



Economic Instruments for Conservation

Conservation Summit

November 30, 2017



Introductions – Green Analytics

- **Employee-owned**
- **Independent consulting firm**

- **Environmental and natural resource economists**
- **Work with governments, non-government organizations and the private sector**
- **Offices in Alberta and Ontario**

**Natural resource management to protect the environment
and provide economic returns**



Presentation Objectives

- **To review the rationale for and benefits of economic instruments**
- **To present the criteria used to assess policy options and discuss when economic instruments may be appropriate**
- **To present a series of examples of economic instruments to inform discussions on the use of such instruments in Canada**



The Problem

- **Market prices do not tell the environmental truth**
- **Externalities exist**
- **Non-optimal purchasing and investment decisions**
- **Prices need to reflect true costs and benefits (financial and environmental)**



To Internalize Costs and Benefits

- **Command and control**
 - Standards, limits and bans
- **Non-market voluntary**
 - Information disclosure
 - Voluntary agreements
- **Education initiatives**
- **Economic instruments**



Types of Economic Instruments

- **Market-based**
 - Permit and credit trading
 - Offset and banking schemes
- **Taxes and fees**
 - On environmentally harmful goods/activities
- **Payments**
 - Payments for management practices or ecosystem services
 - Price supports
 - Tax breaks, exemptions
 - Grants
- **Subsidy removal**



Benefits of Economic Instruments

- **Polluter pays principle**
 - Pricing to reflect the value of environmental goods and services
 - Pricing to internalize the cost of pollution and environmental damage
- **Economic efficiency**
 - Prices are a better reflection of true costs and benefits
 - More informed decision making
- **Flexible mechanisms**
 - Decision making rests with the affected parties



Benefits of Economic Instruments

- **Innovation**
 - Incentives for continuous improvements
- **Complement other policies**
 - Voluntary
 - Command and control
- **Revenue generation**
 - Finance supportive incentives, funds or infrastructure
 - Reduce existing taxes



When to Choose Economic Instruments

- **Identify an environmental challenge**
- **Decide to intervene**
- **Establish a policy goal**
- **Evaluate alternative policy instruments**
 - **Command and control, education, voluntary programs, economic instruments**
 - **Which economic instrument to use**



Common Policy Evaluation Criteria

- **Environmental effectiveness**
 - Does the instrument achieve stated objectives
- **Cost effectiveness**
 - Cost per unit of change/improvement
- **Administration and compliance requirements**
 - Monitoring, enforcement requirements
- **Fairness**
 - Competitiveness, trade, income distribution
- **Political/policy paradigm**
 - Consistent with government policy
- **Dynamic effects**
 - Continuous innovation



Economic Instruments May be Desirable

- Flexibility of individual response is desirable
- Existing instruments not achieving objectives
- Administrative burden of command and control is high
- Voluntary approaches require support
- Continuous improvements or innovation is desirable
- Command and control is in place or will be in place, but pre-compliance, beyond compliance, or compliance transition support is desired



Economic Instruments : Revenue for Conservation

- **Development charges and taxes**
 - On harmful goods/activities
 - On recreational goods
 - On resource dependant industries
- **Transferable development rights (% from)**
- **Tradable credits (%)**
- **Permits for habitat/biodiversity (fee)**
- **Habitat banking/conservation offsets (fee in lieu)**



Payment: Ecological Gifts Program (Federal)

- Applied to agricultural lands, wetlands, forests
- Donation of ecologically sensitive lands to protect them in perpetuity
- Donors are private individuals; beneficiaries are NGOs/government bodies
- Donors receive a tax benefit equal to the value of the property



Payment: Alternative Land Use Services (ALUS) (AB, MB, ON, PEI, QC)

- **Started in Alberta, now in 5 provinces**
- **Provision of wetland, ecosystem services in return for direct payment**
- **Providers are private land owners; buyers are governments and conservation groups**
- **Service examples:**
 - **Protect and restore wetlands**
 - **Buffers along waterways to improve water quality and fish habitat**
 - **Re-introduction of flowering plants for pollinators**



Payment: Conservation Land Tax Incentive Program (CLTIP) (Ontario)

- **CLTIP exempts private landowners from property tax on eligible portions of their properties for long-term stewardship commitments**
- **Lands must first be approved by MNRF as a provincially significant wetland, area of natural and scientific interest, or endangered species habitat**



Payment: Payments for Ecosystem Services (Costa Rica)

- **Costa Rica allows owners of forests to apply for payments for the ecosystem services the forests provide**
 - Carbon sequestration
 - Water catchment areas
 - Biodiversity protection
 - Scenic beauty
- **National Forestry Fund buys the rights to these services and sells them as credits to developers**
- **Has helped Costa Rica to expand its forest cover from 20% in 1980s to 50% today**



Trading: Wetlands Mitigation Directive (AB)

