Manitoba Consultation on Cap-and-Trade 2011

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Sustainable Prosperity

SUBMISSION

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TO: Manitoba Government
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RE: SP submission to Manitoba consultation on Cap-and-Trade 2011

Sustainable Prosperity (SP) is a national research and policy network, based at the University of Ottawa. SP focuses on market-based approaches to build a stronger, greener economy in Canada. It brings together business, policy and academic leaders to developing innovative ideas and inform policy development. Our *Low Carbon Economy Policy Research Cluster* synthesizes cutting-edge research and policy experiences on carbon pricing and its role in the transition to a low carbon economy, seeking to better understand how carbon taxes, cap-and-trade and other carbon pricing systems can effectively contribute to innovation and competitiveness for a more sustainable and prosperous society.

Sustainable Prosperity welcomes the opportunity to comment on the Manitoba Government's Cap-and-trade Consultation, and commends Manitoba for its commitment to public engagement and consultation on an issue of critical importance to Manitoba's economic and environmental prosperity.

Climate change presents a unique challenge for decision-makers: it is the greatest and widest-ranging market failure ever seen.[1] At the same time, it presents a unique opportunity: the core policy response to this market failure, carbon pricing, also generates a new stream of revenue to government and supports the shift to a low-carbon economy, critical for success in an increasingly carbon-constrained future.

[1] Stern, Nicholas. 2006. "The Economics of Climate Change." The Stern Review. Cabinet Office -.HM Treasury. Pages xvi-xvii.

This submission is intended to support the government's consideration of a possible cap-and-trade system, and inform public debate on the detailed design of such a system in the coming year. It is organized into four sections:

1) Initial comments

2) Cap-and-trade systems

3) Manitoba and the Western Climate Initiative

4) Conclusion

1) Initial Comments

First, **we commend Manitoba for considering a cap-and-trade system**. Economists widely agree that pricing carbon is the most efficient approach to reducing carbon emissions from an economic perspective. Pricing carbon has three principal advantages over a traditional 'command and control' approach to carbon regulation: (i) it provides an incentive to reduce emissions without favouring any one way of doing so; (ii) it can achieve reductions at much lower cost (thereby allowing for greater reductions); and (iii) it creates a continuous incentive for clean innovation, since there is an economic reward for each additional unit of emission reduction.[2]

Manitoba has already taken great strides towards creating the enabling legal structure to reduce its carbon emissions, by endorsing the Kyoto Protocol, passing the *Climate Change and Emissions Reductions Act of 2008* and joining the Western Climate Initiative in 2007. The province already taxes carbon arising from coal combustion at $10/tonne (rising to $30/tonne). The province's electricity grid is among the cleanest in Canada with 99% hydroelectricity and the decision to phase out coal-fired generation. To meet the province's target to reduce carbon emissions by 6% below 1990 levels by the end of 2012 requires the deployment of policy instruments such as a comprehensive cap-and-trade system to incent emissions reductions across the entire economy.

Second, **the introduction of a cap-and-trade system would make Manitoba one of the leading jurisdictions in North America in terms of carbon pricing**. Alberta, BC, and Quebec have already put a price on emissions, through carbon taxes or a carbon compliance price for regulated emitters. In addition, BC, Ontario and Quebec have passed enabling legislation for a cap-and-trade system that would link to the Western Climate Initiative's system in 2012. Manitoba has the opportunity to lead by implementing a comprehensive cap-and-trade system.

[2] Ibid, and Stavins, Robert. November 2001. "Experience with Market Based Environmental Policy Instruments." Resources for the Future. Page 2.

2) Cap-and-Trade Systems

A cap-and-trade system, whereby a carbon price is established by setting an upper limit on the right to emit carbon dioxide (CO_2), has proven to be a successful instrument for reducing emissions in a cost-effective way. Cap-and-trade systems have been already implemented in many US States, Australia, and in the European Union (see below for more details).

Some of the benefits of cap-and-trade are that it provides:

- Certainty in emissions reductions, which allows the government to achieve emissions reduction targets.
- Companies with the flexibility to determine how emissions reductions targets will be achieved, which increases the economic efficiency of the policy. It encourages the most efficient reduction projects which lowers the overall cost.
- Compliance flexibility for companies (i.e. reduce emissions or buy allowances or offsets).
- Profit incentive for companies to reduce emissions.

