

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?