



**Summary Minutes of the
U.S. Department of Energy (DOE)
Secretary of Energy Advisory Board (SEAB)
Public Meeting**

Advisory Board Members:

In attendance: Arun Majumdar, Chair; Priscilla Almodóvar, Norman Bay, Bryan Garcia, Phil Giudice, Paula Gold-Williams, Shirley Ann Jackson, Tracy Mustin, Maria Pope, Michael Skelly.

Absent: Madelyn Creedon, Trenton Allen, John Dabiri, Kerry Duggan, Denise Gray, Adriana Quintero.

Date and Time: June 13, 2022, 5:04PM-6:00 PM EDT
Location: Webex (virtual)
Purpose: Secretary of Energy Advisory Board (SEAB) Meeting
SEAB Staff: Karen Skelton, Senior Advisor to the Secretary; Christopher Lawrence, Designated Federal Officer and Acting Director of Secretarial Boards and Councils; Isha Korde, Special Assistant, Office of the Secretary.

Meeting summary

This is the fourth Secretary of Energy Advisory Board (SEAB) convened under Secretary of Energy Jennifer M. Granholm. The meeting was conducted virtually by Webex and convened at approximately 5:04 p.m. EDT, with a documented quorum of SEAB members (10). The meeting was attended by approximately 50 attendees, including SEAB members, the public, and members of the press. The purpose of the meeting was to discuss, deliberate, and to vote on approving recommendations from the grid modernization working group.

Public Meeting

Designated Federal Officer (DFO) Christopher Lawrence Mr. Lawrence opened the meeting by addressing housekeeping and logistical items attendant to the meeting. He proceeded by welcoming the SEAB members, and by thanking Karen Skelton, DOE staff members, and members of the SEAB for their attendance. Mr. Lawrence took roll call to ascertain a quorum of attendees for the record. Upon completion of roll call, he introduced Dr. Arun Majumdar, the SEAB Chair, for meeting direction.

SEAB Chair Dr. Arun Majumdar Chair Majumdar thanked Mr. Lawrence and welcomed the attendees to the SEAB. He recounted that the goal of the SEAB was to assist the Secretary of Energy and her team to execute on behalf of the American people. Dr. Majumdar recounted the formation of the grid modernization working group, co-chaired by Michael Skelly and



Norman Bay, and thanked all the working group members for their efforts to bring about the proposed recommendations. He then summarized the process the SEAB would use in the subsequent discussion, voting, remarks from DOE, and public comment. The Chair then turned the meeting over to Michael Skelly for a presentation of the recommendations from the grid modernization working group.

Michael Skelly Mr. Skelly opened his presentation by sharing that the recommendations were based on parts of the Bipartisan Infrastructure Law (BIL), and that both he and the co-chair Norman Bay would be speaking to the recommendations. He further explained that the recommendations pertained to the smart grid program, the transmission facilitation program, and resilience. Mr. Skelly summarized all the people and groups that were interviewed by the working group in order to develop their recommendations.

He explained to the SEAB the background and analysis attendant to the presented recommendations with respect to the Transmission Facilitation Program (TFP). These fell into five categories, with each category having recommended criteria and included:

- Guiding criteria
 - Seek early successes by assisting “shovel ready” projects.
 - Prioritize interstate projects that would facilitate more renewables which otherwise might not be completed.
 - Prioritize projects that facilitate regional power flows.
 - Design a program to facilitate rapid fund recycling.
 - Upsizing of transmission projects in anticipation of future needs to integrate renewables.
- Project Screening criteria
 - Tier 1: Advanced development or “shovel ready” projects. DOE should give priority to these projects as their development status would facilitate construction within the next 24 months.
 - Interconnection agreements signed.
 - At least 90% of the right of way (ROW) was in place, with a clear path forward for the acquisition of the remaining ROW easements.
 - Major permits such as Federal Special Use Permits or ROW on federal land or state Certificates of Public Necessity and Convenience were in place.
 - At least 25% of the project capacity had been sold to others.
 - A third-party study that described why a line is likely to fill up once built.
 - The project was backed by developer or utility with significant financial resources (i.e., developer equity greater than twice the project equity requirements.)
 - Tier 2: Mid stage development
 - Interconnection processes were underway with receipt of System Impact Study.