The design of key elements of a cap-and-trade system critically impacts the system's effectiveness and economic effects. General judgements about the effectiveness of a cap-and-trade system are meaningless since so much depends on how the system is designed and implemented. Some of the key design decisions policy makers must make are:

- **Coverage:** Gases and sectors covered; whether at the upstream or downstream level.
- **Target setting:** The level of the initial cap and the rate of decline.
- **Timeline:** How the system will be phased in (coverage, allowance distribution, target, etc.).
- **Price control:** The use of price collars, ceilings and floors to control the allowance price.
- **Offsets:** The degree to which domestic or international offsets are allowed.
- **Allowance distribution basis:** Whether allowances are auctioned, grandfathered or given to companies based on an updating allocation method (e.g. based on direct emissions or efficiency benchmarks).
- **Competitiveness:** How vulnerable sectors will be identified and protected.
- **Complementary policies:** The degree to which a cap-and-trade policy is complemented by supporting regulations and policies to drive greater emissions reductions.

Other design elements that are important for policy makers to consider include market oversight, baselines, emissions monitoring and verification, and emissions registry. Sustainable Prosperity's opinion on various design decisions for Manitoba can be found in section 3.

Governments must balance the need for emissions reductions (which can be more easily achieved with full auctioning and full sectoral coverage) and the need to support industrial sectors and households in the transition to a low-carbon economy.

Successful examples of cap-and-trade: United States and European Union

United States- Sulphur dioxide (SO_2) trading

In the 1980's there were over seventy pieces of proposed legislation advocating for various regulatory approaches to address the US's acid rain problem. Instead of going the regulatory route, the United States Environmental Protection Agency (EPA) decided to implement an emissions trading program, covering high-emitting facilities (mainly coal-burning power plants). Prior to implementation, the EPA estimated the program cost at $6 billion per year (2000 dollars); in reality the cost has been between $1.1 to $1.8 billion annually – just 20 to 30 percent of the original forecast.[3] The SO_2 trading program achieved its emission reduction goals ahead of schedule, with 100% compliance.[4] The program has reduced SO_2 emissions by over 10 million tons (more than 60 percent).[5]

European Union Emissions Trading System (EU ETS)

The European Union implemented its Emissions Trading System (EU ETS) – the world's first and largest cap-and-trade scheme–in 2005.[6] The European Union's six years of experience with CO_2 emissions trading has produced a rich body of knowledge and evidence about the environmental and economic impacts of a cap-and-trade system.

During the first phase (2005- 2007), CO_2 emissions in the EU fell by 200 million tons (a 3% reduction), which is attributable to the existence of a carbon price.[7] The EU's CO_2 emissions have stopped growing and have started on a downward trajectory, while maintaining robust economic growth.[8]

At the sectoral level, prior to the implementation of the EU ETS, there were dire predictions for the competitiveness of the covered sectors. Theoretical models predicted significant loss of market share of offshoring of production (carbon leakage), ranging from 0.5 percent to 25 percent in the iron and steel sector and between 40 to 70 percent in the cement sector (depending on how allowances are distributed and using a price of €20/tonne in the EU-27).[9] An empirical evaluation of the steel, cement, aluminum and refineries sectors under the EU ETS's first 2005-2007 pilot period did not reveal significant carbon leakage.[10]

[3] Environmental Defense Fund. 2007. "The Cap-and-trade Success Story." Available at: http://www.edf.org/page.cfm?tagID=1085
[4] Ellerman, Denny, Joskow, Paul, Schmalensee, Richard, Montero, Juan-Pablo and Elizabeth M. Bailey. 2005. *Markets for Clean Air: The U.S. Acid Rain Program*. Cambridge University Press.
[5] United States Environmental Protection Agency (EPA). "SO_2 Emission Reductions from Acid Rain Program Sources and Improvements in Air Quality." Available at: http://www.epa.gov/capandtrade/maps/so2.html
[6] European Commission. "Emissions Trading System (EU ETS)." Available at: http://ec.europa.eu/clima/policies/ets/index_en.htm
[7] Ellerman, Denny, Convery, Frank and Christian De Perthuis. 2010. *Pricing Carbon*. Cambridge University Press. Page 166.
[8] Ibid.
[9] Demailly & Quirion 2006; Ponssard and Walker 2008, quoted in Wooders, Peter, Reinaud, Julia and Aaron Cosbey. October 2009. "Options for Policy-Makers: Addressing Competitiveness, Leakage, and Climate Change." International Institute for Sustainable Development. Page 23.
[10] Reinaud, Julia. 2008. "Issues behind competitiveness and carbon leakage: Focus on heavy industry." International Energy Agency.

