

Renewable Electricity Standards, Energy Efficiency, and Cost-Effective Climate Change Policy

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▫ Studying the Global Information Economy ▫

Climate Change Proposals

- Cap-and-trade
- Renewable electricity standard (RES)
- Energy efficiency
- How do these approaches fit together?

Cap-and-Trade

- Market-oriented approach
 - Specifies a goal and allows market to choose least-cost ways of achieving goal
 - In principle, leads to cost-effective GHG emissions-reduction
 - C-B a different question

Renewable Electricity Standard

- Opposite of market-oriented approach
- Prescribes technologies regardless of cost and establishes no emissions-reduction goal
- Unnecessary if have cap-and-trade
- Raises costs of achieving any level of GHG emissions reduction

Costs of RES

- Renewables generally not competitive with fossil fuels
- Added transmission costs
- Need backup from conventional generation
- RFF study: RES costs rise sharply at 15-20%
 - Substitution of natural gas for nuclear

Energy Efficiency

- Including energy efficiency moves RES closer to performance standard
- Allows goals to be achieved at lower cost
- Utilities will have incentive to substitute efficiency for renewable generation whenever former less costly.
- Gives utilities incentive to promote conservation measures, including smart technologies, dynamic pricing
- Should not be cap. A binding cap will raise costs

Importance of Baseline Adjustment

- If base is constant then one unit increase in electricity consumption requires 1.20 unit increase in renewable generation (with 20% RES)
 - One unit to make up for lost savings
 - 0.20 unit to meet RES target
- Base needs to grow at trend rate of consumption over time.

Conclusion

- Incorporating energy efficiency into RES is a good thing, but still second-best solution
- Strengthens utilities' incentives to promote efficiency whenever less costly than generation from renewables
- Achieve GHG reduction goals at lower cost