

Summary Minutes of the

U.S. Department of Energy (DOE) Secretary of Energy Advisory Board Public Meeting

Committee Members: John Deutch, Chair; Arun Majumdar, Vice Chair; Rafael Bras; Albert Carnesale; Deborah Jin; Paul Joskow (via teleconference); Michael McQuade; Richard Meserve; and Dan Reicher

Date and Time: December 3, 2014, 9:00 AM - 12:15 PM MST

Location: National Renewable Energy Laboratory (NREL) Education Center
15013 Denver West Parkway, Golden, CO

Purpose: Meeting of the Secretary of Energy Advisory Board (SEAB)

SEAB Staff: Karen Gibson, Designated Federal Officer; Corey Williams-Allen, Deputy Designated Federal Officer; Matthew Schaub, Deputy Director

DOE Staff: Deputy Secretary Elizabeth Sherwood-Randall; David Danielson, Assistant Secretary for Energy Efficiency and Renewable Energy; Minh Le, Director of Solar Energy Technologies, Office of Energy Efficiency and Renewable Energy; and Lidija Sekaric, Program Manager for Technology to Market, Office of Solar Energy Technologies, Office of Energy Efficiency and Renewable Energy

Meeting Summary

This meeting was the quarterly meeting of the Secretary of Energy Advisory Board (SEAB). SEAB members heard opening remarks by SEAB Chair John Deutch, Vice Chair Arun Majumdar, and DOE Deputy Secretary Elizabeth Sherwood-Randall. Following the opening remarks, the first agenda item consisted of updates from the chairs of the Nuclear Nonproliferation Task Force and the National Labs Task Force. An opportunity for public comment followed a discussion on recent SEAB task force reports on High Performance Computing and Technology Development for Environmental Management. The members then received an overview of the SunShot Initiative by Minh Le, Director of Solar Energy Technologies, Office of Energy Efficiency and Renewable Energy and Lidija Sekaric, Program Manager for Technology to Market, Office of Solar Energy Technologies, Office of Energy Efficiency and Renewable Energy, followed by a briefing on Clean Energy Manufacturing by David Danielson, Assistant Secretary for Energy Efficiency and Renewable Energy.

Opening of Public Meeting

SEAB Chair John Deutch opened the meeting, welcoming Deputy Secretary Elizabeth Sherwood-Randall and thanking Dan Arvizu, Director of NREL, for hosting the board. Deputy Secretary Sherwood-Randall thanked SEAB for the recent work of its Task Forces, including FracFocus 2.0, Nuclear Nonproliferation, and Technology Development for Environmental Management. She noted that many challenges remain in the areas of management and performance, MOX, and infrastructure improvements in a constrained budget environment. She is looking to SEAB to help generate realistic and creative options for advancing the Department's missions in science and energy, nuclear security, and management and performance.

Comments from SEAB Leadership

Chair John Deutch announced that Arun Majumdar will serve as Vice Chair to SEAB and that Ellen Tauscher will join the board. Majumdar said it was a privilege to serve on SEAB and he is looking forward to helping to provide value in the long-term for institutionalizing the changes the Secretary is making.

Updates from SEAB Task Force Chairs

The Task Force on Nuclear Nonproliferation Chair, Albert Carnesale reported that the task force's interim report was penned as the crisis in Ukraine developed and the final report containing a prioritized list of recommendations will be due at the next SEAB meeting. He also noted that he was pleased with the extent to which the preliminary recommendations of the Task Force have been accepted and actions have been taken within DOE, i.e. establishing a Department-wide nuclear policy council, creating a DNN Lab Council, and drafting a biannual report to Congress on non-weapons national security activities.

The National Labs Task Force Chair, John Deutch reported that three task force working groups had been formed. He announced that preliminary findings from the Management and Operations (M&O) Contracts, Technology Transfer (TT), and Laboratory Directed Research and Development (LDRD) working groups would be discussed in an afternoon task force session. The M&O working group has found wide variation among contracts and will explore ways of improving the M&O contract system. The TT working group is looking at how, in a sensible way, to get the technology being developed in the labs out into the economy and how to help the labs try out some experiments on technology transfer. The LDRD working group is charged with better understanding LDRD – its uses and its impact.

