Allocation issues and carbon market design

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National Commission on Energy Policy

Overview

- What are the stakes in the U.S.?
- General principles guiding allocation policy
- How are allocation principles playing out in legislative climate proposals?
- Incentives in legislative proposals for RE/EE
- Issues for analysis

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What are the stakes in the US?

- A carbon trading program could distribute allowances or revenues worth $40-100 billion dollars/ year
  - In contrast, the SO2 program distributed $1-2 billion per year of allowances
- Allocation is simultaneously the most difficult step and the key to a political agreement
- The general outlines of an approach may be forming, but the next level of detail will be challenging

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Allocation as legislative "sweetener"?

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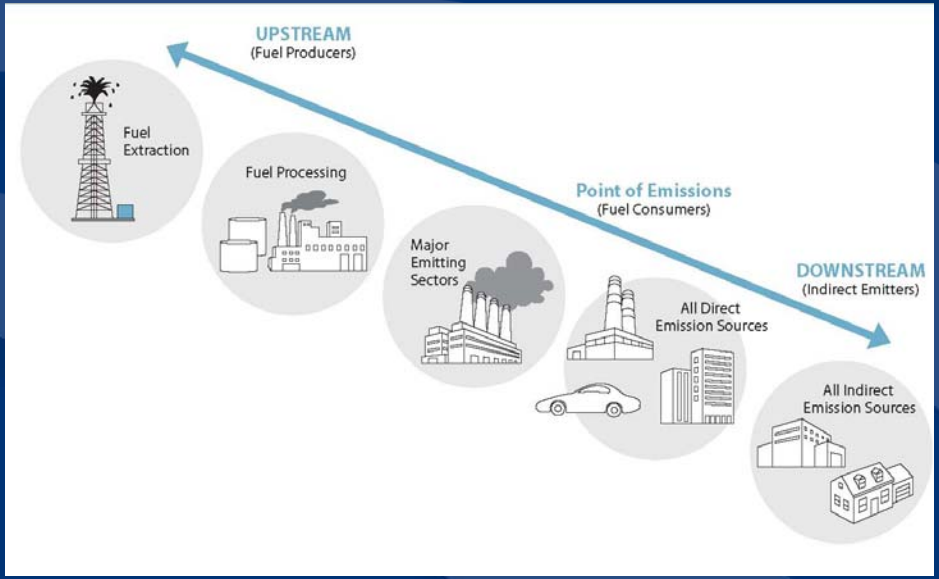
Principle #1: The economic burden on a particular firm or industry sector is <u>not</u> a direct function of its emissions or fuel use

- Cost burden depends on:
  - ability to pass through costs
  - emission reduction opportunities
  - elasticity of consumer demand
- Allocation can be decoupled from point of regulation



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Principle #2: Allocating most allowances for free to energy producers creates the potential for a large windfall

- If producers pass on cost, they "get paid twice"
  - From consumers via higher revenues from increased prices
  - From the government via allowances (a lump sum payment)

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Principle #3: Allocation decisions in the power sector are complicated by different regulatory structures

- Competitive wholesale markets vs. cost of service
- Will allowance costs be passed through in regulated markets?
- Allocate to load vs. allocate to generation?

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Principle #4: Allowance distribution (or auction) provides the opportunity to advance societal interests without diminishing the price signal

- Examples:
  - Support R&D or technology deployment
  - Mitigate impacts on low-income consumers
  - Fund adaptation activities
  - Reduce taxes on income or investment

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Principle #5: A mixed approach (free allocation with auctioning) may offer significant benefits

- Balance of compensating industry with addressing other objectives
- How much free allocation? RFF study:
  - In RGGI region, allocation equal to 34% of emissions would compensate power sector
  - 77% would compensate all losers
- Phase out free allocation over time

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NCEP Allowance Recommendations

- Allocation should promote a more equitable distribution of costs
- Initially, about 50% of allowances (economy-wide) from total pool should be allocated for free
  - Would provide enough allowances to compensate adversely affected industries
  - Within free portion, shares for individual industry sectors should roughly reflect cost burden
- The free portion of the allocation should be phased out gradually with a bigger auction phased in

