update on a work product regarding resiliency metrics that he is spearheading. The subcommittee plans to present the work product at the June meeting.

Paul Stockton, Subcommittee Chair, stated that Vice Chair Rob Lee is preparing a report on the PIPEDREAM cyberattack for the subcommittee to review. He commended CESER and DOE for

recent progress on Defense Critical Electric Infrastructure, which is aligned with and, in some ways, goes beyond EAC recommendations.

Public Comments

No public comments were submitted.

Wrap-up and Adjournment of the February 2023 Meeting of the EAC

Ms. Reder asked for any comments and closing thoughts from EAC members.

Dr. Bialek stated that he appreciated AS Rodrigues's feedback because the EAC subcommittees are meant to provide value to DOE. He emphasized that the need for long-duration storage is current and pressing.

Mr. Heyeck recalled AS Rodrigues's earlier remarks and agreed that the EAC needs to step back and look at things holistically and stay focused on bringing value to DOE.

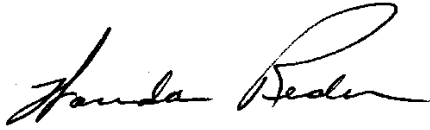
AS Rodrigues expressed his gratitude that the EAC's work and recommendations seem to align with his goals for OE. He noted that the relationship between DOE and the EAC is a two-way street and that the EAC should feel that they are able to ask DOE for support. He ended by thanking EAC members for their work and participation.

Ms. Frantzis noted that it may be helpful for DOE to give some input on future panel topics that would be of interest to them. Ms. Reder stated that feedback on how DOE is using specific EAC recommendations would also be helpful.

Ms. Reder thanked everyone for their contributions and provided closing comments. Ms. Faith adjourned the meeting.

Signature Page

Respectfully Submitted and Certified as Accurate,



Wanda Reder
Grid-X Partners, LLC
Chair
DOE Electricity Advisory Committee

5/11/2023

Date



Michael Heyeck
The Grid Group, LLC
Vice Chair
DOE Electricity Advisory Committee

5/11/2023

Date



Jayne Faith
Office of Electricity
Designated Federal Officer
DOE Electricity Advisory Committee

5/11/2023

Date