



# Legal and Regulatory Frameworks for Greenhouse Gas Emissions Trading: Getting the Market to Work

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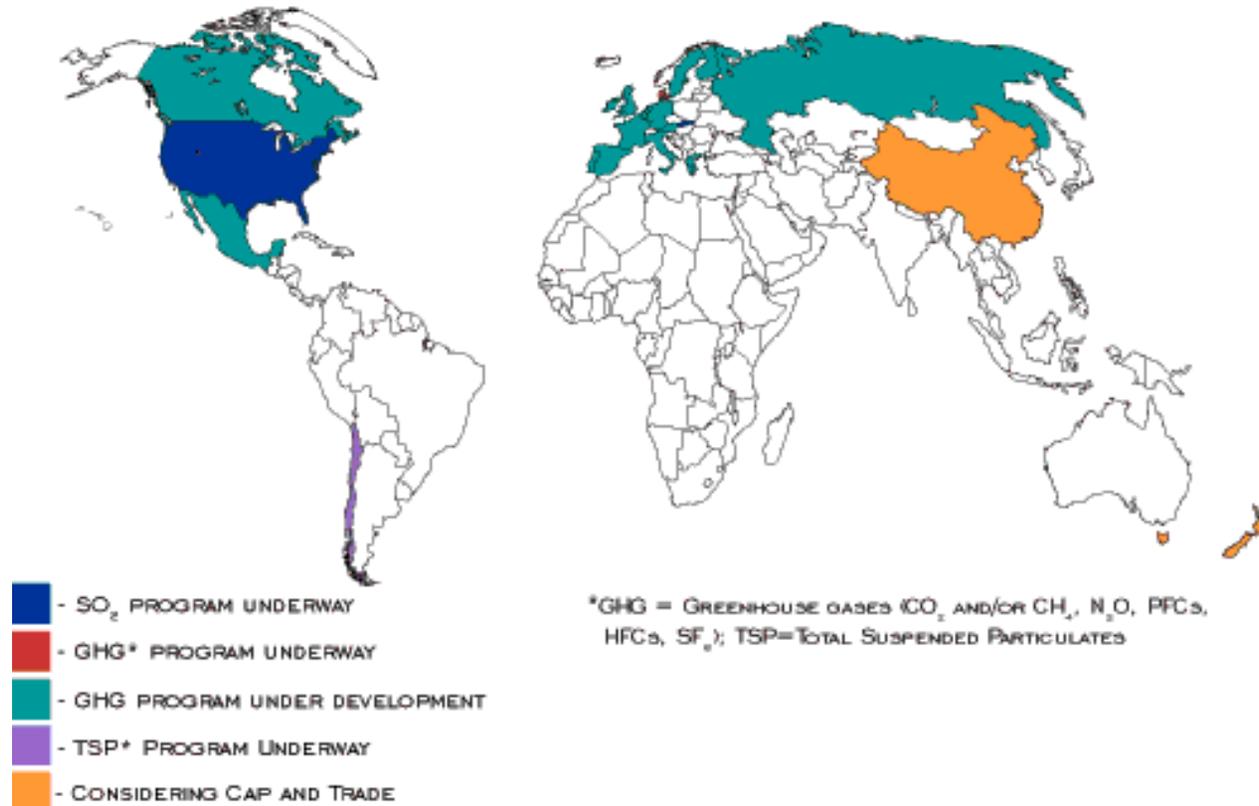
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# Overview

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- International and U.S. Experience with Emissions Trading
- Benefits of Emissions Trading
- Elements of Emissions Trading
- Types of GHG Emissions Trading Programs
- Getting the Market to Work

# International Emissions Trading Efforts



Source: EPA Clean Air Markets Website

# U.S. Experience with Emissions Trading

EPA SO<sub>2</sub> and NO<sub>x</sub> Trading Programs  
Chicago Climate Exchange  
Michigan Air Emissions Trading  
New Hampshire Multi-Pollutant Standard  
NESCAUM GHG Trading Pilot  
Oregon CO<sub>2</sub> Standard and The Climate Trust  
Pennsylvania Air Emissions Trading  
Seattle City Light Offset Regulation  
Suffolk County, NY Multi-Pollutant Regulation  
Texas Emissions Banking and Trading Program



