



**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; Madelyn Creedon, Vice Chair, Trenton Allen, Priscilla Almodóvar, Norman Bay, Kerry Duggan, Bryan Garcia, Paula Gold-Williams, Denise Grey, Phil Giudice, Adrianna Quintero, Michael Skelly

Participating virtually: Tracy Mustin, John Dabiri, Roxanne Brown, Maria Pope, Shirley Ann Jackson

Date and Time: April 19, 2022, 9:00 AM-3:05 PM PDT
Location: Lawrence Berkeley National Laboratory, Berkeley, CA
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.

Speakers: Secretary of Energy Jennifer M. Granholm
Director of Lawrence Berkeley National Laboratory Dr. Michael Witherell
Deputy Director for Energy Justice Shalanda Baker

Working Group Report-Outs

Clean Energy Deployment: Denise Grey

Grid Modernization: Michael Skelly

Place-Based Initiatives: Kerry Duggan and John Dabiri

Meeting summary

This is the third Secretary of Energy Advisory Board (SEAB) convened under Secretary of Energy Jennifer M. Granholm. The meeting was hosted by Berkeley Laboratory and convened at approximately 12:00 p.m. EDT, 9:00 a.m. PDT, with 13 SEAB members attending in person and the remaining 4 attending virtually. The meeting was attended by approximately 75 attendees, including SEAB members, the public, and members of the press. SEAB members heard from Secretary Granholm, Berkeley Lab Director Dr. Michael Witherell, and Deputy Director for Energy Justice Shalanda Baker. The SEAB also received updates from the members of the three working groups to include Clean Energy Deployment (Denise Grey), Grid Modernization (Michael Skelly), and Place-Based Initiatives (Kerry Duggan and John Dabiri).



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, Secretary Granholm, Karen Skelton, and by thanking the DOE and Berkeley Laboratory staffs for their efforts in organizing and arranging the meeting. Mr. Lawrence took roll call to ascertain attendees for the record. Upon completion of roll call, he introduced Dr. Arun Majumdar, the SEAB Chair, for remarks.

SEAB Chair Dr. Arun Majumdar: Chair Majumdar thanked Mr. Lawrence and the rest of the team at DOE for their efforts with SEAB. He also thanked Dr. Witherell and the staff at LBNL for hosting the SEAB, noting that this meeting was the first SEAB meeting that the current SEAB was having in a lab. He proffered his thanks also to the Vice Chair Madelyn Creedon for her work with the SEAB. Following his acknowledgement of the aforementioned people, Dr. Majumdar briefly highlighted the agenda for the meeting. He then shared the professional background of the next speaker Dr. Witherell and introduced him for remarks.

Lawrence Berkeley National Laboratory: Berkeley Laboratory Director Michael Witherell thanked Dr. Majumdar, welcomed everyone, and welcomed Secretary Granholm back to the Lab, where she had visited in August. Dr. Witherell addressed his remarks to the broader laboratory landscape within DOE, and not specifically Berkeley Laboratory. He noted that while this was his second tour of duty as a lab director, his perspective was that the 17 national laboratories were the backbone of our nation's research and innovation ecosystem. He remarked that it was through the consistent support from the Department of Energy and the bipartisan support from Congress, the national labs had been able to develop highly managed teams of the world's best scientists and engineers. He commented that the people who worked on these teams were addressing the grand national challenges of climate science and the science behind it; energy, environment, health, and the economy.

Dr. Witherell discussed work force development at the national laboratories and how important the DOE role was in this area. He stated that it has only been recently that DOE had been acknowledged as having such an important role in developing the science workforce. He further discussed the nexus between the world renown work force of the national laboratories and the world class facilities that were available not only for laboratory personnel use, but by many start-up technology companies as well. He concluded his remarks by noting that the long term federal investment in the laboratories allowed them to be available to do whatever the nation called on them to do, and the current calling was to pursue clean energy technology.

Chair Majumdar thanked Dr. Witherell for his remarks and introduced Secretary Granholm for her remarks.

Secretary Jennifer M. Granholm: Secretary Granholm opened her remarks by sharing her affinity for the work done at the National laboratories, while briefly recounting her work on the



American Jobs Project and the tie to UC Berkeley. She noted that the last time SEAB met coincided with the one-year anniversary of the Biden-Harris administration and how much had happened in the world since then, noting the activity in Ukraine.

