



Dialogue on Carbon Pricing

CAMPUT Report

Overview: The Carbon Dialogue Series

This document is intended to provide a summary of the three sessions on carbon pricing and outline key considerations moving forward in the discussion on carbon pricing.

In early 2008, the Alberta Utilities Commission, CAMPUT, Canadian Gas Association, Canadian Electricity Association, and Ontario Energy Board, embarked on a three part series on carbon pricing involving experts from many fields including regulatory, energy and law and economics. The information contained herein has been prepared by the above noted organizations and is reflective of information presented and the discussions at the three sessions on Carbon Pricing. It does not necessarily represent the views of the sponsoring organizations

Session one focussed on the scope and scale of the challenge of attaining GHG emission reduction targets, understanding the differences between a cap and trade system and a carbon tax, and getting a grasp on what systems are currently in play in North America. Session two focused on technologies that are expected to be available to reduce carbon and the role of carbon pricing in creating conditions for deployment, the do's and don'ts of measuring and mitigating the costs of a carbon policy and examining how carbon pricing will impact consumers. Session three focussed on carbon pricing developments in the United States, both under the new Obama Administration and in Congress, the attributes and implications of an economy wide carbon cap and trade system and how electrical utilities are approaching carbon pricing.

Below are the key findings from the discussions.

Carbon Pricing – Taking it Forward

Ultimately carbon pricing is about getting consumers to accept higher energy costs. In order for this to happen, three key sets of considerations need to underpin the dialogue moving forward:

- ensure the fundamentals are pinned down and the policy is right,
- be cognisant of timing and messaging given the economy, energy prices and electoral cycles, and
- build options and understanding for consumers.

Carbon Pricing Fundamentals

- Price is the point of the exercise – any policy that hides or blunts the price signal to consumers is not carbon pricing.
- Carbon pricing means taxing most sources of emissions and subsidizing the remainder; whether the currency is one of money or carbon credits is of secondary importance.
- Carbon taxation will produce large revenues that can be used to meet other policy objectives (e.g., reduce other tax burdens, fund green initiatives).

- The North American cap and trade program under discussion will be economy wide and founded on auctioning of permits, meaning all emissions including from individual consumers are taxed not just large emitters.
- The carbon price level required to meet the Canadian governments targets for GHG reductions by 2020 will result in price increases in the order of 100% or more over today's levels.
- The key questions for policy makers is managing administrative complexity, transaction costs, gaming by taxed entities and price volatility.

Timing and Message in the real world context

- The current reality says that "tax" is politically untenable and feared by the public whereas cap and trade is not.
- Whatever cap and trade system prevails in the end will be designed in the United States and tailored to meet US interests. Canada, if it chooses to conform, will be a policy taker and may or may not find the system to be to its economic advantage.
- Some recent factors that have clouded carbon pricing include: high and volatile energy prices; weak economic prospects and low economic confidence.
- The current economic environment will influence heavily against a cap and trade system.
- A cap and trade system that is economy wide and auction based will look unmistakably like a tax.
- Ultimately the system which emerges has a high probability of being very complex.
- Should the public grasp the connection between complex financial instruments and the collapse of the credit system, cap and trade may be heavily compromised.

Building options and understanding

- Attempts to hide the fact that cap and trade is tax will only postpone the inevitable truth that energy costs will rise.
- Not being straight forward will force policy makers to alternative avenues such as regulation which is not carbon pricing but carbon constraint.
- We don't know whether a campaign to build understanding based on good policy fundamentals would work or not. It has not been tried to date.
- If consumers view carbon pricing as punitive it will not survive.

- Therefore, of critical importance is building not just understanding but options for both industry and consumers.
- Options for industry include such measures as carbon capture and sequestration while consumer options include integrated community energy systems and more widespread availability of high efficiency equipment.
- Both Policy and regulation have roles in building options.

Next Steps for the regulatory community

- Start building understanding by informing consumers that their energy costs will rise under either system: a cap and trade or carbon tax system.
- Let consumers make informed judgments about how they want to take their carbon price or if they simply disagree with the fundamental premise.
- Engage policy makers in the discussion and seek clarity on timing and mechanism.

The reports out of the three sessions follow. Copies of the Carbon Dialogue Series presentations and paper can be found at: www.cga.ca/DialogueonCarbonPricing.htm

Dialogue on Carbon Pricing: Session 1 Report

October 9 – 10, 2008

Introduction

Carbon Pricing has dominated the discussion on climate change for most of the past year. Canada's energy regulators and its energy utilities are increasingly engaged in the carbon pricing debate and our ability to contribute will be enhanced through the Dialogue on Carbon Pricing.

