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Carbon pricing in North America

Opportunities in North America’s emerging carbon markets

May 26, 2016

Agenda

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2 Cross-border opportunities

3 Canadian carbon pricing: Risk & Opportunity

4 The impact of Canadian carbon pricing on American carbon markets

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Topic: Lessons learned from the European carbon market

Canadian carbon pricing regimes: Risk & Opportunity

Alex MacWilliam

Carbon Pricing in Canada – The Times… They Are a Changin’

- Much has happened since our last seminar in January
- Federal budget commits $2.9B over 5 years to address climate change and air pollution, issues including $2B to establish Low Carbon Economy Fund
- Budget also proposes special tax rules to clarify tax treatment of emissions allowances
- Provincial legislation introduced or pending
- New era of federal-provincial cooperation?
- Much still to come

Canadian carbon pricing patchwork

Province	% of Canada's total emissions	Regulation
British Columbia	9	Carbon tax (launched 2008)
Alberta	37	Intensity-based emissions reduction scheme (launched 2007) – new carbon levy and energy efficiency legislation introduced May 24, 2016
Saskatchewan	10	None implemented
Manitoba	3	Cap and trade (no launch date announced)
Ontario	23	Cap and trade (planned launch 2017)
Québec	11	Cap and trade (launched 2013)
Maritimes	6	None implemented
Territories	0.3	None implemented

How Ya Gonna Keep 'Em Down on the Farm After They've Seen Paree?

- Federal government needs to show action post-COP 21
- Vancouver Declaration – March 3
- Established 4 First Minister Working Groups
- Groups to come forward with options – not recommendations (end of Aug.)

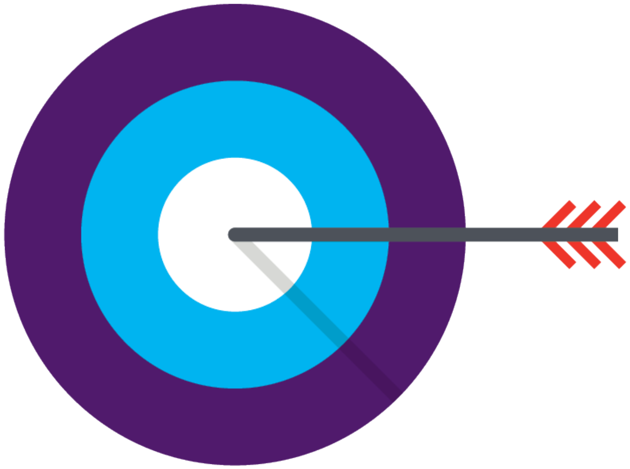
- Questions
  - How will the different Canadian systems operate and link?
  - How will "equivalency" be determined?
  - How will prices be reconciled if above/below WCI?
  - How will border and competitiveness issues (e.g. carbon leakage) be handled?
  - Will feds look to international trading to help meet reduction targets or will they focus only on "made in Canada"?
  - What if no consensus among First Ministers?

Ontario – Cap and Trade Regime

Legislation/Instrument	Description	Status
Climate Change Mitigation and Low-Carbon Economy Act	Foundation for Ontario's cap and trade regime	Passed on May 18, 2016
The Cap and Trade Program (O. Reg. 144/16)	Mechanics of the cap and trade regime	Released May 19, 2016. Will take effect July 1, 2016
Quantification, Reporting and Verification of GHG Emissions (O. Reg. 143/16)	Replaces the GHG Reporting Regulations (O. Reg. 452/09)	Released May 19, 2016. Will take effect January 1, 2017
Offset regulations	Unknown	Draft regulation not yet released
Offset protocols	Intention to align with Québec	RFP for protocol design - release date unknown

Climate Change Mitigation & The Low-Carbon Economy Act

- Establishes targets for GHG emission reduction
- Requires creation of a Climate Change Action Plan
- Requires certain persons to report GHG emissions
- Establishes a framework for cap and trade:
  - Establishes categories of participants
  - Authorizes creation and distribution of allowances
  - Authorizes creation and issuance of offset credits
  - Authorizes creation market rules and auction protocols
  - Authorizes linkage
  - Establishes the GHG Reduction Account to receive proceeds generated by cap and trade
  - Establishes enforcement mechanisms, including AMP



Climate Change Action Plan

- Debated in cabinet on May 11, leaked to the Globe and Mail
- New programs to be paid from cap and trade revenue (GHG Reduction Account), including:
  - Retrofits
  - New building code rules
  - Electric vehicle incentives
  - Lower carbon fuel standard
  - Regional rail
  - Cycling infrastructure
  - Clean tech