Discussion and Public Comment on SEAB Task Force Reports

Technology Development for Environmental Management (EM) Task Force Chair, Richard Meserve reported that DOE has spent over \$150 billion to date on Environmental Management. With a budget of \$200 billion clean up could be completed by 2060. In a constrained budget environment, incremental costs could balloon from \$300 billion to \$335 billion and exceed the 2060 timeline due to costs associated with compliance and with property infrastructure maintenance. Savings can be reached by investing in technology research for EM to shorten the cleanup timeline. The task force proposes funding research in high impact technology, incremental technical improvements, and in fundamental research as well as focusing recruiting efforts to ensure a pipeline of new talent to the field. It was suggested that the report include a mention of subsurface science and include a brief history on EM technology research along with suggestions for improvement.

Next Generation High Performance Computing (HPC) Task Force Co-Chair, Michael McQuade indicated that following the issuance of the task force report in August 2014, the Secretary requested follow up from the task force on three topics related to cost, enhanced use, and structure for an HPC research program. The exascale investment includes R&D spending and periodic acquisition of new leadership machines. The Task Force envisions a decade long program, leading to delivery of a full machine in the 1-10 exaflop range by 2025. The response included recommendation of a number of actions DOE could undertake to enhance the utilization of HPC by the industrial community. Finally the Task Force recommended that DOE invest to maintain and strengthen the computational ecosystem, including work with universities. The HPC co-chairs will work with the DOE Congressional Affairs office to arrange briefings on the Hill.

Public Comment

No Public Comment. The report of the Task Force on Technology Development Environmental Management is available on the SEAB website and public comment will be accepted through December 12, 2014.

Overview of the SunShot Initiative

Minh Le, Director of Solar Energy Technologies, and Lidija Sekaric, Program Manager for Technology to Market, Office of Solar Energy Technologies, Office of Energy Efficiency and Renewable Energy provided SEAB members with an overview of the SunShot Initiative, a collaborative national effort to reduce the total cost of solar by 75%, making it competitive with other energy sources, by 2020. SunShot has made substantial progress toward this goal of \$0.60 per kWh. This administration has seen a 13 fold increase in solar installations with more than 143,000 solar workers, 10% of which are veterans. Yet, solar still only accounts for approximately 1% of the nation's electricity generation capacity. High capital costs for large-scale deployment remain a barrier. In 2014, SunShot has enhanced US leadership in research and development, developed new financing tools to deploy solar, continued to train a skilled solar workforce, supported American solar manufacturing, cut solar soft costs, engaged with utilities, and made major progress toward the Sunshot affordability goal. The final push towards SunShot's goals will include streamlining grid integration, promoting affordable storage, supporting access to capital, a well trained workforce, and robust domestic manufacturing.

Briefing on Clean Energy Manufacturing

David Danielson, Assistant Secretary for Energy Efficiency and Renewable Energy briefed SEAB members on clean energy manufacturing. Clean energy manufacturing fits into the Department of Energy's mission to enhance U.S. security and economic growth through transformative science, technology innovation, and market solutions to meet our energy, nuclear security, and environmental challenges; and is consistent with congressional direction to focus on "Advanced Manufacturing activities, as well as research and development across the Department, to ultimately create manufacturing jobs in the United States." Key elements of DOE's Clean Energy Manufacturing Initiative include: advanced manufacturing R&D and scale-up demonstration efforts, commercial scale manufacturing plants, consortium based platform manufacturing technology R&D centers, competitive analysis, and public-private partnerships to address market barriers.

Meeting adjourned at 12:15 PM.

Respectfully Submitted:

Karen Gibson
Designated Federal Officer

I hereby certify that these minutes of the December 3, 2014, SEAB meeting are true and correct to the best of my knowledge.



John Deutch
Chair