

Summary Minutes of the

US Department of Energy (DOE)
Secretary of Energy Advisory Board
Public Meeting
January 20, 2011

Committee Members: William Perry, Chair; Alexis Herman, Vice Chair; Ralph Cicerone; John Deutch; Nicholas Donofrio; Matt Rogers; Arthur Rosenfeld; Susan Tierney; Steven Westly; Daniel Yergin

Date and Time: 9:00 AM- 4:00 PM, September 16, 2010

Location: US Department of Energy, 1000 Independence Avenue, SW, Room 1E-245
Washington, DC

Purpose: Meeting of the Secretary of Energy Advisory Board

SEAB Staff: Amy Bodette, Designated Federal Officer

DOE Staff: Steven Chu, Secretary of Energy; Daniel Poneman, Deputy Secretary; David Sandalow, Assistant Secretary for Policy and International Affairs; Bill Brinkman, Director, Office of Science; Karina Edmonds, Director, Tech Transfer

Meeting Summary

SEAB members heard opening remarks from Chairman Perry and Secretary Chu. The first session was a discussion of technology gaps that exist and how to fill these gaps. The second half of the meeting focused on reports from established subcommittees and discussion of the formation of new subcommittees. The discussion followed the issues and timing as presented in the meeting agenda.

Opening of Public Meeting

Chairman Perry opened the meeting with introductory remarks highlighting energy dependence as a serious national security issue and carbon dependence as a serious environmental issue and dealing with both of these issues is a vital American interest. The Department of Energy must pursue innovation. There will be a focus on efficiency, including surveying what technology exists, stimulating new technology, and accelerating commercialization. It is important for SEAB to determine what other commissions and Boards are doing similar work and coordinate in a complementary way. The Board also discussed, with input from Deputy Secretary Daniel Poneman, how the Department of Energy can be helpful to the Department of Defense in achieving their energy goals.

Secretary Chu discussed high-tech and high quality manufacturing. The United States has been the leader, however, Secretary Chu has been hearing anecdotes that companies do not feel they can get a quality supply chain in the United States. Quality manufacturing is crucial to American prosperity. We have the ability to recapture quality manufacturing and Secretary Chu would like advice on what should be done and actions we can take.

Secretary Chu also raised the problem of U.S. companies leaving the country and setting up shop in China to take advantage of financing and subsidies. The U.S. federal government must strike a balance between over subsidizing and under subsidizing. The administration, per executive order, will examine federal regulations and evaluate which regulations are inhibiting innovation.

Finally, Secretary Chu raised the Department of Energy's regulatory role in appliance standards. A central question is if the standard will save the consumer money over the life cycle of the appliance. We must strive for a well designed standard, not a too high standard that drives up the cost. Over time standards must change to allow for changes in manufacturing and learning curves. The process must be transparent. The US must lead in standards to compete in international markets.

Technology Gaps Session

The technology gaps session was kicked off by Karina Edmonds, Director of Tech Transfer for the Department of Energy. She began by giving a brief summary of her work with the National Labs to create an entrepreneurial spirit and encourage labs to involve industry at the beginning of the tech transfer process. Edmonds is reviewing all of the tech transfer policies that are currently in place with the goal of lowering transactional costs for doing work at a DOE lab. Another goal is to encourage labs to embrace startups and consider policy that is beneficial to startups. There are efforts underway, notably at Lawrence Livermore Laboratory, to create campuses and research parks. One point of discussion was the entrepreneurial leave policy in labs to allow scientists to be involved in industry. There was debate about the amount of leave that is beneficial. Member Deutch believes that it is not as easy to leave and come back as it once was.

Bill Brinkman, Director of the Office of Science cited a few examples of technology gaps that exist in materials, chemistry, fuel from the sun, LED bulbs, and carbon capture and sequestration technology. The Office of Science is making strides in biofuels. DOE has Energy Frontier Research Centers (EFRCs) that are doing research in these areas. The Basic Research Needs reports are a good source to determine gaps.

Assistant Secretary David Sandalow discussed two aspects of technology gaps; foreign partnerships and critical materials and material inputs into clean energy technology. On the topic of foreign partnerships, Sandalow highlighted a recent trip to China and witnesses the significant scaling up and rapid technology deployment. China and the United States have a lot to learn from each other and a foreign partnership is essential. The Department of Energy is involved with the US-China Clean Energy Research Center which is focusing on buildings, vehicles and coal. Ultimately, technology is a global issue and we are working with India, Europe, and others.