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Allowance Distribution in Legislative Proposals (% of total U.S. allocation)

Bingaman/Specter	Lieberman/Warner (10/18/07)

Initial free allocation to industry: 53%
• Electric power (generators): 29%
• Carbon-intensive industry sectors: 10%
• Coal mines: 6%
• Petroleum refineries: 4%
• Natural gas processors: 2%
• Non-CO_2 facilities: 2%
Other allocation: 23%
• States: 9%
• Agricultural sequestration: 5%
• Early reduction: 1%
• Geologic sequestration: 8%
Initial Auction: 24%
• Transition to 53% auction by 2030
	Initial free allocation to industry: 50%
	• Elec.power : 30%
	  • 20% to generators
	  • 10% to load
	• Industry emitters: 20%
	
	Other allocation: 26%
	• States and tribes: 9%
	• Ag. and forestry sequestration: 5%
	• International forestry protection: 3%
	• Early reduction: 5%
	• Geologic sequestration: 4%
	Initial Auction: 24%
	• Transition to 57% auction by 2030

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How are auction proceeds used?

- Both Bingaman-Specter and Lieberman-Warner use auction proceeds largely for
  - Technology deployment
  - Adaptation activities
  - Low income assistance
- Differences
  - Lieberman-Warner provides more for low-income assistance
  - Bingaman-Specter provides more for adaptation

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Incentives for EE and RE technologies

- State allocations
  - Can be used for energy efficiency or renewable energy
  - Additional allowances if state has policies that encourage energy efficiency
- Auction revenues
  - "zero and low-carbon generation technologies"
  - "high efficiency consumer products"
- International incentives
- Carbon price signal is most important incentive

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Some analytical issues

- Given the possibility of significant auction revenues for EE and RE technologies, how should these revenues be utilized?
  - What is the appropriate mix between deployment and longer-term R&D?
  - What institutional models would be effective to encourage and deploy the next generation of technologies?
- How do you model the various incentives in climate bills?
- What are the potential impacts of allocation-to-load on energy efficiency?
- Are there ways to compensate consumers for the cost of allowances without masking the price signal?
- Are allowance set-asides an effective way to subsidize renewable energy?

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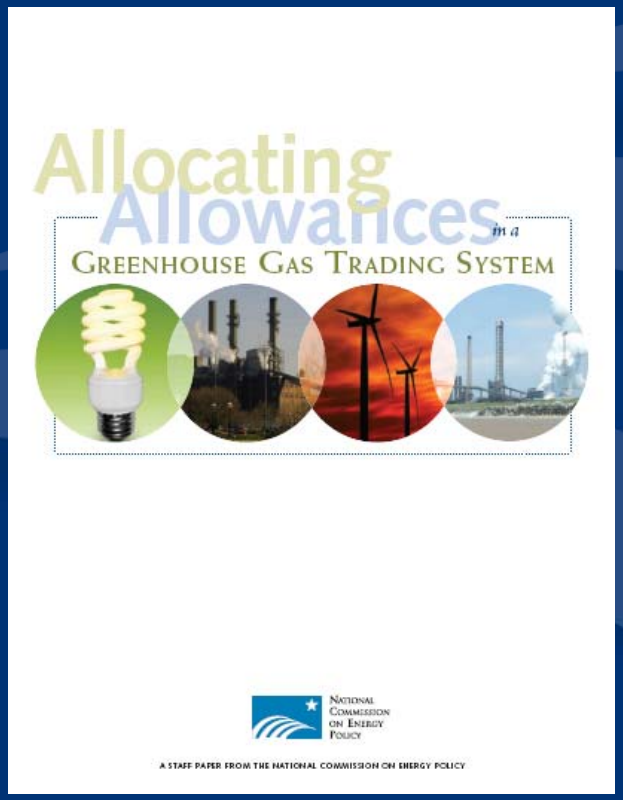
For more information. . .



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