She discussed how many in the climate movement and energy space were focused on not only helping our allies with additional shipments of liquefied natural gas (LNG), but on how we as a country could become energy secure. She noted the complications with fossil fuels that continue to add to the energy burden of people, particularly the poorer communities. She stated that the price of oil somewhere around \$110 per barrel underscores the President's goal to get to clean electricity by 2035. The Secretary emphasized her "deploy-deploy-deploy" focus by rhetorically asking how we could do that, noting that it was currently 2022 and that we only had until 2035. She emphasized the importance of the nation getting on the 'on-ramp' noting the time required to get new and additional transmission methods established.

Noting that the strategic petroleum reserve (SPR) had released 180 million barrels of additional oil a few weeks prior, the Secretary shared that the United States, through the International Energy Agency had asked the country's allies to release an additional 60 million barrels of oil. The goal of the request for additional oil was to stabilize the world oil market and accommodate the shortfall of oil on that market, which had been precipitated by the abstinence of procuring Russian oil.

Secretary Granholm touched upon the electrification of the transportation system and the critical minerals required for battery production, noting that no country had ever been held hostage for access to the wind. She highlighted that the Bipartisan Infrastructure Law (BIL) served as the backbone by which the country would achieve the clean energy goals, noting that the Department had made \$3.2 billion available for weatherization of homes and that additional funding would go out late summer or early fall to facilitate the proliferation of EV charging stations throughout the country. The Secretary underscored the President's commitment by noting his invocation of the Defense Production Act with respect specifically to critical minerals.

Concluding her remarks, Secretary Granholm briefly previewed topics that would be covered by Shalanda Baker to include the 22 communities that were honorees of LEAP; ensuring that tribal communities had a seat at the table; and the Justice 40 framework. In conclusion, Secretary Granholm noted that there was much to do and only 690 days remained in the term of the current administration. She then opened the floor briefly to discussion. Participants in the discussion included Chair Majumdar, Michael Skelly, Bryan Garcia, Denise Grey, Madelyn Creedon, and a question from on-line SEAB member Maria Pope. The Secretary subsequently introduced the DOE Deputy Director for Energy Justice, Shalanda Baker.



DOE Deputy Director for Energy Justice Shalanda Baker: Shalanda Baker began the presentation by explaining energy justice, recounting time as a Fulbright Scholar in Mexico City and sharing some observations from a meeting at which uninvited Mexican citizens participated. Their participation demonstrated the lack of energy justice with respect to the Mexican government's energy transition. The presentation continued with a brief discussion of environmental justice, highlighting a study from the Harvard Chan School of Public Health that revealed how a small increase in long term exposure to particulate matter increased the probability of a higher COVID death rate, noting that communities of color were routinely and systematically exposed to pollution.

Next, considering the energy transition, the topic of energy burden was explained, followed by an explanation of energy insecurity. Noting that in a study of the US clean energy transition over the past 20 years, access to rooftop solar had not been equitable with respect to the sample black and brown census tracts, some potential reasons for why that might have occurred were also presented. Ms. Baker followed with an example from Austin, TX, noting that the problem of energy insecurity was structural and systemic. Continuing, a slide depicting a framework for energy justice from the UK noting the elements of distributional, procedural, and recognition justice was shown. A question was then posed to the SEAB members of what aspect of energy justice mattered in the energy transition.

Ms. Baker proceeded to explain the Justice 40 initiative as articulated by Executive Order (EO) 14008 issued on January 27, 2022. The policy priorities include, inter alia, decreasing the energy burden and environmental exposures for disadvantaged communities while increasing parity in clean energy access, low-cost capital, clean energy jobs, and training. This EO is aimed at ensuring that 40% of the overall benefits of certain USG investments in climate and clean energy go to disadvantaged communities. Disadvantaged communities were described as front line, underserved, and underrepresented communities. She then proceeded to describe the Justice 40 infrastructure that had been built within DOE to implement Justice 40. Finally, Shalanda engaged the SEAB members with the question of how the landscape to facilitate equitable BIL implementation could be transformed.

