Sustainable Prosperity

making markets work *for* the environment

Principles for Pricing Carbon

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Sustainable Prosperity is a new research-policy initaitive aimed at building a healthy environment and economy, by making markets work *for* the environment.

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Introduction

The ecological foundation of our long-term prosperity is at risk from our failure to fully assign a cost to pollution and a value to ecosystem services. One decisive step to correcting this failure will be to place a price on the emissions of carbon dioxide and other greenhouse gases originating from human activity that cause climate change ("carbon emissions").

Carbon[1] pricing is widely considered the primary policy tool for lowering carbon emissions. As such, it is the building block for getting serious about climate change. Governments, concerned about competitiveness impacts, have in the past largely refrained from unilateral action on carbon pricing. With awareness mounting of the risks associated with climate change, the time for such hesitancy is past. The reward for taking leadership in pricing carbon will be the ability to create environmentally effective and cost effective pricing policies, as opposed to having to adopt the possibly ineffective or costly policies of others.

In theory, a uniform carbon price will stimulate the least cost reductions across all covered sources of emissions, thereby reducing the overall cost of emission reductions to society—a virtue given the large scale and the pervasiveness of cuts needed. A carbon price applied broadly across the economy also avoids the need for a large number of industry or technology specific emissions regulations (although some may still be helpful), as well as the need to amend these as technologies change. This is a benefit given the myriad of activities and technologies that emit greenhouse gases. Carbon pricing will reward leadership, innovation, and investments to reduce emissions. However the extent to which these theoretical benefits are achieved will depend on the design of the carbon pricing policy.

A price for emitting carbon can either be established directly, through a fixed charge per tonne of carbon emitted, or indirectly, by creating

1 The word "carbon" is used as shorthand for the six greenhouse gases covered by the Kyoto Protocol. Carbon dioxide is the most important of these.

market scarcity through a fixed ceiling for emissions. Discussion of carbon pricing is often complicated by characterizing these as mutually exclusive approaches, with a carbon tax offering price certainty at one extreme and a cap and trade system offering quantity certainty at the other. In practice, carbon pricing policies have typically emerged as a hybrid of the two, as policy makers address additional considerations such as emissions source coverage, allocation of burden between industries, compliance payments in lieu of emission reductions, mitigation of transitional and competitiveness impacts, and coordination of efforts across jurisdictions. There will also be a continuing need for adaptive management of the price level or quantity cap because the cost curve for emission reductions is not entirely known.

The discussion of carbon pricing is further complicated by popular misunderstandings about the potential application of each approach: for example, that a cap and trade system can only be applied to large final emitters; that permits will be free, not auctioned, under a cap and trade system; that international linkages can only be achieved through a cap and trade system; or that a carbon tax will necessarily elicit a lesser emissions reduction than a defined cap.

This paper therefore focuses on high-level principles for carbon pricing policy, which are intended to guide the detailed design of the specific policy.

Eight Principles

No matter the instrument(s), a carbon pricing policy should be:

1. **Comprehensive, with no exemptions:** A price signal should apply across the economy, encompassing all sources and sizes of emissions, so that the prices of all goods and services reflect the social cost of their direct and indirect emissions. In the event of a cap and trade system, the allocation of emission permits should be on a fully auctioned basis as soon as transitional concerns and demonstrated competitiveness concerns have been addressed. Trial periods may be needed to develop measurement methodologies and reporting systems for some difficult-to-quantify emissions.

2. **Nation-wide:** The federal government should take the lead in pricing carbon or in establishing a framework for a minimum carbon price. A common price across the country will enable us to meet our international obligations at the most cost effective price, and will also support the economic and social union of the country.

3. **Simple and readily implemented:** The policy should be designed and implemented to be as simple as possible, and avoid complex rules and exceptions. Policies with shorter lead-times to come into effect (policy design, introduction, and implementation) should be adopted over policies with equivalent outcomes, but longer lead times. Research has concluded that fast implementation of a strong carbon price signal will make long-term deep emission reduction targets less expensive, and will result in lower cumulative emissions in the atmosphere.

4. **Transparent and accountable:** To ensure policy integrity and decision-making accountability, the pricing policy should be fully transparent with respect to all policy objectives, interim price and/or quantity targets, design details and implementation decisions. Transparency and accountability is especially critical with regard to the amount of revenue collected and how it is used or refunded, beyond customary fiscal policy practices.

5. **Complemented where a price signal alone is insufficient:** Non-price policies should also be used for emissions sources or technologies that are price inelastic due to market failures; and for research and development for emission-reducing technologies ahead of the pace stimulated by the carbon price alone. Non-price policies should be reviewed regularly to determine if they remain necessary.

The carbon price itself should be:

6. **Environmentally effective:** The carbon price, and future price schedule, should be set at a level sufficiently stringent that, based on the scope of emissions covered and supported by complementary policies, it will demonstrably achieve the jurisdiction's specified interim and long term emissions reduction targets.

7. **Ultimately comparable to that in other countries:** To minimize competitiveness impacts and to avoid attracting trade sanctions, the carbon price in Canada should ultimately be comparable to that in other countries. This does not nullify the need to show initial leadership in adopting carbon pricing.

8. **Predictable but adaptable:** A strong carbon price should be initiated without delay, as a later start or a lower price in the near term will require higher prices in the long term to

produce the same amount of reductions. The price should rise steadily to enable reasonable adjustment and planning of future investments. The price should be recalibrated if required by changing scientific knowledge, international reduction goals, or different than expected emissions reduction response. To promote transparency and objectivity, an independent advisory panel should be established to assess this need.

Other Considerations

Use of government revenue from carbon pricing:

New revenues to governments will accrue from carbon taxes and auctioned emissions allowances. If carbon is priced comprehensively and at price levels designed to be environmentally effective, these revenues will be substantial. Unlike many other taxes, whose primary purpose is to raise revenue, the primary purpose of carbon pricing is to reduce emissions, indicating a higher onus of accountability.

While the balance between options will depend on political perspective, recommended uses of revenue include:

- Addressing the unintended consequences of carbon pricing which includes specific measures to ease transition and soften the impact of a carbon price on:
  - *trade exposed sectors* if their competitors are not paying a comparable price (for example, through a slower ramp up in tax rate or partial free allocation of permits for a fixed transition period). To prevent windfalls, the need for this must be demonstrated on an industry-by-industry basis, and there must be transparency and accountability around these measures to avoid protectionism;

  - *vulnerable households*, for example those with low-incomes or disproportionately greater transportation or heating needs;
  - issues arising from *significant interregional wealth transfer*.
- Funding complementary emission reduction programs, as described in point 5.
- Supporting emission reductions and adaptation in developing countries.
- Reducing distortions in the broader corporate and personal tax systems.
- Investing in clean technology development.

About the Author

Stephanie Cairns has worked on fiscal reform, climate change and energy policy since founding Canada's first program on Ecological Fiscal Reform at the Pembina Institute in 1994. She has worked on Parliament Hill first in a caucus Research Bureau, and later in the Prime Minister's Policy and Research Office. Since 1998 she has been a consultant in the field of sustainable development, providing policy analysis and strategy advice to think tanks, federal government departments, leadership corporations and non-government organizations, and making a major contribution to the National Round Table on the Environment and the Economy's programs on Ecological Fiscal Reform and Long Term Energy and Climate Change Strategies. She has a B.A from the University of Toronto and an M.Sc. from the International Institute for Industrial Environmental Economics at Lund University, Sweden.

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