Underlying the dialogue are the following propositions:

- There is a widespread consensus that anthropogenic climate change is a real issue requiring a concerted global policy response.
- A significant source of anthropogenic GHG emissions is energy use and production.
- The scale of change required to create a meaningful reduction in emissions requires a substantial transformation of the world energy end-use and production.
- Although several policy instruments will need to be deployed, the most basic, because of the nature of greenhouse gas emissions, is to create a mechanism for generating a price for emissions.

As the dialogue proceeds our method will be to build on these propositions, adding additional propositions or agreed upon detail and thereby narrow the focus of the dialogue so as to allow increased depth of enquiry without the distraction of having to go back and reopen discussions that have already taken place.

Scope and Scale of the Challenge – what we know

Drawing on the presentations made by David McLaughlin (NRTEE), Paul Stothart (Mining Association of Canada) & Julie Girvan (Consumers Council of Canada) the following principal points were made:

Background

- The Scale – it's big, very big.
 - Canadian GHG emissions in 2005 were 747 mt; business as usual will result in an increase in emissions to 1100 mt by 2020. The Kyoto target is 563 mt.
 - Energy production and end-use generates 81.5% of GHG emissions in Canada.
 - The current federal government's target is 20% below 1990 levels by 2020 and 60 – 70% below 1990 levels by 2050 –or– 496 mt in 2020 and between 372 and 350 mt by 2050.
 - The utilities sector contributes 44% of the GHG emissions.

- Enabling Conditions
 - Widespread low-carbon technology investment and deployment will be imperative – in the range of \$6 billion annually.
 - A strong, consistent and economy-wide emission pricing system is required – the implied price of carbon in 2020 such that it will have an impact on consumer behavior is estimated at \$100 per tonne.
 - A Canada wide coordinated plan that allows us to benefit from the efficiencies of an integrated approach and allows us to work in concert with the rest of the world is essential.
 - Policy certainty beyond the short term is critical to allow for the necessary investment and integration.
 - Complementary regulations are needed to reduce cost and get emission reductions.

Key Issues for Individual Consumers

- Communication – understanding is critical to acceptance.
- Transparency – policy needs to be coherent and simple.
- Motivation – consumers need incentives to conserve.
- Protection – regulators need to be actively engaged to protect consumers’ especially low-income consumers.

Key Issues for Industrial Consumers

- Cost certainty is a critical factor for industry.
- Added paperwork and administration will add costs.
- Ancillary offset mechanisms / CDM are way too complicated, forces industry to call on financial, legal and accounting firms experts resulting in significant cost increases.
- Unscathed foreign competition – no real undertakings in developing countries with respect to GHG emissions, will this drive investment off-shore, erode our competitiveness, result in import trade barriers?
- Politics trumping good policy – current political plans are leaving the consumer out of the equation, concern about complicated systems being subject to lobbying and corruption.

Carbon Taxes vs. Cap and Trade – the nature of the options

Drawing on the presentations made by Nancy Olewiler (Simon Fraser University), Rick Hyndman (Canadian Association of Petroleum Producers) & Lisa DeMarco (Macleod Dixon LLP) the following principal points were made:

Government can effect change in two principal ways:

- Market-based policies, such as taxation or a cap-and-trade system; and
- Non-market-based policy instruments, such as regulation and performance standards.

Carbon pricing is generally agreed to allow reductions in GHG emissions to be achieved at the lowest possible economic cost. There are two essential models:

Carbon Tax

- Government directly sets a benchmark price for carbon by introducing taxes on the carbon content of fuels (price certainty).
- The market will determine the quantity of those fuels to consume given their price and hence the level of GHG emissions (emissions uncertainty).
- A carbon tax applied across the entire economy would raise significant revenues for government.

Cap-and-Trade System

- Government sets a cap or maximum limit for GHG emissions (emissions certainty).
- The market will determine the price for carbon in some form of emissions trading market (price uncertainty).
- Permits can be allocated or auctioned. Auctioned permits would raise significant revenues for government but most jurisdictions have so far shied away from auction approaches.
- Agents that act as traders of permits (buying and reselling) may be permitted either as a service to businesses affected or as “for profit” businesses in their own right.

Also for consideration are the systems impacts on the environment, economy and society/ political environment.

Environmental Effectiveness

- *Reach.* A large emitters cap-and-trade system can practically apply directly only to entities of a minimum size covering roughly 50% of emissions. Upstream cap-and-trade systems can directly cover all users of energy and 100% of the emissions.
- *Certainty of Outcome.* Either instrument can bring about GHG emissions reductions. Cap-and-trade can target a specific level of emissions-reduction with more certainty than does a tax instrument.