- ROW acquisitions were underway with some ROW already secured (i.e., 20% ROW secured or 60% applied for.)
- Major permit applications such as Federal Special Use Permits or Rights of Way on federal land or state Certificates of Public Necessity and Convenience had been submitted and were under review.
- Expressions of interest from future capacity customers had been received.
- Compelling explanation of need for the line, either from a project proponent or a third-party study had been presented.
- Financial backing was in place to carry the project through the development process.
- Tier 3: Early-stage projects
 - Interconnection requests had been submitted.
 - ROW process had been clearly outlined and regulatory processes had been initiated.
 - Studies to support major permits were underway.
 - Project rationale had been clearly articulated.
 - Financial backing for early development was in place (i.e., \$5,000 per MW of line capacity.)
- The application process for potential TFP projects
 - It was recommended that DOE accept TFP applications on a rolling basis with projects qualified quarterly. In the case of projects whose development advanced through the tiers, it was recommended that DOE upgrade their status as the developer provided more evidence of advancement.
- Suggested mechanics for capacity purposes under the TFP
 - The following measures were recommended to minimize risk to DOE and to ensure funds were returned to DOE or commitments were released.
 - Project proponents would have sold at least 25% of capacity in order for DOE to purchase any capacity.
 - DOE would purchase up to 50% (but never more than 66%) of available capacity in order to ensure that the project proponents also maintained some investment risk.
 - As a developer sold off its capacity, DOE would have the right to “tag along” on a 2:1 ratio.
- Mechanisms for loans under TFP
 - The working group felt loans might be more advantageous to DOE as opposed to long term capacity commitments because of government accounting rules.

The Chair then opened the floor to the SEAB members for discussion. Following a brief discussion of the TFP recommendations, the co-chair of the working group, Mr. Skelly, introduced the other working group co-chair, Norman Bay.



Norman Bay Mr. Bay led the presentation on the deployment of technologies to enhance grid flexibility and presented the working group's recommendations which included the following:

- Reopening the program for applications in a timely fashion given its previous iteration through the American Recovery & Reinvestment Act of 2009.
- That DOE should provide an opportunity for utilities and developers to apply for project support. To encourage as much innovation as possible independent developers, manufacturers, and others should be able to propose projects to DOE if there is an identified and committed end user and the Qualifying Smart Grid Investment will be deployed within 18 months.
- That DOE should hold a joint technical conference with Federal Energy Regulatory Commission (FERC) to examine how the two agencies together could most effectively collaborate to support Grid Enhancing Technologies (GET) deployment on the grid.
- That DOE should make grants to Regional Transmission Organizations (RTO) to study deployment of GET in their systems. Under the statute, the Secretary may identify "[s]uch other functions" that are necessary or useful to the operation of a Smart Grid.
- That DOE should make technical assistance and modeling resources available to public power utilities as they consider how implementing these innovative technologies would impact their systems.
- Ensure that when a utility deploys GET, installation costs such as RTO software upgrades, personnel training, data links and other costs associated with the deployment of GET qualifies as a match under the bill's match requirements.
- With the increased number of distributed resources, planning and operations is increasingly dependent on accurate forecasting of conditions which are dependent on additional variables that traditional load forecasting techniques are not designed to cover. DOE should seek out opportunities that improve net load and distributed energy resource (DER) forecasting techniques to determine the impact of DERs at each transmission-distribution interface substation.

The working group then proposed the following guiding criteria for implementation of the recommendations to enhance grid flexibility, which include the following:

- Maximize use of existing transmission grid to facilitate high volumes of zero carbon energy.
- Enable projects and technology deployment which would not ordinarily happen on their own.
- Prioritize projects that facilitate regional and interregional power flows.
- Deployment of technologies to reduce bottlenecks in transmission interconnection queues.
- Supporting uses that provide the greatest benefit-cost ratio.