Design of a cap-and-trade system

Eight principles for the design of a cap-and-trade system
Sustainable Prosperity, based on an expert dialogue between leaders from business, non-profits and academia, has developed eight principles to guide Canada's approach to carbon pricing, whether this be implemented through a carbon tax, through a cap-and-trade system (as is being discussed in Manitoba), or through a combination of both. *The following section reflects a carefully negotiated expert consensus text intended for a national context; in respect for the consensus, the text cannot be amended, but we underline that some interpretation for a provincial (rather than national) context is necessary. See the link below for the full document:*
http://sustainableprosperity.ca/article11&highlight=carbon%20pricing%20principles

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

- √ **Comprehensive, with no exemptions:** A price signal should apply across the economy, providing an incentive to all businesses and households to cut emissions. In a cap-and-trade system, emission permits should be fully auctioned or priced (some transitional accommodation may be needed, such as for energy-intensive, trade-exposed sectors).
- √ **Nation-wide:** The federal government should take the lead in pricing carbon, or establish a common framework for a minimum carbon price. A balance is needed between allowing regional innovation while avoiding costly policy fragmentation.
- √ **Simple and readily implemented:** Policies should avoid complex rules and exceptions. Ones with shorter lead-times to take effect are preferable, since fast implementation will make long-term deep emission reductions less expensive.
- √ **Transparent and accountable:** There should be transparency with respect to policy objectives (e.g. price and/or quantity targets) and implementation, and use of revenues.
- √ **Complemented where a price signal alone is insufficient:** Non-price policies (e.g. regulations or incentives) should also be used in certain situations, such as for activities that are price inelastic, or to stimulate accelerated technology research and development.

The carbon price itself should be:

- √ **Environmentally effective:** The price should be set at a level that will achieve the jurisdiction's interim and long term emissions reduction targets.
- √ **Comparable to that in other countries:** To minimize competitiveness impacts and avoid trade sanctions, Canada's carbon price should be in line with other countries'. This does not nullify the need for initial leadership in adopting carbon pricing.
- √ **Predictable but adaptable:** A strong carbon price should be initiated swiftly. It should rise steadily to enable adjustment and planning. It should be recalibrated if required by changing science, international goals, or emissions reduction response. An independent advisory panel would promote transparency and objectivity.

3) Manitoba and the Western Climate Initiative (WCI)

The government of Manitoba committed in 2009 to develop and eventually implement legislation enabling the creation of a cap-and-trade system to reduce greenhouse gas (GHG) emissions in the province. A key factor in the development of Manitoba's cap-and-trade policy is the Western Climate Initiative (WCI), to which Manitoba is a member (along with a number of other Canadian provinces, notably Ontario and British Columbia; and U.S. states, notably California and Washington). As a member of WCI, Manitoba has participated in the development of design proposals for a regional cap-and-trade system, and has indicated that it considers the WCI guidance and policy development in this area to be a framework to be used in its own legislative development.

Although the Manitoba consultation document does not provide any detail on how the province intends to move forward on specific design elements, we can extract from the WCI guidance documents the following general assumptions about a Manitoba cap-and-trade system.

First, the coverage for the cap will be economy-wide. Second, the province of Manitoba will be responsible for setting the "cap" for the province, and allocating allowances to the covered entities in its jurisdiction. Third, allowances issued in Manitoba will be fungible in a WCI-wide allowance trading system, meaning that Manitoba-issued allowances can be bought and sold within the larger regional trading system. And finally, there will be limits on the use of offsets (i.e. emission reductions achieved outside of the covered sectors) within the WCI system.

The likely impacts of a WCI cap-and-trade system on Manitoba

Taking the WCI design document as the template for a Manitoba cap-and-trade system, Sustainable Prosperity has undertaken a basic analysis of the likely impacts of such a system on the province.

