

**NATIONAL SCIENCE BOARD  
TASK FORCE ON SUSTAINABLE ENERGY**

**Roundtable Discussion  
on Science and Engineering (S&E) Challenges  
Related to the Development of Sustainable Energy**

National Science Foundation  
4201 Wilson Blvd., Room 1235  
Arlington, VA 22230  
February 8, 2008

**AGENDA**

- 7:30 a.m.      **Registration, In Front of Room 1235**
- 8:00 a.m.      **Welcoming Remarks**
- Dr. Steven C. Beering, Chairman, National Science Board
- 8:05 a.m.      **Overview, Purpose, and Goals of the Roundtable Discussion**
- Dr. Dan E. Arvizu and Dr. Jon C. Strauss, Co-Chairmen, Task Force on Sustainable Energy
- 8:15 a.m.      **Process and Logistics for Board Roundtable Discussions**
- Dr. Craig Robinson, Acting Executive Officer, National Science Board
- 8:25 a.m.      **Introduction of Participants**
- 8:45 a.m.      **Speaker: Mr. Rod Nelson; *Facing the Hard Truths About Energy: A Comprehensive View To 2030 of Global Oil and Natural Gas***
- 9:05 a.m.      **Discussion Session 1: Role of Science and Engineering in the Development of Sustainable Energy**  
Discussion Co-Moderators: Dr. Arvizu and Dr. Strauss
- Focus Questions:*
1. How can science and engineering advancements help address some of the key uncertainties in the development of sustainable energy, as well as, bring new technologies to the market?
  2. How must science and engineering be transformed throughout our education, research, and corporate infrastructure related to sustainable energy?
  3. Where are the next big breakthroughs likely to occur in sustainable energy?
- 10:30 a.m.      **Break**
- 10:45 a.m.      **Speaker: Dr. Robert Corell; *IPCC IV Assessment Report: Synthesis Report***

*on Climate Change 2007*

11:05 a.m. **Speaker: Dr. Richard Buckius; *NSF and Energy Research and Education***

11:25 a.m. **Working Lunch and Discussion Session 2: Role of NSF in a Nationally Coordinated S&E Research and Education Initiative**

Discussion Co-Moderators: Dr. Arvizu and Dr. Strauss

*Focus Question:*

- 1) How can NSF best support establishing and sustaining a nationally coordinated S&E research and education initiative on sustainable energy?

12:45 p.m. **Break**

1:00 p.m. **Speaker: Mr. Kenneth Ostrowski; *Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?***

1:30 p.m. **Discussion Session 3: Recommendations for a Nationally Coordinated S&E Research and Education Initiative on Sustainable Energy**

Discussion Co-Moderators: Dr. Arvizu and Dr. Strauss

*Focus Questions:*

- 1) How do we as a nation build the capability, the policy, and the regulatory environment to effect change in the energy sector sufficiently and rapidly?
- 2) What specific actions are needed to establish and sustain a nationally coordinated S&E research and education initiative on sustainable energy?
- 3) What is the potential role of the U.S. Government, private industry, and NGOs in addressing the science and engineering (S&E) challenges related to the development of sustainable energy described in the task force charge?

2:45 p.m. **Summary and Next Steps for the Task Force**

- Dr. Arvizu and Dr. Strauss

**List of Participants for the February 8, 2008 Roundtable Discussion**

<b>Participant</b>	<b>Affiliation</b>
<i>National Science Board Participants</i>	
Dr. Dan Arvizu	Co-Chairman, Task Force on Sustainable Energy National Science Board
Dr. Jon C. Strauss	Co-Chairman, Task Force on Sustainable Energy National Science Board
Dr. Mark R. Abbott	Task Force on Sustainable Energy Member, National Science Board
Dr. Steven C. Beering	Task Force on Sustainable Energy Member, National Science Board
Dr. Arden Bement	Director National Science Foundation
Dr. Camilla Benbow	Task Force on Sustainable Energy Member, National Science Board
Dr. John Bruer	Task Force on Sustainable Energy Member, National Science Board
Dr. Pat Galloway	Task Force on Sustainable Energy Member, National Science Board
Dr. Jose-Marie Griffiths	Task Force on Sustainable Energy Member, National Science Board
Dr. Dan Hastings	Task Force on Sustainable Energy Member, National Science Board
Dr. Doug Randall	Task Force on Sustainable Energy Member, National Science Board
Mr. Art Reilly	Task Force on Sustainable Energy Member, National Science Board
<i>Confirmed Participants</i>	
Dr. Ghassem Asrar	Headquarters, Natural Resources and Sustainable Agricultural Systems (NRS&S), Agricultural Research Service, U.S. Department of Agriculture
Dr. Sam Baldwin	Chief Technology Officer and Member, Board of Directors; Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy
Dr. Jan Brecht-Clark	Associate Administrator, RD&T Research and Innovative Technology Administration, United States Department of Transportation

Dr. Richard Buckius	Assistant Director, Directorate for Engineering, National Science Foundation
Dr. Robert (Bob) Corell	Program Director, Heinz Center
Dr. Jon Creyts	Principal, McKinsey & Company
Dr. Patricia Dehmer	Deputy Director of Science Programs, Office of Science, U.S. Department of Energy
Mr. Chris DiPetto	Developmental Test and Evaluation Deputy Director, Defense Systems and Software Engineering, Deputy Under Secretary for Acquisition and Technology, United States Department of Defense
Dr. James (Jim) Dooley	Senior Staff Scientist, Joint Global Change Research Institute
Dr. Luis Echegoyen	Division Director, Division of Chemistry, National Science Foundation
Dr. Carolyn Fischer	Fellow, Resources for the Future
Dr. Alan Hecht	Director for Sustainable Development, Office of Research and Development, U.S. Environmental Protection Agency
Dr. Kevin Hurst	Senior Policy Analyst, Office of Science and Technology Policy, Executive Office of the President
Mr. Joe Loper	Vice President of Policy and Research, Alliance to Save Energy
Mr. Richard Mertens	Deputy Associate Director for Energy, Science, and Water, White House/Office of Management and Budget
Dr. Nebojsa Nakicenovic	Professor of Energy Economics, Vienna University of Technology
Mr. Rod Nelson	Vice President, Schlumberger
Dr. Robert O'Connor	Program Director, Decision, Risk and Management Sciences, Division of Social and Economic Sciences, National Science Foundation
Mr. Ken Ostrowski	Director of the Americas Electric Power and Natural Gas Practice, McKinsey & Company
Ambassador Richard Russell	Associate Director and Deputy Director for Technology, Office of Science and Technology Policy, Executive Office of the President
Mr. Jim Presswood	Energy Advocate, Natural Resources Defense Council

Dr. Harvey Sachs	Director, Buildings Programs, American Council for an Energy Efficient Economy
Mr. Jonathan Spector	Chief Executive Officer, The Conference Board, Inc.
<b><i>In Attendance &amp; Supporting a Confirmed Participant</i></b>	
Dr. Linda Blevins	Technical Advisor, Office of Basic Energy Sciences, U.S. Department of Energy
Mr. Brad Hancock	Associate Director for Energy and Utilities, U.S. Department of Defense
Dr. Kevin Hurst	Senior Policy Analyst, Technology Division, Office of Science and Technology Policy, Executive Office of the President
Dr. Tom Zimmerman	Fellow, Schlumberger