



Regional Greenhouse Gas Initiative
An Initiative of the Northeast & Mid-Atlantic States of the U.S.

Regional Greenhouse Gas Initiative (RGGI): Model for a National Power Sector Cap-and- Trade Program?

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Precedent Setting

- First carbon cap-and-trade program in the United States
- Unprecedented collaboration between energy & environmental agencies in program design
- New approach to program design
 - auction of allowances and use of revenue to reduce electricity demand and moderate allowance prices
- Key design elements being incorporated into federal cap-and-trade proposals (e.g., allowance auction)
- General design approach instructive for federal program
 - focus direct incentives at both the emissions source and end-user

Innovative Design Elements

- Allowance auction: warranted due to implementation in competitive wholesale power markets
 - Generates revenue to support end-use energy efficiency
- Consumer allocation approach: allows emissions source-based program to address electricity end-use
 - Addressing CO₂ requires new approach
 - Achieves emissions reductions at lower cost
- Compliance flexibility: package of compliance flexibility measures designed to reduce market volatility without using price caps or safety valves
 - Unlimited banking, multi-year compliance period, offset triggers
- Offset design: utilizes standardized approach to evaluating additionality through benchmarks and performance standards



RGGI Program Components

- Start date of January 1, 2009
- Covers fossil fuel-fired electric generating units 25 megawatts and larger
- Two-phase cap: stabilize emissions through 2014; reduce 10% by 2018
- Three-year compliance period
- Allowance banking allowed without limitation
- Allocations: minimum 25% allocation to Consumer Benefit
 - Remaining 75% allocated at discretion of each state
 - States comprising majority of regional emissions budget committed to nearly 100% auction with revenues to provide consumer benefits (e.g., end-use energy efficiency)
- Offsets allowed with limitations; requirements prescribed in rule



RGGI Consumer Allocation Approach

- Auction of allowances and use of revenue to support greater end-use energy efficiency and mitigate ratepayer impacts
- Allows an emissions source-based cap-and-trade program to take an integrated approach that also addresses electricity end-use
- End-use energy efficiency avoids CO₂ emissions, resulting in lower allowance prices
- End-use energy efficiency investments provide additional ratepayer benefits
 - Cap-and-trade program results in incremental wholesale price increase at point in time
 - Energy efficiency projects provide energy bill savings at the retail price over the life of the investment
 - Consumer benefit allocation approach has potential to provide net economic benefits



RGGI Consumer Allocation Approach

- RGGI program to be implemented in deregulated wholesale electricity market
- Compliance costs of marginal unit incorporated into wholesale market clearing price, regardless of allocation method (e.g., direct allocation or auction)
- CO₂ allowances analogous to a marginal O&M cost
- Generators “expend” allowances when generating electricity, resulting in forgone revenue that could be received through sale of allowances (“opportunity cost”)
- As a result, market price of allowances factored into generator bids into the wholesale market

RGGI Consumer Allocation Approach

Old logic:

- Allocation doesn't matter – simply an asset distribution exercise (read: political)
 - Many current federal cap-and-trade proposals follow same logic to various degrees

Old logic based on old context:

- Cap-and-trade programs (e.g., Acid Rain, NOx Budget) developed prior to full advent of competitive wholesale electricity markets
- Dollar per megawatt-hour compliance costs modest (e.g., NOx Budget < \$1/MWh equivalent)
- Back-end controls commercialized
 - Allocation method not expected to impact marginal cost of abatement

RGGI Consumer Allocation Approach

New logic:

- Allocation **does** matter -- critical to economic success of cap-and-trade program and mitigation of ratepayer impacts

New logic based on new context:

- Cap-and-trade programs (for electric sector) to be implemented in competitive wholesale markets
- Dollar per megawatt-hour compliance costs expected to be significant (e.g., \$2-3/MWh equivalent and up, dependent on cap stringency and program design)
 - Given greater compliance costs, pass-through to ratepayers matters
- Back-end controls in developmental or early commercialization stage
 - Allocation method expected to significantly impact marginal cost of abatement if directed to address electricity end-use
 - Strong support for end-use energy efficiency key to moderating allowance price in absence of back-end controls (also continued role for end-use efficiency, due to economics of such controls)

Key Allocation Issues for Consideration

- Integrated allocation approach needed to ensure federal cap-and-trade program success
 - As with all markets, impact of carbon market price signals on business and consumer behavior may be subject to market barriers and market failures
 - Existing market barriers to greater end-use efficiency (e.g., high implicit consumer discount rates, spilt incentives, capital rationing by business)
 - Demand elasticity of residential electricity demand, vehicle miles traveled
- Carbon price signal alone unlikely to be sufficient
 - Market transformation approaches in complement with price signals key to fully realizing low-cost emissions reductions and moderating allowance prices
- Strong partnership role for states key to implementing an integrated allocation approach and achieving allowance cost containment
 - States have comparative advantage and experience in delivering end-use energy efficiency programs
 - States in better position to address regional and local structural issues (e.g., land-use planning, VMT)



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