Economic Efficiency

- *Cost Signal.* A carbon tax sends a clear cost signal. Cap-and-trade, on the other hand, leaves the cost (price) to be determined in the emissions trading market.
- *Administrative Efficiency.* Cap-and-trade requires the creation of new administrative apparatus including reporting and verification systems. At the same time, it involves the oversight of only a few large entities.
- *Process Design.* A carbon tax has the advantage that it can be built into the existing excise tax system with relative ease; however, it does imply the oversight of a large number of taxpayers.
- *Operational Flexibility.* In principle it is easier with a carbon tax to signal future intentions of changes in the carbon price and, hence, provide a more certain investment horizon. Cap-and-trade is more rigid because it is more complex with many moving parts such as offset systems, verification protocols, differing caps, etc and, hence, is less amenable to recalibration.
- *Potential for Market Fragmentation.* With more than one emissions trading market, cap-and-trade has the potential to fragment the market. The same is true for a carbon tax, if taxes are not harmonized across jurisdictions.
- *Unintended Consequences.* There is significant potential for gaming, especially from offsets, with cap-and-trade. There is potential for tax loopholes with a carbon tax if it is designed with exemptions.

Social and Political Consequences

- *Low and Fixed Income Consumers.* Cap-and-trade has low perceptible impact on low and fixed income consumers except for the pass-through cost of regulated commodities such as electricity. A carbon tax has a more direct negative impact on low and fixed income consumers, however, these consumers could be shielded from the impact through tax rebates.
- *Regional Impacts.* Under cap-and-trade, provinces with higher concentrations of emitters would be disproportionately affected.
- *Politically Acceptable.* Cap-and-trade is politically less sensitive as it implicates a small number of big business entities (although adjustment implications from seriously affected industries will be regionally concentrated). Imposing a new tax on Canadian consumers is more difficult to sell politically.

North American Carbon Pricing Systems

Drawing on the presentations made by Joel Bluestein (ICF International), Rick Morgan (DC Public Service Commission) & John Dillon (Canadian Council of Chief Executives) the following principal points were made:

U.S. Carbon Pricing Systems

- In the U.S. GHG reductions are being mandated and are becoming more widespread through both state and a proposed federal Cap & Trade system.
- The design of the proposed federal system is similar in principle to the Western Climate Initiative (WCI).
- The intent is for the federal system to become the standard and preempt state programs that don't meet the minimum criteria.
- Aggressive short-term GHG reduction goals (1990 levels in 2020) are mostly going to come from the power sector and be addressed first through a phased in approach.
- Large emitters will be regulated downstream and the small emitters and transport sectors will be regulated midstream.
- Timing of reductions and the use of offsets and technology availability will be critical to a non-disruptive, cost-effective implementation.

Canada's Position

- BC, MB, ON & QC are signed on as participants in WCI, SK signed as an observer. As small partners in the US system, participants will have to accept the system details as defined by the major players.
- Other provinces have signed on to various US initiatives such as the Regional Greenhouse Gas Initiative (RGGI) and the Midwest Climate Initiative (MCI).
- Should Canada integrate a national system there will be added complication with the regional and federal U.S. systems.
- An additional element for concern should Canada not mirror or adopt the U.S. federal system, is the potential for difference to become environmental non-tariff trade barriers to trade.

Fundamentals

- The pace at which all this happens is not a concern but it is prudent for us to understand what systems are in development and how this will impact Canada.
- If, as most observers seem to believe, Canada will have to follow what the U.S. is doing then WCI is an easily understandable archetype that we should use as a basis of the next rounds of the dialogue.

Moving to Round 2 - A Working Model

Based on the discussion to this point and to provide a baseline for further discussion; we proposed to narrow the scope to the WCI model. The WCI model broadly mirrors the U.S. federal model and most participants seem to be of the view this is the most likely model that Canada will follow. Our working model includes:

1. A comprehensive (whole economy) cap and trade system; a hybrid upstream/downstream system which regulates:
 - Large source (industrial and power facilities) emissions including process emissions directly.
 - Small source (transport, residential/commercial/institutional) emissions indirectly.
2. Initially deals only with large emitters; later compliance period introduces small emitters – but should assume that small emitters are in early.
3. Aims to reduce emissions consistent with an objective of minus 60-70% by 2050. NRTEE Carbon price estimates to be used as basis for estimating cost impacts.