The SEAB Chair invited the working group co-chairs to briefly discuss their thoughts on preventing outages and enhancing the resilience of the electric grid.

Dr. Majumdar then opened the floor to comments and questions for the working group from SEAB members. Mr. Lawrence presented a general comment from SEAB member Dr. John Dabiri, and Ms. Tracy Mustin had a general question for the working group.

Hearing no further discussion, the SEAB Chair proceeded to move to a vote of the SEAB members on the acceptance of the working group's recommendations. Of the ten members present at the meeting, ten voted "YEA", there were no "NO" votes, and there were no abstentions.

The SEAB Chair introduced Jeremiah Baumann, Chief of Staff, Office of the Under Secretary for Infrastructure, for brief remarks.

Jeremiah Baumann: Mr. Baumann expressed his gratitude to the working group for their efforts relative to the grid modernization report. He noted how helpful it was to have such a high level of attention paid to the topic, and he was very comfortable with the process used to generate the report contents. Mr. Baumann was very complementary of the report as it was on point vis-à-vis the Secretary's goal of deploy-deploy-deploy. His comments also included observations on various provisions of the legislation as they related to the grid modernization report recommendations.

Upon conclusion of Mr. Baumann's remarks, the SEAB Chair opened the floor to questions or comments from the SEAB members. Dr. Majumdar then asked the DFO, Mr. Lawrence, to continue with the public comment portion of the meeting. Mr. Lawrence again recounted that each speaker would have three minutes, and then introduced Mr. David Bardin.

Mr. Bardin: Mr. Bardin's remarks consisted of raising five points for the SEAB's consideration. They were:

1. Joe Weiss had discovered evidence that in 2018 and 2019 electric utilities in different states lost monitoring and control of their systems at precisely the same time and for precisely the same duration. His conclusion was that there had likely been an attack on those utilities.
2. Joe Weiss had published evidence that electric utilities, the 'National Electric Reliability Corporation' (*sic*) and perhaps the Federal Energy Regulatory Commission suffered from self-delusion that might cause them to deny existence of control system cyber incidents.
3. Dr. Jeffrey Love, and five other authors published an article concerning mapping the magnetic superstorm of March 1989.



4. He voiced concern that recent research that suggests some stealth coronal mass ejections are speedier and more forceful than we have previously seen.
5. Dr. L. G. Lin has expressed concern that certain US adversaries might have the capability to turn nuclear power plants into super improvised explosive devices.

Mr. Lawrence thanked Mr. Bardin for his remarks. SEAB Chair, Dr. Majumdar noted for the record that Joe Weiss had written to him and provided him with a link to an article, and Dr. Majumdar provided the link in the Webex chat box for all participants to see. Mr. Lawrence then introduced the second speaker, Mr. Tommy Waller, Director of Infrastructure Security, Center for Security Policy for his three minutes of remarks.

Mr. Waller: Mr. Waller's remarks thanked the SEAB for continuing to accept public comment. He proceeded to elaborate on the report written by Dr. Jeffrey Love and the authors' description of the real electric fields were that were produced by the March 1989 magnetic storm, and how this intersected with comments made by Mr. Baumann relative to ground induced current. He proceeded to explain why this should be a concern to the utilities industry in general and the impact on the national grid.

Mr. Lawrence then noted that he had shared a question from Peter Ferrell with the SEAB, and that he would post the question to the SEAB website.

Chair Majumdar thanked both Messrs. Bardin and Waller for their input with the SEAB. He noted that the report of recommendations from the grid modernization working group would be sent to the Secretary. Further, he thanked the entire working group for their collective efforts and adjourned the SEAB.

Meeting Adjourned

Meeting adjourned at 6:00 pm EDT.

Respectfully Submitted:
Christopher Lawrence
Designated Federal Officer



I hereby certify that these meeting minutes of the June 13, 2022 SEAB meeting are true and correct to the best of my knowledge.

Dr. Arun Majumdar
Chair, Secretary of Energy Advisory Board