This analysis has involved original modeling using a macroeconomic and emissions model with trade linkages between Canadian provinces and the United States. We modeled a stylized version of the WCI detailed design document to assess the impacts of a WCI cap-and-trade system on Manitoba in 2020. From this modeling exercise, we can point to the following findings:

Achievement of emissions reduction target

- **Decarbonization trends already at play in the province put Manitoba in a good position to achieve a fixed 2005 emission reduction target**. Current economic forecasts indicate that the economy of Manitoba will be about 1.26 times bigger in 2020 relative to 2010, with emissions growing by about 5% over the same period. This implies a significant decoupling of GDP from emissions, with a 16% improvement in emission per unit of GDP between 2010 and 2020.

- **The WCI compliance liability (i.e. reduction target) for Manitoba is 3.15 Mt in 2020.** WCI compliance targets, assuming these are applied equally across partners, require compliance of about 3.15 Mt in 2020 (for -15% below 2005 emissions).

- **At the WCI forecast carbon price of $33, about 1.8 Mt of reductions[11] are available in Manitoba, or about 57% of the possible WCI compliance liability of 3.15 Mt.** Using the $33 WCI forecast carbon price and applying this to emissions in 2020 indicates that emission reductions under the proposed WCI Program Coverage[12] would still leave about 1.3 Mt of compliance to come from some other flexibility mechanism.[13]

Coverage

- **Given high domestic abatement costs, broad based coverage of emission sources as proposed under WCI is smart.** Squeezing all low cost opportunities out of the economy is an absolute necessity given the limited abatement potential in the province. To the extent that coverage includes all emissions, costs can be lowered.

Offsets

- **Agriculture offsets could more than close the gap, reducing Manitoba's WCI participation costs.** With a forecast of about 8 Mt of non-energy agriculture emissions in 2020, a high-end optimistic estimate indicates that ~3 Mt could be found at prices in the range of $33. This could then turn Manitoba into a net exporter of allowances, or reduce the domestic compliance liability significantly. Manitoba should therefore vigorously seek the inclusion of real and verifiable agricultural offsets in WCI.

Linking with WCI

- **Linked permit trade with the WCI makes sense for Manitoba.** Assuming that the target (-15%/2005) is real from a political perspective, costs could be 50% lower with linked WCI permit trade, with a carbon price required of about $60/tonne for domestic action alone versus the $33 WCI price. This cost savings has much to do with the sale of Manitoba agricultural offsets into the WCI, and Manitoba's ability to sell offsets below the forecast WCI carbon price of $33. The steep marginal abatement cost curve for Manitoba also makes WCI participation desirable, because there are not many low cost reductions available beyond the first few mega tonnes.

[11] A range of about 1.45 to 2.15 Mt is likely at $33 dollars.
[12] Combustion and process emissions from industry, energy producers and liquid fuels and not agriculture fugitives) WCI Detailed Design Document. Page DD-112.
[13] Note, we have captured early reduction allowances by including in the baseline the decommissioning of the Brandon coal facility and the Winnipeg landfill site.

Price control

- **Given high abatement costs, the WCI provides a good safety value to contain costs.** Again given the high cost emission profile for Manitoba, the cost containment provided through linking with the WCI is an effective way to contain costs.

- **In the absence of WCI participation, the province should seek to design its reduction programs to match the forecast WCI carbon prices.** An internal "hurdle rate" for provincial programs to achieve domestic reductions through programs should be set at the WCI price of $33/tonne (maxed to $60). This would ensure that Manitoba's efforts did not impose unduly high costs on industry or consumers.

Complementary regulations

- **Complementary regulations are a must.** Although the WCI provides the high potential to lower and contain costs, the province should seek to impose regulations on some emissions. Ideally, efforts should be made in transportation and buildings, with a mix of targeted energy efficiency and demand side management programs to obtain emission reductions in hard to reach places. To keep overall costs of regulations low, programs should be identified that deliver "infra marginal" emission reductions in the $30 to $60 range.

Competitiveness

- **Manitoba's low emission intensity is an advantage in a carbon-constrained world.** Our simulations suggest that some sectors, notably electricity and light manufacturing, would benefit under regional carbon constraints. Overall GDP impacts under similar carbon prices are lower in Manitoba than most other Canadian jurisdictions.

4) Conclusion

Based on our analysis, we can conclude the following: first, that that Manitoba would do well under a WCI cap-and-trade program relative to other Canadian jurisdictions; and second, that Manitoba has an interest in ensuring the eligibility of agricultural offsets within the broader WCI context (with a view to generating low cost emission reductions for Manitoba's needs, and for sale in the WCI-wide market).