

Summary Minutes of the

**U.S. Department of Energy (DOE)
Secretary of Energy Advisory Board (SEAB)
Public Meeting
July 19, 2012**

Committee Members: William Perry, Chair; Norm Augustine; Ralph Cicerone; Nick Donofrio; Michael McQuade; Matt Rogers; Art Rosenfeld; Sue Tierney; Steven Westly; Daniel Yergin

Date and Time: 3:00PM – 4:30PM, July 19, 2012

Location: Teleconference

Purpose: Meeting of the Secretary of Energy Advisory Board

SEAB Staff: Amy Bodette, Designated Federal Officer
Alyssa Morrissey, Deputy Designated Federal Officer

Meeting Summary

SEAB Members convened by teleconference to hear updates from the Building Efficiency and Small Modular Reactor (SMR) Subcommittees. After the Subcommittee reports and questions from the full Committee, there was an opportunity for public comment. With no requests to comment, Chairman Perry called the meeting to a close.

Opening of Public Meeting

Full SEAB Committee Chairman William Perry began the call by announcing that a quorum of the committee was present. The Chairman called the meeting to order and introduced Steve Westly, Chairman of the Buildings Subcommittee, who gave an update on Subcommittee activities and the status of its draft report.

Buildings Subcommittee Report Update

Subcommittee Chairman Steve Westly began by thanking the Buildings Subcommittee members and support staff. He noted that although buildings use 40% of the nation's energy, there have been relatively few changes in technology that have been adopted over the past few decades. He presented energy efficiency in buildings as a ripe opportunity to reduce the nation's energy use.

Mr. Westly reported that there have been several briefings and calls, during which the Subcommittee spoke with a number of representatives from the public and private sector. The structure of the report will include 10 primary recommendations with a number of secondary recommendations. As per the scope of work, the report will focus on: 1) Current planned DOE activities, 2) What DOE can do to accelerate building energy efficiency, 3) Coordinating different points of view within DOE effectively, 4) Coordination between DOE and other government agencies, 5) Policy-making process and outreach, 6) Data on best practices inside and outside of the United States and DOE's coordinating role therein. The

report will also examine which technologies might be changing most quickly and what the lowest-hanging fruit is with regard to energy efficiency improvements in buildings. Mr. Westly said the Subcommittee would work to finalize a draft for submission to the full Committee to review, with a goal of discussing certification at the next full SEAB meeting in November.

Michael McQuade noted that the Subcommittee framing document clearly identified the key areas, and the Subcommittee's added focus during the last couple of months was on calling out specific technologies to highlight and identifying the shortest-term opportunities under the control of DOE to improve demonstration capability and intergovernmental cooperation.

Art Rosenfeld said his contributions to the report had focused on how well DOE is doing and where it can improve, and he wished to underscore a couple of developments that the Office of Energy Efficiency and Renewable Energy has achieved in the last few years. The first example Dr. Rosenfeld highlighted was the Buildings Performance Database, a database that DOE put together that makes it possible to assemble and compare data from different entities that has historically been presented in disparate formats. The other example is the stretch advisory/voluntary standard for rooftop unit (RTU) air conditioners evaluates RTUs at four different percentages of peak load, rather than only at peak load. Dr. Rosenfeld expressed his hope that the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) will incorporate that stretch standard and within a few years make it the standard for the country. Most of the savings that would be realized would be during peak power times, making it especially valuable.

SEAB Committee Questions and Discussion regarding the Buildings Subcommittee Update

Chairman Perry asked the Subcommittee members to expound on the potential energy savings in the United States through buildings energy efficiency. Mr. Westly noted that when power plants must be taken offline, it could take several years to produce the same amount of power through new plant construction. Adapting energy efficient technologies, on the other hand, might be able to fill that void in a much shorter timeframe.

