Power Generation & Environment

Choices & Economic Trade-Offs
Objectives & Outcomes

• Goal: Convene leading scholars on the economics of controlling emissions in power generation
  • What are the technology options?
  • What are the costs?
  • What are the policy options
• Studies grounded upon data and analysis
• Mission accomplished? For you to decide....
• Take the survey, please share your thoughts
  • What did we miss?
  • How can we improve industry participation?
Publishing your Study?

- Professors Mason & Atkinson
  - will be serving as editors
  - for a special issue for Resource and Energy Economics
- To have your paper considered
  - please email Chuck Mason, Bambuzlr@uwyo.edu
Session 1: CCS Themes

- Coal based CCS is an expensive proposition
  - EPA emission standard – 1,000 lb / MWh roughly 50% capture that precludes coal fired power plants
  - Seems like a de facto carbon emission limit
- Alternative compliance payment – payment in excess of standard plus any CO2 price - could be a way to fund CCS
- Basin Electric Case
  - Can innovative financing and government support get a demonstration plant built?
  - Is there political will to do this?
Keynote & Session 2:

- Major challenges in reducing carbon emissions
- Multi-pollutant regulation is important
  - Control strategies cannot be least-cost when policy makers ignore the substantial interdependence that we have of observed.
- Study of Impacts of electricity prices on U.S. manufacturing
  - Findings appear at odds with prior studies
Session 3: Regulation

- Energy efficiency at the coal plants
  - Finds 5-6% reduction in emissions from imposing a standard equal to top 10% boilers in terms of efficiency
  - Do current regulations affect the ability of firms to adopt more efficient methods?
- Can a unilateral carbon tax reduce emissions elsewhere?
  - Is there a negative leakage?
  - Answer seems to be yes, possible but how important?
Session 4:

- Biomass Trading & Environment
  - Are we trading off particulate emissions for CO2 reductions?
  - *Ecological impacts from large-scale biomass production?*

- Costs of Carbon Sequestration
  - Interesting work, informative
  - How do the cost curves shift with input prices?

- Uranium & Nuclear Power
  - High LNG prices and coal transport & production bottlenecks
  - Significant capital costs here in U.S.A.
Session 5

• Pricing carbon in electric power sector
  • Negative leakage & lower GDP?
  • Carbon emissions & sin taxes
• Wind & Transmission Capacity
  • Transmission capacity is critical
  • Should we have variable severance taxes on wind?
• Climate Policy Portfolios
  • Multiplicity of policies – chaos?
  • Renewable portfolio standards as counter-productive?
• Bingaman Clean Energy Standard
  • Price caps hinder achievement of emission reductions
  • Government failures?
Some Questions & The Road Ahead

• Important questions
  • Are current de facto carbon standards efficient?
  • Are consumers ready for much higher rates?

• Many utilities have a balanced portfolio
  • Coal provides a low-cost cushion
  • Once share of renewables rise to a certain level, rates increase sharply

• U.S. natural gas and crude oil production is on the rise
  • How can this increase in wealth be used to improve the environment?
  • If industrial natural gas rises (ethylene, LNG exports, GTL), where are the low cost sources of power?