Climate Change and Extreme Weather Vulnerability Assessment of the US Energy Sector: Building a Secure and Sustainable Energy Future

July 24-25, 2012
Washington D.C.

Introduction

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Objectives of Workshop

- **DAY 1:** Identify extreme weather and climate change vulnerabilities and challenges to the US energy system .

- **DAY 2:** Identify knowledge gaps, adaptation strategies, and recommendations to inform policy planning and innovative energy technology RDD&D investments.

- Use workshop input to develop a report that identifies key vulnerabilities, gaps and potential response strategies to ensure energy security and system resiliency.

Motivation for Workshop

❖ Impacts on the Energy Sector

1. Power outages routinely occurring from storm events.
2. Electricity generation is being limited by water shortages and elevated water temperatures, as well as flooding.
3. Heat waves and increased electricity demand pose challenges to grid reliability.
4. Oil and gas infrastructure in the Gulf region at risk as sea level rises and storm surge increases.
5. Coal transport across the Nation facing flooding disruptions.
6. Siting/permitting/operation decisions and technology choices are being impacted by concerns about drought and long-term water availability.

Key Questions to Help Focus Our Discussion Day 1

1. **To what extent have current energy sector assets and operations been directly or indirectly affected by extreme weather and/or changing climate conditions?**
2. **How do the vulnerabilities vary by region? by energy technology?**
3. **How have impacts to date affected energy reliability?**
4. **How will a changing climate affect the Nation's energy sector?**
5. **To what extent are the risks of extreme weather and climate change considered in corporate planning, financing and insurance decisions.**

Key Questions to Help Focus Our Discussion Day 2

6. **What is the general state of awareness on vulnerabilities and the available adaptation options in the energy sector?**
7. **What are the implications and economic costs of a "business as usual" approach or of adopting available adaptation/response strategies?**
8. **What changes or adaptation/response strategies have been undertaken to reduce impacts and enhance resilience?**
9. **What energy technology innovations could help reduce extreme weather/climate risk?**
10. **Are there legislative/policy barriers that impede developing a more climate resilient energy future?**

Guiding Principles For The Workshop

- **While administration policy includes both climate change mitigation and adaptation, the focus of this workshop is on the latter.**
- **Adaptation strategies exist -- but risk management assumptions may need to be updated.**
- **Energy Technology Innovation can contribute to more cost effective near- and long-term response strategies.**
- **Our approach will be to minimize presentations in order to maximize open discussion.**
- **We will operate on Chatham House Rules to encourage full and open discussion.**

> •"the *future ain't* what it used to be."
> • Yogi Berra