Maximum realistic price path with international permit purchases & complimentary regulation package:

2011 – 2015 = \$18

2016 – 2020 = \$100

2021 – 2025 = \$200

2026 – 2050 = \$200

4. Point of regulation:
 - Large emitters at point of emission.
 - Small emitters at gas distribution utilities, wholesale refined product distributors.
 - Electricity – under WCI either generator (part of large emitters) or first jurisdictional deliver for out of coverage sources. This distinction becomes moot with the assumption that we are working within a North American wide system.
5. Distribution of allowances: initially through a largely gratis distribution process, transitioning to an auction system.
6. Assume that there is an offsets system but with strong emphasis on maintaining environmental integrity.

Key Issues

1. In Canada is this a federal system or 13 provincial/territorial systems? Does the federal government have the jurisdiction? If not federal then how coordinated and aligned?
2. How much alignment with the US is “enough” in order to facilitate market development and be proof against trade disputes?
3. What is the effect on prices of different energy commodities through various phases 2012, 2015 and 2020? What impact will these prices have on the economics of various technologies and on energy consumer behaviour?
4. Alternate approaches to allocation – who receives allocations, on what basis, what role for credit for early action, how is full auction phased in?
5. Revenues from auction: the system will eventually produce very large government revenues– depending on timing, scope of auction at any given time, what are the options for use of proceeds?
6. Facilitating the transition – what is the continuing role of DSM programs and other assistance to facilitate change, does the scope of DSM systems become broader (e.g., on-site renewable technologies)?
7. Understanding the impact on low income consumers and how to mitigate them?
8. Understanding the impact on trade exposed industries and how to mitigate them?
9. Regional wealth transfers: the potential scale, should it be mitigated, how can it be mitigated?
10. What are the available compliance options: physical reductions, domestic offsets, international credits? How does economy wide coverage limit the availability of offsets? In an economy wide system with stringent reduction requirements (such as the current federal proposals) can the market balance?
11. Managing price volatility: What does the potential volatility look like to energy consumers? How do banking, borrowing, price floors and ceilings work?
12. What are the implications for utilities as the point of regulation?
13. Informing and consulting with energy consumers – how & when?

Dialogue on Carbon Pricing: Session 2 Report

January 13 – 14, 2009

Introduction

In the first Carbon Dialogue session we focused on understanding the scope and scale of the challenge of attaining the government's goal of reducing GHG emissions to 60 – 70% below 1990 levels by 2020, understanding the differences between a cap and trade system and a carbon tax, and getting a grasp on what systems are currently in play in North America. Following the understanding that was gained in session one, session two focused on some of the technologies that are or are expected to be available and the role of carbon pricing in creating conditions for deployment, the do's and don'ts of measuring and mitigating the costs of a carbon policy and starting to understand how carbon pricing will impact the consumer.

Where we are today and what technology can solutions can we expect in the future?

Technology development is constantly evolving in all areas of energy production and use. In this session we looked at three sectors that together account for well over 50% of the GHG emissions and broadly represent the types of challenges society is facing to address our dependence on carbon, to break the link between emissions and energy or to reduce the energy intensity of the economy. The three sectors are power generation – carbon capture and storage; transportation – light duty vehicle technology; and communities and buildings. Following are some of the salient points from the presentations and discussion.

Carbon Capture & Storage (CCS)

- CCS technology is still in a development phase and will not be available as a replacement technology for current coal plants until 2020.
- Retrofit pilot projects are underway. In one example and the proponents anticipate being able to remove 1 Mt/yr of emissions in a 6 Mt/yr capacity plant by 2012.
- 90% of emissions in 2020 will be from sites in operation today, therefore pilot projects and retrofits are critical to meeting Canada's short term emissions reductions goal.
- Carbon Pricing will assist in technology development.
- Keys to CCS success:
 - Harmonize regulations between jurisdictions where possible.
 - Make compliance tools as broadly flexible and equivalent as possible – offsets, compliance funds, technology investment credits, trading. It's too early to choose preferences.
 - Ensure that industry will always have a way to comply with emission goals at a reasonable cost.
 - Balance reduction goals with cost and competitiveness considerations. Success here will give the best results for both emissions goals and long-term technology solutions.
 - Encourage energy diversity as healthy and leading to energy security, competitive advantages and energy price stability.

Transportation

- Auto manufacturers are listening to the demand of the consumer and are not being rewarded for improving vehicle technology to increase efficiency and reduce emissions.
- A price on carbon will provide a means to fund investment in vehicle research and development but from a consumer's perspective a carbon price by itself is not an efficient means to motivate technology improvements for more fuel efficient, lower GHG- emitting vehicles or correct for perceived market failure.
- Regulation is needed to drive change within the automobile manufacturing sector and needs to work in conjunction with price signals to drive consumer behavior change.

