

*Workshop on the***Governance of Risks of
Unconventional Shale Gas**

Development *The second of two Workshops convened by the
National Research Council, Board on Environmental Change and Society*

**Committee on Risk Management and Governance
Issues in Shale Gas Development**

August 15-16, 2013

Washington, DC

Mitchell J. Small, Committee Chair

Workshop 1: *Characterizing Risks of Unconventional Shale Gas Development*

Principal risk domains considered:

- Operational: mishap occurrence and detection, emissions, seismicity
- Water: source drawdown, well leakage, return flow management
- Air Quality: local air toxics, regional ozone and PM, global methane
- Global Climate: life cycle emissions, fuel substitution effects
- Ecological: habitat & connectivity impacts, air & water toxicity
- Human Health: pollutant exposure and effects, stress
- Community/Social: economic impacts, equity, governance and trust

→ *Summarize current state of knowledge*

→ *Identify needs for further data collection, sharing and research*

In Workshop 2 on Risk Governance, we will . .

•

- Assess current and evolving approaches to shale gas governance in the US (and other nations)
- Identify state-of-knowledge on the performance of alternative governance approaches, considering possible roles of (and coordination among) federal, state and local governments, industry self-governance, and NGO/community involvement
- Consider specific initiatives proposed to improve the scientific and social basis for shale gas risk governance

Program

Thursday AM, August 15, 2013

8:45 IDENTIFYING GOVERNANCE CONCERNS AND CHALLENGES

Responses Related to Shale Gas Governance from a General Elicitation

Gabrielle Wong-Parodi, Carnegie Mellon University

Governance Concerns and Government Capacity

Barry Rabe, University of Michigan

Governance Concerns from a Technical Perspective

Mark Zoback, Stanford University

9:45 GOVERNMENTS' ABILITY TO MEET GOVERNANCE CHALLENGES

Capacity of State Governments to Perform Risk Governance Functions

Hannah Wiseman, Florida State University

Coordinating State and Local Authorities for Managing and Reducing Risks

Charles Davis, Colorado State University

Program (Cont.)

Thursday PM, August 15, 2013

1:30 The Potential for Managing and Reducing Risk through Non-Traditional Regulatory Approaches *Sheila Olmstead, Resources for the Future*

SHALE GAS GOVERNANCE IN OTHER FEDERAL SYSTEMS

Governing Shale Gas Development in the European Union

Elizabeth Bomberg, University of Edinburgh

Governing Shale Gas Development in Canada: New Brunswick

Louis LaPierre, University of Moncton

4:00 **Discussion Panel: Challenges and Opportunities for Governments in Managing Shale Gas Risks**

5:00 Adjourn for the day

Program (Cont.)

Friday AM, August 16, 2013

8:30 **POTENTIAL ROLES OF NON-GOVERNMENTAL ENTITIES IN GOVERNANCE**

Environmental Self-Governance: Conditions for Industrial Effectiveness

Aseem Prakash, University of Washington

Assessing the Potential for Self-Regulation in the Shale Gas Industry

Jennifer Nash, Harvard University

The Potential for Risk Governance through Organizational Safety Culture

Nancy Leveson, Massachusetts Institute of Technology

Public and Stakeholder Participation for Managing and Reducing Risks

Warner North, Northworks, Inc.

Program (Cont.)

Friday PM, August 16, 2013

1:15 **NEW APPROACHES IN RISK GOVERNANCE**

A Public-Private Partnership: The Center for Sustainable Shale Development
Andrew Place, Center for Sustainable Shale Development

Comprehensive Shale Gas Development Plans: The Maryland Process
Brigid Kenney, Maryland Department of the Environment
Christine Conn, Maryland Department of Natural Resources

3:00 **CONCLUDING SESSION: PERSPECTIVES ON GOVERNANCE CHALLENGES**

Kate Sinding, NRDC

Mark Boling, Southwest Energy

Bernard Goldstein, U of Pittsburgh

Susan Tierney, Analysis Group

5:00 Adjourn

Workshop Procedures

- Each session chaired by a member of the NRC Committee
- 20-25 minute presentation by each presenter
- 10 minute discussion by each discussant
- Remaining period (~30-45 minutes) for discussion:
 - Questions from Committee, in-person audience, and in writing from webcast attendees (e-mail to becs@nas.edu)
 - Responses by speaker and discussant(s)
 - Discussion by Committee
- Additional time for open discussion will be available during the summary and wrap-up portions of the Workshop

Workshop Tone

The intended tone of these workshops is investigative. The participants are encouraged to recognize that knowledge in this domain is rapidly evolving and that final answers are not in hand.

We seek to maintain a tone of search for improved understanding in the hope that this will provide a more solid grounding for supporting ongoing and future deliberations.

Workshop Outcomes

- Video archive of presentations
- Published workshop summary by rapporteur
 - No conclusions or recommendations
- Papers for targeted scientific journal publication
 - Special issue of a leading environmental science, technology, and policy journal

The Workshop may be deemed successful if . . .

- The current mechanisms and state-of knowledge for risk governance of shale gas development are clarified
- Potential enhancements to risk governance mechanisms are identified, along with information needed to evaluate them
- Workshop attendees come away with new insights and contacts to help them better understand and consider risk governance options