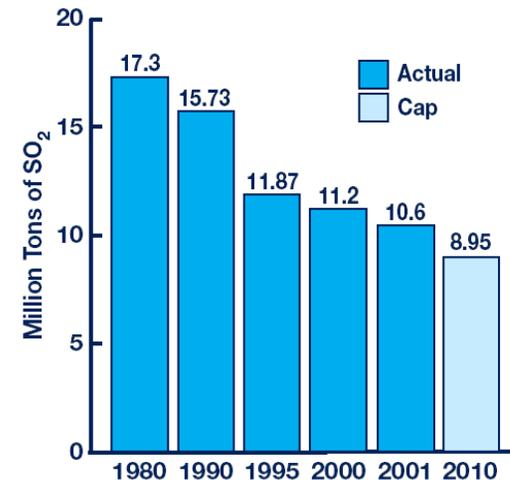
New Hampshire Department of Environmental Services



PENNSYLVANIA  
Department of Environmental Protection

# Clean Air Act SO<sub>2</sub> Trading Program

- Cap-and-trade system
- Affects pre-1990 fossil units >25MW capacity
- 10m ton reduction (53%) from 1980 levels by 2010
- 2.8% of allowances are auctioned to set value
- Trading on Chicago Board of Trade
- Phase 1 started in 1995, Phase 2 in 2000.
- Rain acidity in Eastern U.S. has dropped 25% since program start



# Why Choose Emissions Trading?

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- *Same end. Better means.*
  - Can impose same limits on total emissions as with command-and-control, BUT...
  - Greater flexibility and lower cost in achieving compliance - for both industry and regulators
- *Best applied when:*
  - Problem occurs over a relatively large area
  - A significant number of sources contribute emissions
  - Cost of controls varies from source to source
  - Emissions can be consistently and accurately monitored/estimated and reported

# Elements of Emissions Trading

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- A “cap” or other limit on combined emissions of all participants
- Operates through basic market forces of supply and demand, with buyers (higher emitters) and sellers (lower emitters)
- Need adequate number of participants for stable market
- Opt-in provisions for voluntary participation
- “Safety valve” to limit prices

# Elements of Emissions Trading (cont.)

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- Allowances or credits granted via:
  - Standardized monitoring and estimation methodologies for emissions and reductions
  - Clear verification procedures and standards
- Credit banking and borrowing provide added flexibility
- Enforcement procedures and real penalties
- Regulatory fees recovered via auction (in cap-and-trade) or assessed per transaction
- Trades subject to federal and state tax

# Cap-and-Trade Programs

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- Cap on Total Emissions
  - Relative to total GHG emissions from all sources
  - For a specific time period
- Allowance distribution at start
  - Allowances may be distributed either (a) for free or (b) by auction
  - Absolute metrics only (e.g., tons CO<sub>2</sub>e)
- Allowance trading occurs in open market

## Types of Emissions Trading

# Baseline-and-Credit Programs

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- *Baseline/Base Year or Target* defined for each participant to set individual “cap”
  - Cap may be adjusted to ensure demand for credits
- Credits issued for reductions below individual caps
  - Those with emissions exceeding cap must buy credits
  - Absolute *or* intensity metrics
    - e.g., tons CO<sub>2</sub>e      e.g., tons CO<sub>2</sub>e per kWh
- Credit trading occurs in open market

## Offsets or “Project-Based” Trading

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- Cap (baseline/target) set on each source
  - Typically would apply to new/expanding sources
  - Existing sources could voluntarily opt-in
- Emitters arrange offset (“trade”) of emissions under applicable regulations
  - Projects must be screened and reductions verified for offsets to occur
  - Absolute *or* intensity metrics
    - e.g., tons CO<sub>2</sub>e      e.g., tons CO<sub>2</sub>e per kWh

# Getting the GHG Market to Work

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- Need a paradigm shift - critical mass that believes “climate change regulation is real”
- There will still be winners and losers
  - Of course, ultimately “everybody wins” - there fewer “losers” than with command-and-control
- Need political decision on scale of program
  - If sector-specific, cap-and-trade is feasible
  - If multi-sectoral, baseline-and-credit is more practical

# Getting the GHG Market to Work (cont.)

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- National program could evolve from federal or state initiatives, or both
- Larger program would require significant government resources
  - Emissions reporting, data management, transfer tracking, compliance and enforcement components
  - Government could shift monitoring and verification responsibilities to private sector
- Need to avoid shifting accompanying impacts (e.g., from criteria air pollutants)

# Contact Information

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