

# Designing Climate Policy: Information Needs

National Academy of Science's Workshop:  
*Assessing Economic Impacts of  
Greenhouse Gas Mitigation*

October 2–3 2008

**Terry M. Dinan and Robert Shackleton  
Congressional Budget Office**

The comments made in this presentation reflect the views of the author and should not be attributed to the Congressional Budget Office

# Research on Climate Change Has Been a Two-Way Street

- **Analysts have taken cues from policymakers about concerns**
- **Policymakers have drawn on analysis in designing legislation**
- **Information needs created/complicated by**
  - Long-term and global nature of the policy
  - Profound scientific and economic uncertainties
  - Equity considerations
  - Interaction between climate policies and other policies

# **Much Progress in a Short Time: A Few Examples**

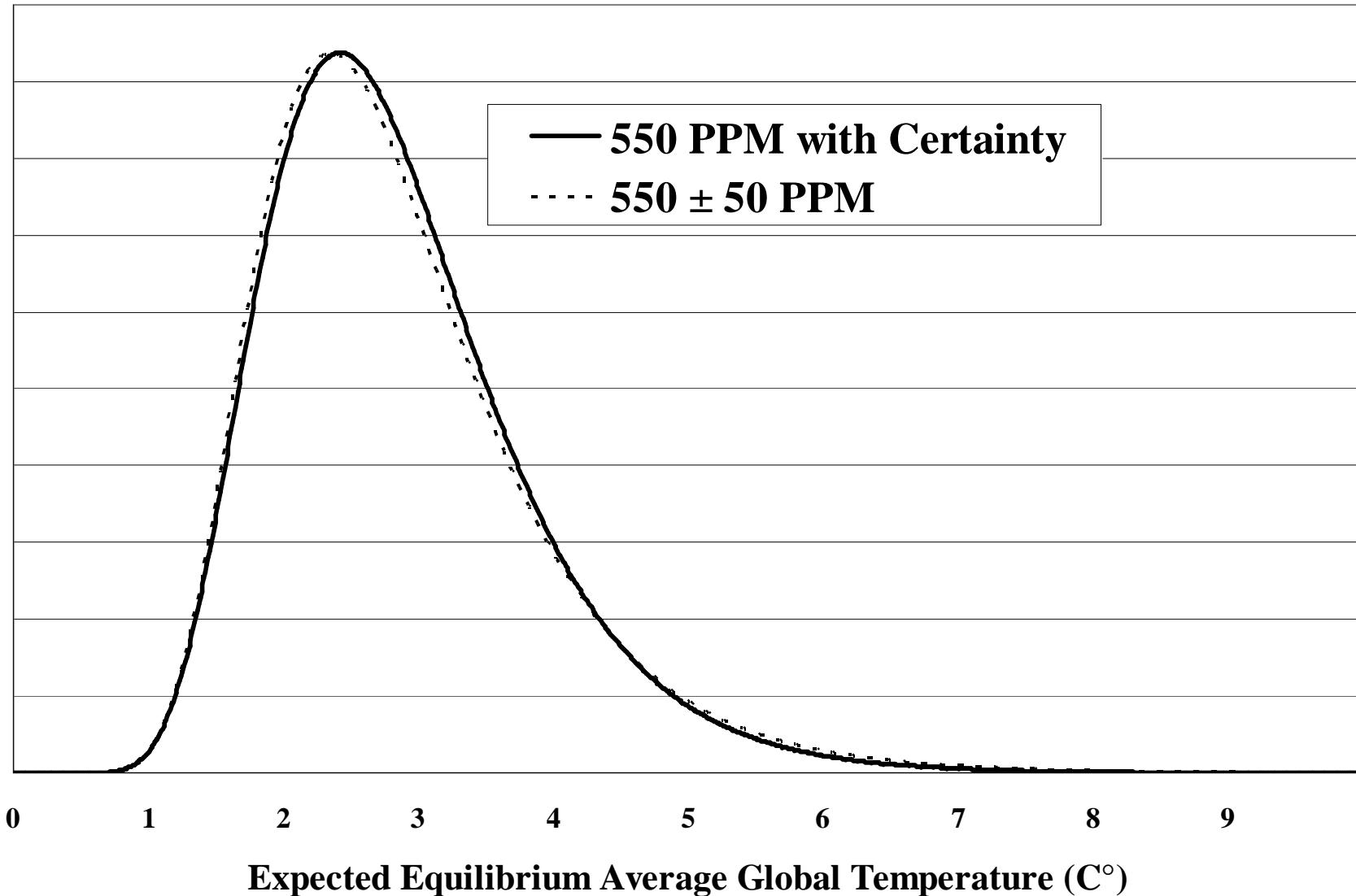
- **Evolution in thinking about benefits**
- **Research on the potential consequences of free allocations have led to more interest in auctioning allowances**
- **Evolution in thinking about timing flexibility**
  - Research on the efficiency advantages of a tax relative to a fixed cap prompted policymakers' interest in flexible cap designs
  - Analysts have responded by considering alternative ways to build timing flexibility into cap-and-trade programs

# **More Progress Needed: Some Information Needs in Key Areas**

# Benefits: Realistic Expectations About Potential Policy Outcomes

- **Information on the relationship between U.S.—or developed countries as a whole—mitigation efforts and potential shifts in the distribution of climate outcomes**
  - Implications for choice of stringency versus policy structure and creation of global incentives (e.g., contingent reductions, border adjustments, international offsets).
- **Continued effort to integrate uncertainties and risks of catastrophic damages into benefit estimates**
  - Implications for policy stringency and timing
  - Implications for policy design: mitigation and adaptation strategies

## For Example: Effect of Uncertainty About Concentrations on Expected Temperature Has Implications for Policy Design



# Aggregate Costs of U.S. Policy: Better Information on Some of the Key Drivers

- **Availability and cost of offsets**
  - Domestic: How reliable are existing estimates?
    - Accounted for 40% of reductions in initial 8 years of the policy in CBO analysis
    - Initial price estimate over 40% higher if no offsets
  - International
    - Best methods for achieving them? CDM, sector based approaches, technology standards in some countries?
- **Better treatment of the uncertainties associated with technology development and acceptance**
  - Nuclear
  - Carbon capture and storage

# Distribution of Costs: Increased Focus on Costs Borne by Particular Groups

- **Burdens imposed on trade-exposed, energy-intensive industries**
  - Implications for production, employment, carbon leakage
  - Implications of policies designed to protect them: e.g., effects on leakage, implementation issues, spur comparable efforts, WTO?
- **Burdens imposed on low-income households**
  - Options for targeting compensation using existing mechanisms
- **“Fair” allocation to industries/firms**
  - Ability to identify winners and losers

# Cost Containment Options: Increasingly Complex Options Have Been Considered

- **Increased interest in providing flexibility in timing of reductions and decreasing price volatility**
  - E.g., progression in Lieberman/McCain (S.280), Lieberman/Warner (S.2191), Manager's amendment (S. 3036)
- **Need to understand implications of different approaches—banking, borrowing (individual or aggregate), price floors and price ceilings for**
  - Price volatility
  - Ability of firms to react to potential policy changes
  - Implementation
  - Certainty about long-term reductions

**Conclusion:**  
**No Analyst Left Behind!**