- **Framework for conserving, restoring and protecting Alberta's wetlands**
- **Policy is placed within the mitigation hierarchy**
 - Avoid, minimize, then replacement
- **Three replacement options**
 - Purchase credits from a wetland bank
 - Pay an in-lieu fee
 - Restore, enhance, or construct wetland



Trading: Fish Habitat Banking (Federal)

- **No net loss policy for fish habitat**
- **New fish habitat can be banked to offset future habitat destruction**
- **The rule of thumb is that harmful alteration, disruption or destruction requires twice as much habitat to be created**
- **US version is the world's most advanced**



Trading: Mitigation/Conservation Banking (USA)

- **Options for the destruction of regulated habitat:**
 - Restoration of local, similar habitat
 - Pay in-lieu fees to a local conservation organization to restore
 - Buy third-party, local conservation credits (mitigation banking)
- **Total value of credits >\$1.5B per annum; average \$74,500/acre**
- **90 types of credit exist depending on location and species**
- **Bankers are rural landowners or small entrepreneurs**
- **Buyers are developers, public agencies and extractive companies**
- **Credits are marketed to projects during their permitting stage**



Tax/Charge: UK Aggregates Levy

- Tax on commercial exploitation of rock, sand and gravel removed from the ground
- Promotes recycling of aggregates and reduced destruction due to quarrying
- Currently 2£/tonne (~\$3.50), brings in 250-400 £m (\$400-700m) annually
- Proceeds go to sustainability projects
- Canadian jurisdictions have similar, much smaller levies: 11.5¢ in Ontario, 25¢ in Alberta, 53¢ in Quebec



Conclusion

- **Economic instruments provide a means to internalize costs and benefits**
- **There are a range of instruments available that have been applied to conservation**
- **The use of such instruments in Canada is less common than elsewhere**
- **Opportunities exist to increase the use of economic instruments in Canada**

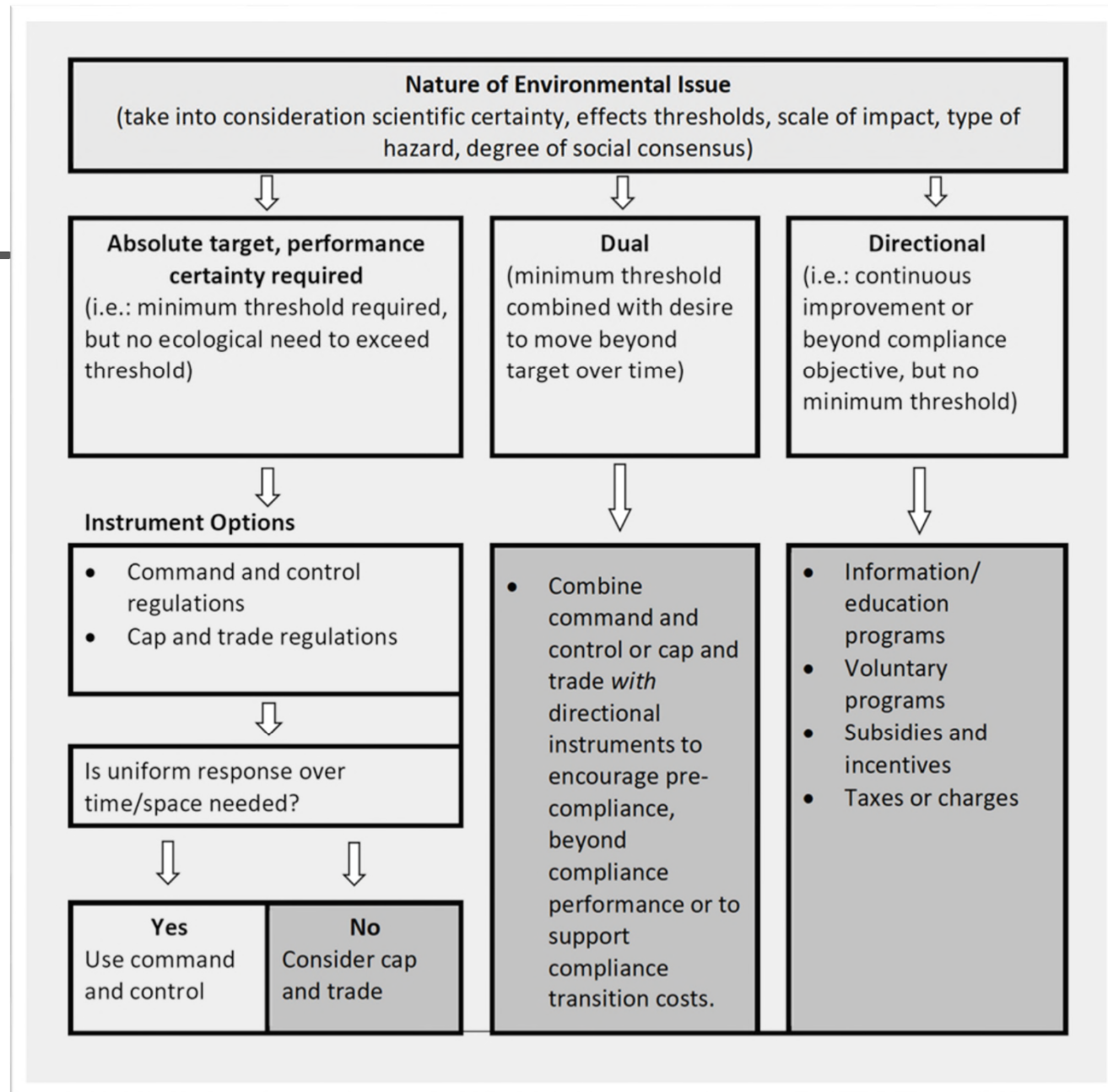


Extra Slides



Here, the focus is on the environmental outcome.