Dr. Rosenfeld highlighted the issue of peak power: it is expensive to have power plants and substations standing by when peak power is used only a tenth of the time. Utilities are eager to have peak power reduced. As to the overall potential for energy savings through efficient buildings, one has to distinguish between new buildings and retrofitting existing substandard building. There is much more potential for high-efficiency buildings in rapidly growing economies that will have new construction as opposed to the United States where older buildings already in existence are difficult to upgrade.

Dr. McQuade said that on the retrofit side, even though goals are technically viable, success will be dependent on the availability of capital and financing.

Chairman Perry asked if people taking advantage of the technical opportunities to realize these savings and whether the U.S. has sufficient policies in place for people to take advantage of the potential benefits.

Dr. McQuade said that people are not taking full advantage due to unavailability of capital – substantial incentives and capital availability advances must take place for the public to take full advantage of the possibilities available.

Matt Rogers said we are only beginning to take advantage of these technologies. Main factors affecting the uptake of new technologies are the availability of capital and of information. People are just beginning to be able to get information on the payback they will get for making a particular energy efficiency investment. With this data, people can better take advantage of the technologies that are available.

Chairman Perry asked if utilities are taking action, or whether they need additional incentives or regulations to disseminate this information.

Mr. Rogers said the information distribution is beginning, but homeowners still know more about the potential of termite infestation than about energy use when they buy or sell a house.

Chairman Perry asserted that government should lead the way here – DOD took the initiative to get that information available to consumers in military housing.

Dr. Rosenfeld noted that in California, under the leadership of the California Public Utilities Commission, utilities have installed 12 million smart meters and time-of-use pricing will start in 2013. It already exists in the commercial sector for every building above 50 kW. Because this is a real challenge for utilities, the hope is that it goes well in California so the rest of the country will be encouraged to adopt similar structures.

Sue Tierney wished to make three points about buildings energy efficiency. 1) In response to the Chairman's question on what the energy savings potential is with energy efficiency in buildings, there is tremendous conversion loss associated with electricity production and delivery. Thus every improvement in building efficiency is a huge gain in the upstream efficiency. 2) One of the most intriguing financing mechanisms in play affects not only building energy efficiency investments but also the use of localized energy sources such as solar: tying the financing to property taxes. 3) There is an important moment of opportunity associated with efficiency now in areas of the country where there has been traditionally a lot of coal for power generation and relatively low electricity prices. As the oldest coal plants need to retire, one of the "lowest-hanging fruits" is energy efficiency improvements.

Dr. McQuade congratulated the Buildings Energy Innovation Hub on being an instrumental force in recently enacted regulations in Philadelphia requiring large buildings to have mandatory reporting, following NY and CA in this regard. He said this success is a direct result of DOE investment.

Ralph Cicerone asked if it is appropriate for the report to mention the building energy efficiency goals of other Federal agencies and departments.

Dr. McQuade said it is appropriate to a certain extent. It is part of the charge to make recommendations to DOE about how they should play a role in making sure there is coherence among those goals and making the goals visible.

Dr. Rosenfeld said it should be publicized that public buildings (Federal buildings, schools, GSA-operated buildings, etc.) are the ones that have shown real success in energy efficiency. During the last decade, residences' use of electricity per square foot stayed constant, principally as a result of better appliances. Commercial buildings' electricity use per square foot went up 11% as electrification increased loads and all-glass buildings had solar gain. In contrast, federally managed buildings went down 11%. The Federal

Energy Management Program (FEMP) data show that the government has done a great thing by going in for stretch standards in new buildings and retrofits and better management in general.

Dr. Tierney said the same observations can be made in Massachusetts with regard to FEMP and State programs. One of the aspects of many of the energy savings programs out there is that the expectations of savings are built off engineering analyses created over many years. Something useful to add would be to have robust after-the-fact verification programs giving an indication of realized savings, now that we've had decades of investment in some utility and FEMP programs.

Daniel Yergin observed that the Subcommittee members are deeply familiar with energy efficiency and conservation and wondered if there was anything that stood out to the group as anything new or surprising in the course of its information gathering.