Green buildings and communities

- 30 - 35% of GHG's released in Canada are associated directly and indirectly with the operation of buildings.
- Knowhow and technology to reduce emissions by 50% or better is available today.
- Integrated energy systems and sustainable communities are key to achieving significant changes in energy performance.
- Current regulations in some building codes are essentially irrelevant with the current technology available and room for improvement within a building.
- This is not primarily a technology issue – energy system design, management and behaviour of building occupants use play a huge role. System integration is essential
- Carbon pricing would tip the scale to increase development of green buildings and communities, and enable large building owners to become players in a carbon trading system.

Measuring (and mitigating) the cost of Carbon Policy

Meaningful measurement of the cost of carbon policy remains elusive and it is not well revealed by analysis to date. There are many reasons for this, not least of which is the fact that the level of detail of policy discussions and proposals is often at odds with the level of information required to conduct meaningful analysis. However, the transformation entailed in moving to a very low carbon economy is a source of economic costs such as: economic distortions generated by the unintended consequences of policy, transition costs, administrative costs, costs of rent seeking behavior and potential to give license to trade protectionist measures. In addition, the transition will entail distributive impacts across industries, income groups and regions. Taken together, these economic and distributive effects are potentially very high.

In adopting policies that aim at a fundamental transformation of the economy, there is a serious risk of being unnecessarily disruptive in the near-term and undermining productivity driven by new investment in the medium and even long-term. To avoid a significant loss in income, policies should accommodate both carbon emission reduction and productivity enhancing investment in the economy, mindful of the fact that some of the most productive parts of the economy are highly carbon intensive.

These are not arguments for avoiding robust carbon policy but rather arguments for policy design that clearly identifies and minimizes costs and distributive impacts.

The panel and the subsequent discussion focused mainly on the do's and don'ts of carbon policy in this context.

The Do's and Don'ts

Do's

- Be more forthcoming about the context of what has to happen and who (consumers and taxpayers) will ultimately have to pay for the change.
- The devil is in the details; it is essential to understand the specific impacts through the economy of specific policy designs.
- Bring more precision and clarity to carbon policies as it is difficult if not impossible to adequately assess the effects of policies that lack clarity. Many costs and distributive impacts arise from the details of policy and without the details; the analysis of impacts is often trivial.
- Continue to make analytical work more sophisticated and complete. Current modeling misses critical aspects of carbon policy such as:
 - trade effects which can only be understood by incorporating multi-country analysis,
 - the effects of inefficient policy design (since inefficient design is more likely than not),
 - knock on effects in parts of the economy that are not well captured in carbon modeling,
 - detailed institutional modeling in key sectors, such as electricity (e.g. impacts of policy on merit-order curves, investment in transmission and trade).
- Start pricing carbon as soon as possible. Pricing of carbon should incorporate both the current pricing signal as well as credible signals of the price escalation over time.
- It is likely necessary to begin with modest price levels in order to avoid too significant economic shocks.
- Escalate the price over time consistent with the actions of other countries and calibrated to the observed effects on carbon emissions.
- It is vital that the carbon price should be as neutral as possible – i.e., avoid a priori assumptions about which technologies will be most cost effective.
- Carbon prices in Canada should be in step with those in other countries who are large emitters and economic competitors so as to avoid disadvantaging Canadian industry and potentially creating carbon leakage. Ensure that costs are passed through to energy consumers and that they are visible to energy consumers.
- Keep the system as administratively simple as possible.

Don'ts

- Avoid exemptions from the price incentive to reduce carbon emissions – price should be consistently applied across all sources to minimize economic distortions and rent-seeking behavior.
- Don't expect carbon pricing to overcome the underlying price volatility in energy markets. Carbon pricing is difficult in itself without giving it the added burden of trying to smooth underlying commodity price volatility.
- Work to ensure that measures designed to facilitate adjustment or mitigate other distributive impacts do not blunt the intended price signal or add to administrative burdens or avenues for rent seeking.
- Don't mistake high energy commodity costs for carbon costs; carbon costs represent the externality value of carbon which is an economic cost to society which should be priced in its own right if the objective is to achieve an economically efficient outcome.
- Minimize regional wealth transfers; the adjustment costs for individual industries and consumers are already enough to accommodate without adding regional effects.
- Don't add carbon prices on to power without moving to correct the underlying distortions in electricity prices; need to move gradually to full cost pricing of all energy and marginal cost pricing, to the extent possible.
- Don't expect prices to do the whole job; there are non-price market failures such as information acquisition and transaction costs and agent/principal effects that policy needs to address.