Other evaluation criteria also need to be considered (eg. administrative and compliance costs)

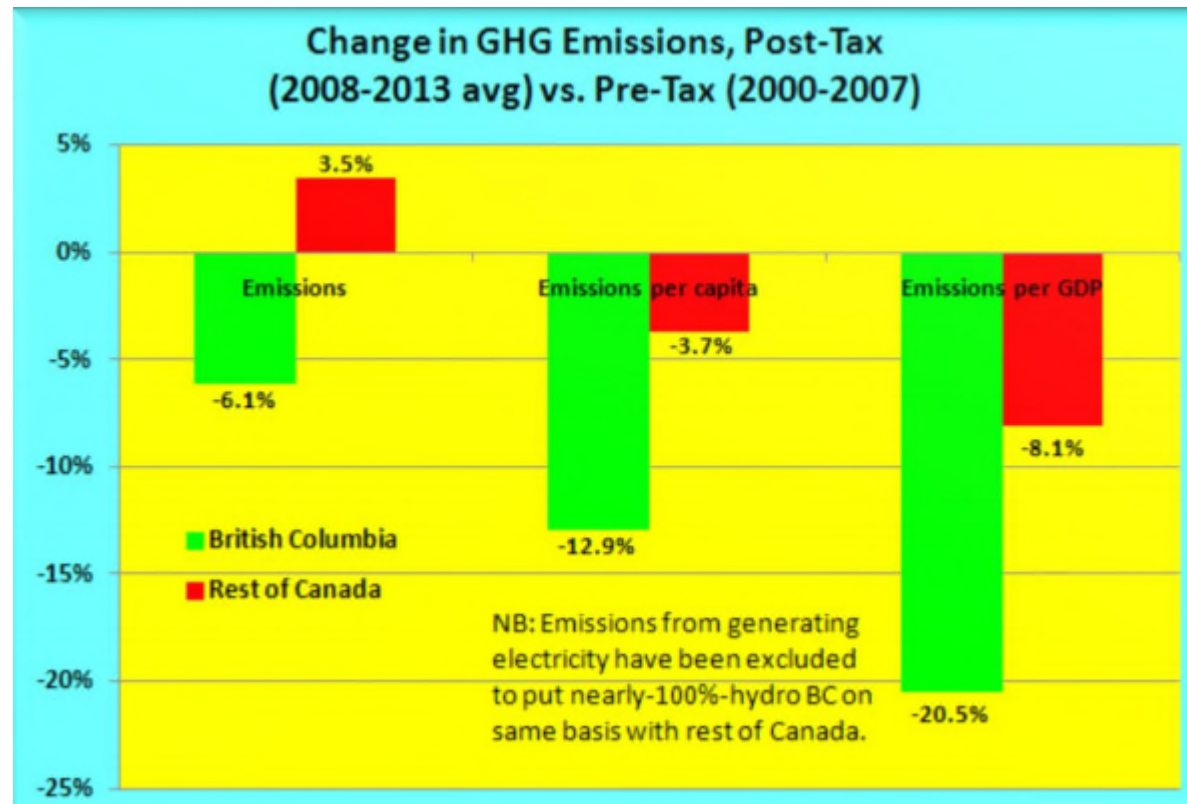


Tax/Charge: Carbon Tax (BC)

- **Introduced in 2008, first in North America**
- **30\$/tonne, applied to ~70% of BC's emissions**
- **Revenue-neutral**
 - Taxes on employment, investments and economic growth are reduced accordingly
- **B.C.'s emissions have declined since the introduction of the tax; the economy continues to expand**



Carbon Tax (BC): GHG Emissions Results



Carbon Tax in Canada - Future

- **Alberta now has carbon tax (\$30/tonne by 2018)**
- **Canadian Federal government has established a 50\$/tonne carbon tax**
- **Federal carbon tax will become a mandatory national floor for all provinces**
- **Phase-in at rate of \$10/year spread from 2018-2022**
- **New provincial NDP/Green government in BC will raise tax to \$50/tonne by 2021, move away from revenue-neutrality**



Trading: Transfer of Development Rights (USA)

- Exchanges land to be conserved for land to be developed
- A transfer system decides the value of the conserved land and the value of the developed land
- A very popular economic instrument in the USA

