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Promoting Energy Efficiency At the Product Supply Level: The Possible Uses of Market Orientated Regulations

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CIEEDAC
Canadian Industrial Energy Data Analysis Centre





Outline of presentation

- The challenges of achieving energy efficiency
- Review of policy criteria (effectiveness, efficiency, administrative and political feasibility)
- Brief history of market orientated regulations in other jurisdictions/areas
 - SO_x trading program for electricity production
 - California ZEV/LEV standards in transportation
 - Renewable portfolio standards and feed-in tariffs in electricity
- Lessons from history, and possible future approaches
 - Performance contracting approach? Others?





The challenges of energy efficiency

- The significant public “bads” associated with energy use (e.g. climate change, local air pollution and energy security)
- However, energy is generally a small part of the operating budget, and off the “mission critical” radar of managers and consumers
- Effective policy formation is held back by the dysfunctional relationship between “techno-optimists” and “econo-pessimists” . . .





Policy Criteria

- Effectiveness
 - Does the policy achieve the target?
- Efficiency
 - Is the policy target met at the least cost?
- Political acceptability
 - How acceptable is the policy to stakeholders and governments of the day?
- Administrative feasibility
 - Can the policy be implemented?
- *While effectiveness is paramount, the criteria are interrelated; a policy must pass them all*





Policy Instruments

- Voluntary approaches: *ineffective for bigger changes*
- Subsidies: *ineffective and inefficient in most cases*
 - Freeridership and cost
 - Complementary policy?
- C&C regulations: *effective but usually inefficient*
 - Complementary policy?
- Market based policies: *effective, efficient, admin. feasible but face (declining?) acceptability issues*
 - Taxes, RPS, VES, cap and trade
 - Directs innovation towards more efficient technologies
 - May need complementary policies to address coverage or market failure





Brief history of market orientated regulations in other jurisdictions/areas

- SO_x trading program for electricity production
 - Proved the case for effectiveness, cost, and the value of surprises.
- California ZEV/LEV standards in transportation
 - “low- and zero-emission vehicles must achieve minimum market shares by specified deadlines.”
 - Showed the value of policy induced information
- Renewable portfolio standards and feed-in tariffs in electricity
 - “renewable energy must achieve minimum market shares by specified deadlines.”
 - Showed the capacity for market transformation





Lessons of regulated niche markets

- Sends long-run signal to manufacturers to innovate and commercialize without affecting average energy prices – PF.
- Does not cause accelerated retirement of existing capital stocks; in sync with the rate of capital stock turnover – EE
- Gives producers flexibility to trade among themselves to minimize cost of compliance – EE.
- Minimum production induces learning by doing – EE.
- Sector targets can be adjusted as prices and information reveal the sectoral marginal costs – EE.
- Cost of learning is paid for by the consumers of conventional, polluting technologies/energy, instead of tax payers – PF.





Possible future applications

- Utilities and their need to meet capacity requirements.
 - Performance contracting? (i.e. utility pays widget manufacturers for reduced generation requirement)
 - Tradable consumption/efficiency standard? (~C&T) (i.e. widget industry absolute consumption or efficiency standard required, but requirement can be met by trading amongst producers)
 - Advanced efficiency requirement for a given share of market? (~RPS) (i.e. producers must be continually selling a small share of new super-efficient technologies)





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End of presentation – thank you for
your attention