The meeting adjourned for lunch at approximately 2:36 p.m. EDT, 11:36 a.m. PDT and reconvened at 3:02 p.m. EDT, 1:02 p.m. PDT. The DFO called the meeting to order and again introduced SEAB Chair Majumdar who continued with the agenda by introducing the three SEAB working groups (Clean Energy Deployment; Grid Modernization; Place-Based Initiatives) and the members who presented their working group status updates.

Accelerating Clean Energy Deployment (Co-Chairs Phil Giudice and Denise Grey)

The goal of this working group is to assist DOE leadership in accelerating the transition to a thriving zero carbon economy maximally utilizing private and nonfederal capabilities and resources. Denise Grey presented the three goals of this working group which included understanding the current and expected market dynamics that have increased private sector



investment in some clean economy technologies; enhancing the likelihood that great sustainable new business opportunities are created from this transition for all shareholders including those that have never participated in DOE or federal programs; and to develop ideas for how DOE could assess the investment landscape and better project where the private or other non-federal capital flows in select zero carbon energy and supply chain verticals were headed. The DOE interfaces for this team are Kathleen Hogan, Acting Under Secretary for Infrastructure, and Ali Douraghy, Chief of Staff, Office of the Under Secretary for Science and Innovation. Denise articulated the working group's next steps as delivering actionable insights and recommendations to DOE on best practices and considerations for maximally leveraging public and private sectors to obtain a zero-carbon economy with potential particular focus on carbon removal, energy storage, hydrogen, and supply chain minerals.

Grid Modernization (Co-Chairs Michael Skelly and Noman Bay)

The focus of this working group (as articulated by Michael Skelly) is to tackle different parts of the infrastructure bill framed by guidance from the Department relative to prioritizing areas in which the Department felt they needed input with respect to the Transmission Facilitation Program and the Smart Grid Investment Program. The aim of the Transmission Facilitation Program is to enable DOE to finance and enter capacity contracts with new or upgraded transmission facilities with ≥ 1000 MW of capacity. The guidance to the working group has been to prioritize interstate projects that facilitate renewables and regional power flows; design a program to facilitate rapid fund recycling; and upsize transmission projects in anticipation of future renewables integration. The working group has developed draft project screening criteria which include projects that are in advanced development or 'shovel ready' (Tier One); projects that are in mid-stage development (Tier Two); and projects that are in the early stages (Tier Three).

The aim of the Smart Grid Investment Program is to accelerate the integration of smart grid functionality including, but not limited to, dynamic line rating, software enhancement, and advanced conductors, etc. The guidance to the working group for this effort has been to maximize use of existing transmission to facilitate high volumes of zero carbon energy; enable projects and technology deployment that would not happen on their own; and to prioritize projects that facilitate regional and interregional flows, "debottle-necking" transmission interconnect queues providing the greatest benefit-cost ratio.

As well, the working group drafted a concept for an interregional resiliency matching grant program.

Place-Based Initiative (Co-Chairs Kerry C. Duggan and John Dabiri)

Using the "Place-Based Initiative" table as a framework, the working group has developed the 5 Ps of the working group which represent People, Places, Peer-to-Peer Learning, Partnerships, and Programs. The objective of the "People" title is to continuously support recruitment of DOE



talent through the clean Energy Corps. The “Places” title is to provide available technical assistance to local and state governments, while considering funding that prioritizes Justice 40, and rural, tribal, island, and other marginalized communities. The “Peer-to-Peer Learning” focus is to create and refresh mechanisms for ongoing dialogue between DOE and local and state government, tribes, utilities, and non-profit stakeholders. The objective of the “Partnership” title is to provide strategies that would increase DOE’s presence at the local and state level to advance the objectives of the BIL and the Biden administration goals. The “Programs” title is aimed at providing guidance as requested from DOE staff to support their efforts to advance S-1’s goals.

Likewise, the working group developed their 5 C’s, which include Culture, Capacity, Capital, Creativity, and Continuity. These address the need to drive transformative Cultural shift; increase DOE Capacity, accelerate investment and deployment of Capital, advance Creative solutions, and ensure Continuity.

Public Comment Period

There were five requests for public comment.