Measuring the cost of carbon policy – a consumer look

Ultimately, those that consume energy will be and should be the ones that pay for the impact their choices make on our environment. In order for consumer behavior to migrate to an approach that demands less energy and reduces the carbon footprint of the energy that is used the consumer needs to see the real cost. However, in order for consumers to accept carbon pricing and make smart choices they need better information and better understanding of what carbon pricing entails and what their options are:

- No matter what system is implemented in Canada – Carbon tax or Cap & Trade – Canadian consumers will be affected and will be the ultimate payer.
- Policy makers and regulators are encouraged to ensure transparency in whichever system is used and to strive for simplicity. Complexity of the system used to regulate carbon will be directly proportional to the cost in the long term.
- Communication with the general public will be key in attaining public acceptance as will be visible change.

- Low-income consumers are going to be the hardest hit with the implementation of carbon pricing and there will need to be provisions in place to assist them.
- Consumers will inherently have a limited ability to act on the issue but should be offered options to choose green. These options should show the public interest in GHG reductions and also sends a signal to producers to increase efficiency and reduce emissions.
- The price consumers pay for commodities does have an impact on behavior but it doesn't necessarily have the impacts we anticipate as was suggested in the purchasing behavior of consumers when faced with increased fuel prices.
- Fairness is critical – any carbon pricing scheme should be applied fairly to all consumers. It shouldn't be a rate base solution.
- Incentives are generally better understood and better received than taxes.

The so what for regulation

In the last session a panel of regulators offered some preliminary ideas on the key implications of all of this for the regulatory system. The discussion focused on what needs to be done in the third session to explore this question further.

What we know is coming at us:

- The US will be implementing a cap & trade system or something similar. It is a national issue and will not be influenced by Canadian intervention. Canada should be an observer of the US process but with the ultimate goal of generating a made in Canada solution.
- Federal and provincial jurisdictions all working on this – we need to start sorting out who does what.
- The short term environment will be very difficult for financing green alternatives; we need solutions that will work both in the short term and over a longer horizon.
- The public has limited understanding of what carbon pricing means; building understanding will be critical.
- Need both macro (carbon pricing) and micro solutions such as DSM; need to understand what sorts of new options will be funded out of rates (e.g., through system benefits charges).
- Integrated urban energy systems will be part of the solution; may raise questions for how regulation deals with such systems.

Implications for regulators:

- Regulators need to take an active role offering perspectives to policy makers respecting things like impacts on consumers, need to fund new options, need to improve and adjust system over time.
- Regulator role in managing the carbon system not clear, e.g., regulators pass through prudently incurred costs but who will verify credits needed to comply with caps?
- Carbon management needs to be incorporated as part of the broader set of considerations that regulators work with.
- Regulators have a big role in informing and educating consumers.
- Regulation has to account for impacts on consumers – especially low income – but have to do so without blunting the carbon price signal; important to discourage policy makers from intervening to prevent impacts on consumers.

Issues to consider for Session 3 program:

- Have a panel of people who can speak to lessons learned from systems that have already been implemented (Europe, RGGI).
- It would be useful to frame a “model” system and spend time exploring the full range of implications from implementing such a system (this would need some preparatory work to characterize the model system and do a first order framing of implications).

Dialogue on Carbon Pricing: Session 3 Report

April 7 – 8, 2009

Introduction

Sessions one and two of the Dialogue on Carbon Pricing focused on: understanding the scope of the challenge; the differences, similarities and relative merits of cap & trade and carbon tax; what systems are currently in play in North America; what technologies are available; and the do's and don'ts of measuring and mitigating the costs of carbon policy. In session three we revisit what has happened in the US under the new administration and Congress, turned our attention to a detailed analysis of the ins and outs of a plausible North American carbon pricing model and examined the implications of a carbon price on electricity generation and distribution.

Carbon Pricing under the new Administration in Washington

In a nutshell the Obama administration and the new Congress have expedited the process started under the Bush administration in the US towards implementing a carbon price. The economic downturn threatened to stall further Federal action, but that threat has not materialized yet.

Since October 2008, the US has garnered support for national cap and trade legislation, cabinet appointees have been strongly supportive of carbon pricing and progress is being made on GHG reporting rules. Importantly, the 2010 federal budget proposal assumes the existence of a GHG cap and trade program in 2012 with significant revenues from auctioning. Targets are set at 14 per cent below 2005 levels by 2020, and 83 percent below 2005 levels by 2050, with all allowances auctioned (approximately 80% of proceeds going directly to reduce taxes and the remainder to support clean energy).