Approximately one year ago the Department launched an effort to look at material inputs to clean energy technologies with a focus on wind, existing buildings and PV; partly focused on rare earths, lithium, cobalt, gallium, tellurium and indium. The first discovery was that data gaps are enormous. This resulted in a data call that produced a 200 page report. The summary recommendations for energy were to globalize supply chains and develop substitutes.

Power electronics, utility equipment, transmission and demand side management were all sited as huge technology gaps. These examples led to a discussion about Smart Grid, which is a multi-agency problem. There is a serious need to update the grid to make it more stable against disruptions. The major problems include cost allocation and cross-jurisdictional coordination. The Department of Energy is making advancements with modeling and simulation and high-performance computing. It is necessary to work with industry to let them know what we need. The Board discussed creating a subcommittee on Smart Grid, but decided against it in favor of further briefings.

Subcommittee Report from the Task Force on Technology Transition

The subcommittee on Technology Transition is chaired by Dr. John Deutch. Other SEAB members on the task force include Norm Augustine, Chad Holliday, and Michael McQuade. Matt Rogers was not a SEAB member at the time he joined the task force, but has since joined SEAB. Non-SEAB members include Kathleen McGinty, Michael Greenstone, and Ernie Moniz. The group met for the first time on January 5th. The task force is addressing DOE's responsibility to move technology, once it is developed, into a candidate for commercial application. The task force does not believe that DOE is responsible for deploying the technology, but is responsible for putting policy in place to move technology from a project into a potential for commercial application. Eventually, the task force will provide advice to strengthen the process by which decisions get made about technology demonstrations and what mechanisms can be used to support them. The two valley of death concept will also be examined. Recommendations for the Department of Energy from the PCAST report were shared with the members of the task force by task force member, Ernie Moniz. One recommendation that was focused on was the suggestion that it is important for the Department to have a systematic, comprehensive energy plan to guide policy and technology efforts. This would be done through the Quadrennial Energy Review (QER). The subcommittee plans to have initial views in April or May.

Report from the Building Energy Efficiency Subcommittee

The subcommittee on Building Energy Efficiency is early in formation and currently has three SEAB members including, Steve Westly, Art Rosenfeld and Michael McQuade. They are working to expand their membership outside of SEAB members. At this stage they have begun to collect information from Department of Energy staff, Department of Defense staff and White House staff. There are three central questions to the work of the subcommittee: Is DOE focusing on the right areas to incentivize building energy efficiency; are these efforts being fully integrated within government and then handed-off to the private sector; is DOE tracking the best practices from around the country and world? A number of other issues pertaining to buildings, both inside and skins, were discussed as possible topics

to add to the charge. Member Westly will compile a menu of options for overall building efficiency and bring it back to the group for discussion.

Subcommittee Formation

There was a suggestion to establish a subcommittee to work with the Department of Defense on their mission to increase the use of alternative energy and efficiencies and decrease overall energy use. This subcommittee was tabled. The Advisory Board will be briefed on the current state of play at the April meeting.

The second new subcommittee idea discussed was on the topic of natural gas, including shale gas. It was determined that there are two important policy issues worth discussing. One is the removal of gas from the earth, specifically technologies involved. The other issue is the market for natural gas and determining if there are policies that are appropriate on the use side. It was proposed that the subcommittee also look at where DOE research could make a material difference. Members of the advisory board warned that this process must be managed properly to be beneficial. This committee was formed. At the end of the meeting Susan Tierney, Nicholas Donofrio and Daniel Yergin were suggested for the subcommittee on natural gas. A terms of reference will be drafted and membership solidified by the April meeting.

Finally, there was discussion if there should be a subcommittee on Smart Grid. It was determined that the full advisory board would like a briefing on the topic at the next meeting before deciding to form a subcommittee.

Respectfully Submitted:

Amy Bodette, Designated Federal Officer

I hereby certify these minutes of the 1/20/11 SEAB meeting are true and correct to the best of my knowledge.

William J. Perry
Chair