Dr. Rosenfeld said the surprise to him was how well time-dependent pricing works, particularly with regard to air conditioning. Seasonally, there are huge changes. With time-dependent pricing, we find that if we raise the price during the hottest days of the year, people respond out of spontaneous interest and achieve savings of 1kW per house. People are more likely to do things on the hottest days of the year they wouldn't be willing to do on a random day out of the year.

Mr. Westly said what was most striking is how quickly the prices are coming down in the different facets of buildings energy efficiency. People were talking about \$50 light bulbs very recently and now we are seeing that consumers are making investments with a 24-month payback. This is an area that doesn't require excessive government subsidies or programs, but rather thoughtful financing programs. Also, rarely do consumers spend so much on something as on energy bills without having any control over it. For the first time, the handheld device revolution allows people to know how much energy they're using at home to make smarter choices and realize it isn't difficult to use less.

Chairman Perry said it was a very encouraging update from the Subcommittee. Most of the discussions on energy have been on supply, but the discussion indicated that huge savings can be made on the demand side if done properly. He reiterated the discussion points about government buildings setting the example, and consumers receiving the information to make smart decisions about their energy use.

SMR Subcommittee Report Update

The Chairman introduced Nick Donofrio, SMR Subcommittee Chairman, who provided an update on recent meetings and the Subcommittee's drafting plan.

Mr. Donofrio thanked the members for their work on the SMR Subcommittee. From the full SEAB, this includes Norm Augustine, Frances Beinecke, and John Deutch. The additional members of the Subcommittee are Jim Baker, Al Carnesale, Bruce DeMars, Andy Kadak, Bill Madia, Dick Meserve, and Burt Richter. The Subcommittee held meetings on July 18 and the morning of July 19. The meetings refocused the group on its charge and established a clear path forward. Mr. Donofrio noted that DOE is currently going through a procurement process that will eventually select two designs for the purpose of licensing and permitting of SMRs. That funding opportunity has been completely separate from the SMR Subcommittee deliberations. The Subcommittee charge from the Secretary is to provide advice and counsel on safety, security, and nonproliferation of SMRs; as well as feedback on challenges, uncertainty, and risk to commercialization and the needed policies for the risks to be mitigated.

At the July meetings, the Subcommittee was briefed on advanced SMRs that go beyond light water reactors. Members also heard about the international market and its possibilities as well as possibilities from an export perspective. One of the members of the Subcommittee, Andy Kadak, received input from utility providers and vendors prior to the meeting and shared their perspective. Bill Madia gave a summary of a meeting of an energy community group. At this point, the Subcommittee members are processing the information they received and are drafting recommendations. Mr. Donofrio noted that anyone who wishes to review the information the Subcommittee has received can visit its website where the documents are posted.

The Subcommittee's timeline is to have the report drafted and ready to be circulated by mid-October to be ready for the next full SEAB meeting in November.

SEAB Committee Questions and Discussion regarding the SMR Subcommittee Update

Dr. McQuade asked whether the report would reference what can be scaled and what cannot with regard to small reactors, particularly concerning safety.

Mr. Donofrio responded that the Subcommittee members had an extensive debate on that and will highlight the discussion and make recommendations in the draft report.

Mr. Rogers asked what the implications are of SMRs on spending and research priorities at National Laboratories.

Mr. Donofrio noted that there is advanced reactor research out of Idaho National Laboratory, and part of the report will address supporting the reactor research that will have a benefit on SMRs.

Public Comment

No members of the public wished to comment.

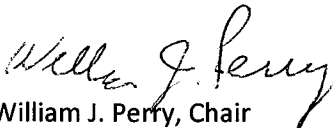
SEAB Committee Discussion and Chair Wrap-Up

Chairman Perry asked whether there were any additional comments from the Committee. With no additional comments to be heard, he adjourned the call.

Respectfully Submitted:

Alyssa Morrissey, Deputy Designated Federal Officer

I hereby certify these minutes of the 7/19/2012 SEAB meeting are true and correct to the best of my knowledge.


William J. Perry, Chair