

# Point of Regulation in a Greenhouse Gas Tradable Permit Program

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# Point of Regulation: Overview

- Economic Principles of Trading
- Defining Upstream, Downstream, Hybrid
- How Point of Regulation Can Affect the Costs and Effectiveness of Trading
- Further Questions on Implementation

# Economic Principles of Trading

- In theory, trading can result in least-cost attainment of an emissions goal, **if**
  - All of the economy's emissions are covered
  - Emissions sources face same marginal cost
  - Administrative costs do not preclude some otherwise economic trades
- A key design goal should be to aspire for these conditions

# Defining Upstream

- Accounts for carbon at the point at which a fossil fuel enters the economy
  - Coal minemouth, gas wellhead, oil rig
- Focus is on the carbon content of fuels
  - permit to market carbon-based fuel

# Defining Downstream

- Accounts for carbon as it is emitted into the atmosphere
  - Power plant stacks, industrial boiler stacks, automobile exhaust pipes, etc.
- Focus is on carbon emissions
  - permit to emit carbon dioxide

# Defining Hybrid

- A mix of both upstream and downstream
- Some sectors may be covered upstream while others downstream
- The point of regulation may also fall between the upstream and downstream extremes
- Some sectors covered by trading, others by command and control regulation

# How Point of Regulation Can Affect Costs and Effectiveness

- Breadth of coverage
- Equating marginal costs across sources
- Administrative complexity
- Passing costs through the energy system

# Further Questions on Implementation

- Allocation decision distinct from point of regulation decision
- End-of-pipe sequestration
- Diversion of fossil fuels away from energy sector (petrochemicals, fertilizer)
- Imports and Exports