There are still many unanswered questions on how this will roll out and when, but there is significant forward momentum and according to the speakers all indications are that the US will have a system in place in the short-term. Some of the questions still to be answered include:

- Initial allocation or direct to auction?
- Allowance revenues widely distributed or directed to taxpayers?
- Will Industrial fugitives be regulated?
- What will be the limitations on offsets?
- Will there be credit for early adoption and if so how much?

On March 31, 2009, Rep. Henry Waxman (D-CA), Chairman of the House of Committee on Energy and Commerce, and Rep. Edward Markey (D-MA), Chairman of the Subcommittee on Energy and Environment, unveiled a long-anticipated discussion draft of a comprehensive climate change and clean energy bill. The draft, seen as an important stepping stone, borrows heavily from previous bills and recommendation of the US Climate Action Partnership and includes similar provisions to that of the Obama Plan. Ultimately, this Bill could set the stage for a North American cap and trade mechanism.

Where do Canada and the rest of the world fit in the US thinking?

The U.S. will direct the carbon pricing ship. As a first step, they will likely focus on “regaining carbon leadership” which will lend support to those pushing for early approval of Federal legislation. They will then turn their attention to international linkages. It is therefore likely that the US will focus on its own structure and ask the international community to follow along or go on a parallel path.

With respect to timing, Mr. Obama and Democratic congressional leaders are heavily committed to having the climate-change legislation being passed before an international meeting in Copenhagen in December 2009 that aims to reach a successor to the Kyoto Protocol. Coordination with Canada is increasingly likely but probably on U.S. terms. It is therefore important that Canada continues to follow developments south of the border to understand the implications of the US models for Canada and weigh in with the US administration where possible. Canada will soon need to decide if it wants to harmonize with the US carbon pricing system or simply align its own system to reflect similar level of effort to achieve carbon reductions.

Unpacking WCI – analysis of the costs and benefits.

The approach taken for this session was to discuss the paper “*Deconstructing Carbon Pricing*” which outlined the key attributes of a carbon pricing model. The model was based on the WCI but with two differences including application North America wide and at a level of stringency consistent with current Canadian government targets (20% below 2006 levels by 2020).

The discussion generated some notable observations including:

- There is no clear consensus around what would be equivalent carbon reducing effort for Canada vis à vis the US or even how it would be measured.
- Although the discussion centers on carbon pricing, the assumption underlying much of the discussion is that it is necessary to regulate in order to change behavior.
- If the objective is in fact pricing of carbon, then that is tantamount to taxing carbon no matter what it is called.
- The current draft EPA reporting guidelines differ from WCI & Canadian reporting guidelines; ensuring apples to apples trading, determining who will govern, validation and verification, and compliance as some key reporting issues that need to be addressed.
- United States carbon cap and trade proposals such as WCI or current bills in Congress carry significant potential for trade barriers/tariffs against Canadian products deemed more ‘carbonated’ by the US. Compounding this issue is Canada’s ability to mitigate or avoid such actions is limited as exemplified by previous border disputes (e.g., softwood lumber).
- The issue of leakage can apply both within North America (e.g., from Canada to the US where some argue the cost curve for reductions is lower) and leakage outside North America (to countries where carbon cost curves are lower or where carbon reduction burdens are much less).

Demonstrated by examining the attributes of the WCI model, the design of carbon pricing regimes is a complex subject that is made more difficult by multiple meanings of terms and absence of agreement on concepts. The WCI model may be the most advanced model conceptually to date but there are many unanswered questions and gaps in the model that need serious consideration and debate. Complexity and unknowns aside, it is critical that carbon pricing fundamentals don't get lost in the details. It is about **creating incentives** - taxing emissions to send a price signal to individual decision makers to reduce their costs by finding lower emission ways of doing things; or **subsidizing** reductions of other sources of emissions, which reduces the proceeds of the tax or what is available for recycling; and, **recycling** – remaining tax revenue to meet other policy objectives. Keeping in mind that this issue deals with the whole energy cycle, lessons can be learned from looking at the sectors individually, and electricity is the sector most affected.

Carbon Pricing and Electrical Utilities

Greenhouse gas emissions from the generation of electricity in Canada are significant. As a result, a price on carbon will greatly impact the electricity sector, including both the generation and distribution segments. From our electricity panel, the following key points were made.

