

Allocation Choices: The U.S. Acid Rain Program

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+ Overview

- + • Key Choices
- + • What *were* we thinking?
- + • Lessons for RGGI

+ Key Choices

- **One-step** ✓ vs. two-step
- + • **Allocation** ✓ vs. auction (almost all allocated)
- + • Public benefit vs. **emitters** ✓ (Mostly emitters)
- + • New vs. **existing** ✓
- **Emitters** ✓ vs. non-emitters
- + • **Input** ✓ vs. output
- Updating vs. **fixed** ✓
- + • **Fuel-specific** ✓ vs. fuel-neutral

+ Key choices (cont'd)

- + • Formula “principle”: Allocations matched emission limitations; but the cap governed through “ratchet”
- + • Formula structure: Heat input x an emission rate for several classes of sources, plus some special cases
- + • Growth? Program mostly focused on existing, but some provisions helped new
- + • Statute very specific on allocation

+ Allocation Formulas

- + • Heat input baseline: average of 1985-87; some adjustments possible for shutdowns or outages
- + • Emission rate varied by source category
 - + – 0.6 - 1.2, and 2.5 lbs/mmBtu were touchstones
 - + – 1985 emission rate sometimes governed
 - + – Bonus allowances for cleaner sources
 - + – Alternative formula for cleaner states

+ Clean and new sources

- + • Existing sources (8.9 million allowances total)
- + • Bonus allowances for cleaner sources (530,000)
- + • Election for cleaner states
- + • Annual Auction (200,000)
- + • Direct sale set-aside as last resort (50,000 tpy at \$1500/ton [1990 \$])

+ Set-asides

- + • Extra allowances to encourage scrubbing (3.5 million; all used)
- + • Bonus allowances to encourage efficiency and renewables (up to 300,000; 47,500 used)
- + • Auction reserve (still going strong)
- + • Direct Sale reserve (terminated)
- + • Repowering allowances (not used)

+ *What were we thinking?*

- Frame of reference was NSPS
- + • 1971: 1.2 lbs/mmBtu
- 1977/79: % reduction requirement; to 0.6 to 1.2 lbs/mmBtu
- + • Scrubbing vs. low-sulfur coal
- + • 1980s proposals: Excess emissions “allocation,” 30-year/NSPS
- + • Existing sources had to reduce a lot
 - so give enough allowances to match emission limitations
- + • But needed to do something for new and clean sources



Lessons for RGGI

- Specifying allocations in statute messy for Congress, but enabled quick start for program
- Made life easier for the EPA, although there were data issues
- Auction to help market, not to raise revenue, worked well
- Renewables and efficiency not used much for acid rain, but might be much more important for GHGs
- (Scrubbing) technology incentives used; repowering not; low-carbon technology (e.g., IGCC, CCGT) incentives might matter

Lessons for RGGI

- Fairness of the emission rate was a key issue; need to consider what's fair in RGGI context
- Emission rate based on SO₂ compliance options. What will generators do for CO₂?
- Consider glide path: existing → new
- Consider combo of “fair” formulas disciplined by ratchet
- Consider other policy goals
- Consider long term
- Consider innovation
- Yes, this is political

+ For more information

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