

Summary Minutes of the

**U.S. Department of Energy (DOE)
Secretary of Energy Advisory Board (SEAB)
Public Meeting
November 14, 2011**

Committee Members: William Perry, Chair; Norm Augustine; Ralph Cicerone; John Deutch, Nick Donofrio; Chad Holliday; Michael McQuade; Matt Rogers; Art Rosenfeld; Steven Westly

Date and Time: 2:00PM – 2:45PM, November 14, 2011

Location: Teleconference

Purpose: Meeting of the Secretary of Energy Advisory Board

SEAB Staff: Alyssa Morrissey, Designated Federal Officer for the SEAB Committee
Renee Stone, Designated Federal Officer for the Shale Gas Subcommittee

Meeting Summary

SEAB Members convened by teleconference to discuss the Second 90-Day Report of the Shale Gas Subcommittee. John Deutch gave an overview of the report, which was followed by a public comment period. SEAB members discussed the report and came to an agreement that the report should be put forth to the Secretary with minor changes. Chairman Perry adjourned the Shale Gas Subcommittee, noting that its terms of reference had been met through the finalization of the report.

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 asked John Deutch to report on the Second 90-day Shale Gas Subcommittee Report and comments thereof.

Overview of Second 90-Day SEAB Shale Gas Subcommittee Report

The Shale Gas Subcommittee Chairman John Deutch named the other SEAB members on the Subcommittee: Sue Tierney and Dan Yergin. Non-SEAB members on the Subcommittee are Katie McGinty, former Commissioner for the Environment of Pennsylvania and former Chairman of the President's Council on Environmental Quality; Fredd Krupp, President of the Environmental Defense Fund; Steve Holditch, Professor at Texas A&M who specializes in hydraulic fracturing; and Mark Zoback, a Geophysicist from Stanford University.

The first report of Subcommittee, issued on August 18, made recommendations covering activities aimed at reducing environmental impact on water quality, air quality, and long-term effects of development of shale gas production. The Subcommittee believes that if the recommendations are implemented, the country will be able to enjoy the benefits of shale gas production and responsibly manage environmental issues. The recommendations are based on the premise of strong regulation

and an approach based on measurement, disclosure, and actions taken for continuous improvement. The focus of the second report is to clarify and assess the progress of the 20 recommendations put forward in the first report. The Subcommittee has been pleased with general good reception given to report, recognizing support is not uniform everywhere.

Consistent with its charge, the Subcommittee looked at what other Federal agencies are doing. It held a public meeting on October 31 with the Environmental Protection Agency, the Department of Interior, and DOE, which gave their sense of how implementation would take place going forward. The Chairman noted that a representative from the Office of Management and Budget (OMB) was invited but had to cancel. Although OMB was absent at the meeting, the report includes a constructive exchange between Jack Lew and himself regarding government support for R&D in this area going forward.

The Chairman believes the report has changed how all parties involved in shale gas production are thinking about it. Among state regulators, Federal regulators, and industry, considerable progress has been made and the Subcommittee hopes for more.

SEAB Committee Questions and Discussion

Steve Westly commented that the report was extremely well done. He pointed out the challenge of Federal and State regulatory levels and wondered if the Subcommittee had considered how to reconcile the two levels to get the best regulatory solution for the nation. The Chairman agreed that there is tremendous diversity in how shale gas and other activities are regulated between Federal and State levels and that the separation makes it challenging to take a systems approach to these issues, especially with regard to water quality. However, the Subcommittee was explicitly asked not to get into regulatory design and so the report does not address that. Furthermore, the Subcommittee was not properly composed to address regulatory design for dealing with shale gas production.

Nick Donofrio commended the Chairman on a great job and asked how informed the Subcommittee's thinking was on what goes on outside North America. Chairman Deutch said that in general, the Subcommittee members know a great deal about what is going on in other countries in shale gas production based on their examination of activities in France, the UK, Canada, China, Argentina, and other countries. He would characterize the Subcommittee as well aware of international efforts although they are not experts and have not made recommendations on those subjects.

Chairman Perry wondered, with reports of China's shale gas potential, if there is potential for the U.S. and China working together on minimizing environmental impact on a global basis. Chairman Deutch agreed that China has a considerable shale gas resource base but noted a difference in that China does not have the same water availability and quality as the U.S., which makes its situation more challenging. There are the beginnings of private and public (DOE) cooperation with China on issues of production and environmental management. The pace of development means the U.S. has been much more conscious of environmental matters than any other country in the world. Many countries, China included, will look to the U.S. for how to handle these environmental issues.

Michael McQuade brought up the recommendation in the initial report to establish objective measurements for baseline water quality issues. He wondered if there was any additional background on this. Chairman Deutch responded that having measurement as part of the process of developing of good engineering practice has been visibly taken on by industry and regulators. There has been progress in advance of regulation with companies partnering with public interest groups to carry out air

quality measures, but there is a long way to go. The Subcommittee had only general conversations on the topic.

Norm Augustine commented that the Subcommittee had done a very thoughtful job.