ENVIRONMENT

Ontario to spend $7-billion on sweeping climate change plan

ADRIAN MORROW AND GREG KEENAN
TORONTO — The Globe and Mail
Published Monday, May 16, 2016 5:00AM EDT
Last updated Monday, May 16, 2016 4:30PM EDT

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Alberta – Four Strong Winds (and a carbon levy)

- Bill 20 – Climate Leadership Implementation Act introduced May 24 will create two new statutes:
  - *Climate Leadership Act*
    - Imposes carbon levy of $20/T effective Jan 1 2017 on consumers of fuel to be effected through series of payment and remittance obligations throughout the fuel supply chains
    - 4.5 cents/litre on gasoline
    - Directors liable for corporation's failure to remit levy unless exercised "due diligence"
    - No emissions trading scheme introduced
    - Specified gas emissions reduction legislation left intact
  - *Energy Efficiency Alberta Act*
    - Establishes new Crown corporation – Energy Efficiency Alberta
    - Mandate is to develop and deliver provincial-scale energy efficiency and small scale renewable programs and services

Québec – Cap & Trade

- 2030 Energy Policy Strategy announced in April
  - Targets for 2030:
    - Enhance energy efficiency by 15%
    - Reduce petroleum product consumption by 40%
    - Eliminate use of thermal coal
    - Increase renewable energy share by 25%
    - Increase bioenergy production by 50%

- Reforms to Green Fund announced
    - Response to problems with respect to transparency, management of funds and reporting

British Columbia

- Bill 19 passed April 26 and received Royal Assent May 19
  - Amends *Greenhouse Gas Industrial Reporting and Control Act*
  - Opens Carbon Registry to non-regulated operations including companies and municipalities to allow them to participate in carbon market to buy, transfer and retire offsets and help fulfil partner or voluntary commitments
- Consultation on Climate Leadership Plan ongoing
- Climate Leadership Team recommending that BC
  - establish a new, innovative fiscal policy to help mitigate impacts on emissions-intensive, trade-exposed industries
  - Increasing and expanded carbon tax
  - Complementary policies that either enhance effect of carbon pricing regime and/or target emissions not effectively reached through carbon pricing

The impact of Canadian carbon pricing on American carbon markets

Jeff Fort

US GHG Emission Reduction Initiatives

Initiative	Coverage	Comments
California Global Warming Solutions Act	California power, Oil & Gas and selected Industrial sectors (cap and trade)	First multi-sector GHG mitigation requirement in US; Basis for Western Climate Initiative and now Québec and Ontario
Regional Greenhouse Gas Initiative (RGGI)	• Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. • Power sector	First mandatory market-based program in the US
Clean Power Plan	• Every state to develop a "SIP" • Power plants only • National	Supreme Court stayed implementation in February 2016. Fourteen states are proceeding. EPA's "FIP" is market based.

The Forecast “South of the Border” - RGGI

The New York Times

The Opinion Pages | EDITORIAL

Proof That a Price on Carbon Works

By THE EDITORIAL BOARD JAN. 19, 2016

Bloomberg Markets Tech Pursuits Politics Opinion

Carbon-Trading Program Generates $1.3 Billion in U.S. Northeast

by Alex Nussbaum

July 13, 2015 – 10:00 PM EDT

- Initial oversupply of credits and low price
- Many states considering joining to meet Clean Power Plan
- Oversupply corrected; potential shortage if nuclear plants not renewed
- NYSERDA developing new incentive for renewables

The Forecast – Clean Power Plan

- EPA adopted regulation requiring every state to adopt a State Implementation Plan for the reduction of carbon dioxide emissions from the power sector (and only the power sector). Expected 26-28% reductions from 2005 baseline through a combination of efficiency improvements, credits for renewables and nuclear power, and dispatch rules:
  - Challenged in federal district and appellate courts. While pending in D.C. Circuit Court, Supreme Court issued a stay of enforcement, 5-4, on February 13, 2016.
  - Allows states to take credit for renewables based on portfolio standards and tax credits, for nuclear power, coal plant upgrades and increased natural gas dispatch.
- Administration asserts that the tax credit extenders for renewable power may result in reaching emission reductions. RPS requirements in some of 30 existing states may be increased

The forecast - California

- Will forward price curve continue?
- California allowance prices depressed ahead of oral argument on challenge to AB32 allowance auction system; what might the court do and what would that do to prices? (see aftermath of CAIR ruling)
- Ontario demand expected to drive prices up - will reserve price protection be needed?
- Will other energy policies dampen demand for allowances, and hence for offsets? (e.g. increased solar RPS)
- Will sector based offsets (e.g. REDD+) also dampen offset prices, due to excess supply?

