Markets and Regulation: Alternative or Complements?

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Policy Goals

1. Achieve environmental improvement goals
   Water quality, soil erosion, habitat, wetlands loss, etc.

2. Do so at lowest cost possible
   – Total cost (regardless of who pays)
   – Final Incidence (who bears burden)

Consumers, Producers, Taxpayers?
How do markets achieve environmental performance?

- Markets will provide environmental services to the point where Supply = Demand

- Problem:
  - environmental services are public goods
  - therefore generally inadequate demand

- Solution:
  - Government involvement
  - permit trading, “cap-and-trade,” “offsets”
Market: Environmental Goal Met

- SO2 market in Clean Air Act
  - 1990 Clean Air Act Amendments
  - Regulated SO2 discharges from power plants
- Made them tradable: cap-and-trade
  - Producer could meet cap themselves or could buy credits from those who exceeded their clean up
  - SO2 emissions from have fallen from 17.3 million tons in 1980 to about 7.6 million tons in 2008, a decrease in emissions of 56 percent (EPA)
Market: Environmental goal?

- Chicago Climate Exchange
  - Operated from 2003-2010
  - Established ground rules, proof of concept, but
  - Ceased trading due to inactivity in C markets.

- Non point source: Water Quality Trading
  - Permit requirements (NPDES) on point sources only
  - ~475 of 700 watersheds agriculture contributes 90%+ of N loads (Ribaudo et al. 2008)
  - No chance for water quality trading to achieve significant reductions
Markets and Cost

• Well functioning markets are about competition: lowest cost dominates

• Less discussed, role of “property rights”
  – who gets to choose level of pollution
  – society, regulations determine legal limit
  – polluters, private property
Cost share programs - voluntary
  – Conservation Reserve Program,
  – Environmental Quality Improvement Program,
  – Conservation Security Program, and
  – Wetlands Reserve Program, etc.

Reverse auctions

Offsets (baseline and trade)

Labeling, consumer information programs

Conservation compliance
Property rights with society

• Approach for many pollutants
  – Industrial sources air pollution
  – Point sources water pollution
  – Smoking bans, etc.

• Policies that are consistent with:
  – Cap and trade (capped sectors)
  – Regulatory requirements
BMPs: Everglades Agricultural Area

• 718,000 acres (40 acre fields)

• Everglades Regulatory Program
  – goal 25% P reduction overall
  – mandatory BMPs, 1995
  – Implemented via points
    • flexibility in BMPs, 25 points/farm
    • expert judgment set point values
    • must implement and monitor WQ
EAA Regulatory Program

• Property Rights: with citizens

• First 3 years: 55% P load reduction (SFWMD, 1998)

• Unable to find information on costs
  – Direct cost of BMPs
  – Lost profit
  – Cost of monitoring
  – Cost of program implementation
Permit Trading System Based on Points

• Assign points to each practice/landuse
• Set total points for watershed and allocate
• Allow trading
• Adopt adaptive management
• Include innovation options
Features

- Puts property rights to clean water in hands of society
- Addresses fairness – early adopters rewarded
- Could use observability of practices as part of point basis
Which works best to achieve these goals: Markets or Regulation?

- Markets: achieve cost reductions, but usually under provide environmental improvements
- Regulations: achieve environmental improvements, but usually not lowest cost
- Markets AND Regulation valuable
- Property rights is important part of story as well
Thanks for your attention!