Ralph Cicerone said that the report mentions the need for R&D to implement the recommendations but it also notes that Federal government funding is not guaranteed and if there were only industry funding it might be viewed with suspicion. He suggested mechanisms for attracting industrial funding. Chairman Deutch said that a good deal of industry support is already vetted through a process of charges for permit applications, which strengthens the regulatory process in terms of technical capacity and regulatory design/enforcement. He pointed out that one of areas that OMB suggested for rescission is precisely what Mr. Cicerone proposed. The Subcommittee believes that a set of technical subjects strongly deserves government support while recognizing that many field advances will come from industrial R&D. The view of OMB is not the Chairman's, and although he is pleased that Jack Lew is willing to address this difference as noted in his letter to the Committee, it has not been resolved.

Matt Rogers pointed out that the National Petroleum Council (NPC) also came out with long term view of natural gas resources in the U.S., which has thoughtful commentary on technology that is necessary to make this successful commercially and environmentally. He wondered if the Subcommittee had a dialog with NPC and whether they voiced a viewpoint on the Subcommittee's recommendations. Chairman Deutch responded that two of the Subcommittee's members have big role in NPC report: Sue Tierney and Dan Yergin. NPC has proposed a variation of the Subcommittee's preferred approach, which is to work on regional best practice centers rather than having a national approach. NPC is more aware of the practical problems of designing a national best study procedures based on measurement than the Subcommittee, so there is room for differences. The Chairman reiterated that there was very good communication between the two groups.

Chairman Deutch asserted that with the submission of the Subcommittee's report, it satisfied the terms of reference of the Subcommittee and proposed that the Subcommittee no longer be in business after November 18. He asked full Committee Chairman Perry to confirm that after the Committee discussion.

Public Comment

Susan Parker said Chairman Deutch mentioned that the Subcommittee wished they would have made more progress on recommendations and wondered if he could elaborate. Ms. Parker was reminded that this was not Q&A, but rather public comment, and she had no further comments.

Larysa Dyrszka identified herself as a retired pediatrician and public health advocate. During the August teleconference, several callers asked that human health impacts be addressed through a health impact assessment. She does not feel that any progress has been made on this front. She pointed out that in the report, the Subcommittee says the risk of fracturing fluid leakage into drinking water sources through fractures made in deep shale reservoirs is remote. The entire process of natural gas exploration needs to be considered. She suggested that a public health agency be consulted and that a health impact assessment be done. There is precedent from other regions/countries to do such an assessment.

Ben Norris commented on behalf of the American Petroleum Institute (API). API best practices documents run the gamut of operations from well design to site management. Through these documents, the oil and natural gas industry takes into account regional differences in geology and has

the ability to meet individual State regulations. The industry has been working with State regulators on training and engaging with local communities to explain what operations occur during each phase of the production and post-production process. API supports fracfocus.org, works with the Groundwater Protection Council, and conducts regional conferences on excellence in hydraulic fracturing.

Mary Menapace identified herself as a Registered Nurse in New York. Her concern is that the Subcommittee was tasked with protecting public health and the environment, setting the bar for safety and responsibility, yet there is no health assessment or reporting, medical practitioner training, or human health monitoring framework. She questioned the recommendations to improve air quality and disclose chemicals, yet nothing that follows these toxins into the human environment. She believes that human health risk assessments should not be based on what industry states will be the soil and groundwater contaminants but rather on real data from other states. She asked to include health experts on the panel and to include a human health impact assessment in the final recommendation.

Mike Paque commented on behalf of the Groundwater Protection Council. He noted that the report points out the success of the risk-based data management program that 24 states are running, which is the backbone on which Frac Focus is built. Fracfocus.org now requires that companies report 100% of all the chemicals used in hydraulic fracturing. Frac Focus is in discussions with States and environmental NGOs on the ability to accommodate searching. Since the website appeared, seven states have adopted fracfocus.org and seven are actively pursuing adoption in 2012. Recently, they reached their 7000th well inserted and there are 80 companies registered, growing each week. They expect over 1000 once the Texas rule comes online February 1.

SEAB Committee Discussion and Chair Wrap-Up

Chairman Perry asked whether, having heard the public comments, there were any additional comments from the Committee regarding the decision to put the report forward to the Secretary. Nick Donofrio, Michael McQuade, and Matt Rogers voiced their opinion that the report should be forwarded on to the Secretary with the comments included. Ralph Cicerone and Art Rosenfeld pointed out some small errors that should be corrected, which Chairman Deutch agreed to correct before forwarding the final version onward to the Secretary.

With no dissent from the recommendation to put the report forward to Secretary, the Chairman said he would send the report on to Secretary with the changes that were discussed and agreed that the Shale Gas Subcommittee stands adjourned. With that, he adjourned the call.

Respectfully Submitted:

Alyssa Morrissey, Designated Federal Officer

I hereby certify these minutes of the 11/14/2011 SEAB meeting are true and correct to the best of my knowledge.



William J. Perry, Chair