The Forecast – North American Carbon Market

- Porous borders will continue
- Fractured prices from barriers to trade across jurisdictions
  - Mechanisms for international transfer may be a model for Paris Climate Agreement
- Principal drivers appear to be:
  - Linkages between California, and Québec and Ontario (and others)
  - Coordination among Provinces' plans and requirements
  - State Implementation Plans under Clean Power Plan
    - Reliance on Canadian hydropower
    - Use of trading of credits between states (and provinces?)
- Offsets a key tool for price mitigation

Carbon Offset Credits

- Shared offset protocols?
- Ontario offset regulations not yet released – intention to harmonize with Québec
- California recognizes offset projects in US, not just in California
- Offsets used for "markets"; can also be used for "fee-based" or "tax-based" systems

Offset Protocol	Jurisdiction(s)
Covered manure storage facilities – methane destruction	Québec; California
Landfill sites – methane destruction	Québec
Ozone depleting substances (ODS) destruction	Québec; California
Coal mine – methane destruction	California; Québec (public consultation)
Forestation and reforestation	California (US Forest Projects; Urban Forest Projects) Québec (under development)
Rice cultivation	California

Lessons learned from the European carbon market

Elana Hahn
Rosali Pretorius

Why Cap & Trade?

Cap & Trade

- Government imposed, limits overall level of carbon pollution
- Cap is reduced year after year
- Least costly manner of emissions reductions
- Allows for better predictor of environmental impact
- Provides economic incentives
- Addresses environmental legislation to mitigate climate change globally
- Achieved by the European Union Emissions Trading System (EU ETS)

Carbon Tax & Regulation

- Easy to implement but susceptible to loopholes
- Affords little certainty regarding emission reduction amounts

European Union Emission Trading System (EU ETS)

- The world's first major and largest carbon market overseeing 31 countries – Operations commenced January 1, 2005
- Each member state sets national cap on CO_2 emissions from participant sectors
- Provides Allowances ("EUAs") for member states to emit CO_2
- Prices carbon → giving financial value to <u>each tonne</u> of emissions saved
- EUAs allocated by member states to individual installations
- By 30 April each year, operators surrender EUAs equivalent to actual emissions
- Compliance achieved through: emissions reductions, trading, and credits
- 3 Phases:
  - Phase I (2005-2007)
  - Phase II (2008-2012)
  - Phase III (2013-2020)

Lessons Learned in Europe

Praise of the EU ETS

- Sufficiently high carbon price promotes investment in clean, low-carbon technologies
- Allows credits generated by certain emission-saving projects around the world to cover proportions of domestic emissions
- Channels substantial investment in clean technologies to promote low-carbon development in developing countries and economies in transition
- Corporate responses to the EU ETS:
  - “Leadership and recognition in the future of low-carbon has yielded declining costs and innovation”
  - “Shifting focus from a compliance approach to emphasis on creativity and productivity has allowed “low-hanging fruit opportunities”
  - “The EU ETS supports our company investment policies resulting in enhanced performance”
  - “…[the EU ETS] reinforces our company’s good work performed, translating to success with clients”
  - “…creation of impetus to focus on CO_2 and has accelerated change within the company and the environment”

Lessons Learned in Europe

EU ETS Critique

- Carbon leakage
- External impacts on price
- Prolonged length of phases
- Significant infrastructure costs for compliance
- Low carbon price may hinder the drive for technical innovation
- Member States' National Allocation Plans "race to the bottom"
- Issues of fairness relating to allocation rules, competition issues, and "windfall" profits
- Growing surplus of allowances due to greater than anticipated reduction in emissions since 2008 and the economic crisis
- Security of registries

Lessons Learned in Europe

Responses to the Critique

- Postponed auctioning of some Allowances
- Integrated energy and climate policy
- Introduction of long-term EU carbon targets
- Limits on use of offset credits
- Extension to new sectors/gases
- New rules on "carbon leakage"
- Paris Agreement
- Harmonized carbon pricing systems
- Emissions Mitigation Mechanism
- Financial regulations of auctions

Where Things Are Going in Europe

Building an International Carbon Market

- EU ETS – a building block for an international network of emission trading systems
- Bottom-up linking of compatible domestic cap-and-trade systems
- National or sub-national systems operating in:
  - Australia
  - Japan
  - New Zealand
  - Switzerland
  - United States
  - *Planned in Canada, China and South Korea*
- Benefits include:
  - Cutting emissions
  - Increasing market liquidity
  - Stabilizing the carbon price
  - Levelling the international playing field
  - Supporting global cooperation on climate change
- Agreement to establish a fully linked emissions trading scheme by mid-2018 between the EU and Australia

Thank you

Questions & Answers

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