Jurisdictions across the country are acutely aware of the carbon pricing reality and are working with governments to reduce emission levels. In Ontario, OPG has been working for well over a decade to help establish the basis for emissions trading. It pioneered trading CO₂ by setting and meeting its own reduction target, working out the parameters for measurement and the ground rules for trading. In Nova Scotia, where the power generation sector contributes 46% of the province's GHG emissions, the province introduced the Climate Change Action Plan¹ which sets the GHG reduction objectives for the province to 2050. The primary issue of note in the Action Plan is to reduce emissions from power generation. To accomplish this, the province has set an increasingly stringent cap on GHG emissions from Nova Scotia Power Incorporated (NSPI). In addition, the province has created the Renewable Fuel Standard which required NSPI to generate an additional 10% of its electricity, by 2013, from renewable sources (currently, 88% of Nova Scotia's power is produced from fossil fuels of which 75% is coal). NSPI noted that it is spending to be in compliance and this is different from spending to invest in transformative change for the longer-term.

Electricity distributors also have a role in reducing GHG's from the electricity sector. Hydro One is the provincial electricity transmission company and also distributes in rural areas of the province. Hydro One identified three areas where its actions will continue to impact on measured reductions:

1. **Connect new renewable energy sources:** Hydro One is connecting new renewable projects to the grid across the province. Over 1,500 applications for projects were submitted during the request for proposals of which 900 are being considered. The recently release Ontario's Green Energy Act is providing support in this effort.
2. **Reducing Own Consumption:** Hydro One is working to reduce emissions from their own operations including reduction of line losses (the largest component) and efficiency of service trucks and buildings.
3. **Reducing Customer Consumption:** Hydro One has various initiatives such as in-house consumption meters that provide real time information and signals to consumers.

¹ <http://climatechange.gov.ns.ca/ActionPlan>

However, no two utilities are the same and each face different challenges based on age of plant and equipment, fuel generation mix, etc. Therefore, the impact of a price on carbon on electric utilities in Ontario will be much different than that of Nova Scotia. This reality reaffirms the regional differences among jurisdictions and the varying levels of impact that a cap and trade program may have.

The Big Picture

Following the electricity sector look into the implications of carbon pricing, a panel of experts sought to highlight the key barriers and considerations in the implementation of carbon pricing in Canada.

1. Canada emits more GHG's per person than almost any other country. A cold climate, resource intensive industries, long distances and a growing population base are some of the influencing factors.
2. More information for consumers is good and will only be helpful in the cause.
3. Systems of green credits are emerging for individuals, SME's and corporations.
4. The devil in attaining carbon pricing is in the details and the details are three fold:
 - a. Politics – without a fundamental change in the mind set of the constituent base, politically it is extremely difficult to advocate for carbon pricing due to the price burden on the consumer. Prices will rise in a carbon constrained world-there is no hiding it.
 - b. Regional disparity – the heavy coal user states and provinces are going to be harder hit than those that utilize lower GHG emitting sources of energy. This is a new way of determining 'have and have not' provinces.
 - c. Wealth transfer – a carbon pricing system is much more effective on a global scale but the implications of wealth transfer severely limit the possibility.
5. There are two ways to get to a solution – transform the power sector first by massive investment in generation, transmission and distribution or look at hydrocarbon energy with a view to curtailing use in certain applications – residential, commercial & industrial. Both require tough decisions.
6. Pricing is necessary but will not be sufficient to meet the reductions that are targeted; additional regulation will be needed to ensure the economy responds to the objective.

Summary

The three sessions on carbon pricing revealed a number of over-arching themes.

1. This is a huge problem – the goals are ambitious, the current gap is enormous and without action, emissions will continue to rise.
2. Currently there are fractured and confusing approaches to carbon pricing.
3. The cost or charge required to meet our goals is significant and the consumer of transportation power and home fuel will bear the brunt of the cost. Low income Canadian's will be significantly impacted by carbon pricing and a mechanism to assist them will be necessary.
4. The way we price carbon, be it through cap and trade or a tax, requires the price signal to reach the consumer and a signal is critical to success.
5. Pricing carbon will fundamentally change the way we produce, transport, deliver and use energy.
6. There is an emerging suite of tools and approaches to mitigating carbon and all need to be employed including carbon capture and sequestration (CCS), but there are many uncertainties with CCS that will need to be addressed before it is a viable solution.
7. Harmonizing or aligning Canada's pricing method to that of the US carries a number of risks as our economies are linked but are not the same.
8. Canadian policy makers will need to face some daunting obstacles in getting the pricing mechanism right in order to address regional differences , avoid wealth transfers and maintain public support.
9. There is no role for regulators in the determination of the mechanism for pricing carbon in the economy; that is the role of the policy makers. The role of the regulator is to implement, where required, whatever tools are put in place to deliver a low carbon economy.