Sean O’Leary: Mr. O’Leary is a Senior Researcher at the Ohio River Valley Institute which serves the region of Appalachia being promoted as a site for the development of a blue hydrogen and carbon capture hub. He understood the belief that carbon capture would lead to a cleaner environment while preserving jobs in areas that feel threatened by the clean energy transition but opined the belief that blue hydrogen and carbon capture would benefit his region economically is misplaced and even dangerous. He stated that it would save few if any jobs and would act as a barrier for his region from joining the rest of the nation in transition to clean electricity. He stated that since the Appalachia natural gas boom began, areas that produce 90% of the natural gas have seen almost zero job growth, and trail that of the nation. The natural gas industry economics are detrimental to his region as are the coal industry economics. He stated that except for niche industries, carbon capture is an absurdly uneconomical technology for which there are less costly and more effective clean energy alternatives. The Ohio River Valley Institute has developed an alternative model called the Centralia Model and urged the Department to consider supporting that model.

Tommy Waller: Mr. Waller is the Director for Infrastructure Security at the Center for Security Policy, which is a nonprofit, nonpartisan, educational organization focused on encouraging national security policy to preserve freedom for this generation and the next. In response to the comment by the Secretary that the cheapest form of fuel is the fuel that is not used, Mr. Waller asked that the Secretary consider the option of the 83,000 tons of spent nuclear fuel at 75 sites across the nation. He opined that the spent fuel rods were really batteries of sorts which could provide clean energy for hundreds of years. This idea had been proposed in the



previous two SEAB meetings, with the recommendation that it be adopted by the Department as an 'Earth-shot' initiative. Mr. Waller continued by explaining the risks associated with utilization of spent nuclear fuel, highlighting the concern that a loss of electricity in the cooling function associated with storage of the spent fuel rods would potentially result in the boil-off of cooling water in cooling pools, potential releasing more Cesium (Cs)-137 than all of the previous nuclear weapons tests conducted in the northern hemisphere. He encouraged the SEAB to engage the NRC relative to PRM 50-96, and to engage the national laboratories relative to high reliability back up power generators for cooling of the spent fuel.

Joe Weiss: Mr. Weiss began by recalling a comment by Dr. Witherell regarding the reason for the national laboratories' creation, which was to address large technical national challenges. As in the previous SEAB meeting's comment period, Mr. Weiss explained that control systems consist of field devices such as process sensors and OT networks. The cyber security emphasis has been on computer networks, patching software, zero trust, and multi-factor authentication. Meanwhile, process sensors have no cyber security but are 100% trusted by the control systems and the operator and alarm displays that use the process sensor input. The sensors are insecure because the microprocessors must be of low enough power to not be subject to explosions from fugitive emissions. His concern is that the process sensors have no cyber security associated with them and they are connected directly to the internet. He encouraged the national laboratories to pursue research and act on this issue.

Seth Kirshenberg: Mr. Kirshenberg is the Executive Director of Energy Community Alliance. Mr. Kirshenberg applauded the efforts of the SEAB working group dealing with place-based initiatives. Specifically, he acknowledged DOE's Kate Gordon for all the great work she and the working group were doing with front line communities around various DOE sites. He explained that more than 20 of these communities had submitted projects that could fall under the infrastructure bill. He further described his literary efforts in supporting the purchase of clean energy by the various offices and sites of DOE and urged the Department to set metrics relative to the purchase of clean energy, much as the Department of Defense had done. By doing so, DOE facilities would have incentive to ensure their purchase of clean energy. He closed his remarks by expressing his gratitude for the work of the SEAB.

The comment period concluded. Secretary Granholm offered her appreciation for the public comments.

Mr. Lawrence read a statement into the minutes of the SEAB meeting for a fifth individual who was unable to attend the public comment period.

Chair Majumdar and Vice Chair Creedon offered brief closing remarks, and subsequently moved to adjourn the meeting.



Meeting Adjourned

Meeting adjourned at 6:04 pm EDT, 3:04 pm PDT.

Respectfully Submitted:
Christopher Lawrence
Designated Federal Officer

I hereby certify that these meeting minutes of the April 19, 2022 SEAB meeting are true and correct to the best of my knowledge.

Dr. Arun Majumdar
Chair, Secretary of Energy Advisory Board