



Managing Carbon:

Why is It Important? Understanding the Risks & Opportunities





The Delphi Group's Approach

- **Canada's Premier Strategic Environmental Consulting Firm**
 - Climate Change and Clean Air
 - Corporate Sustainability
- **Small Business Award (Ottawa 2003)**
- **National Employer of the Year (2006)**
- **Established Assets**
 - EXCEL Partnership
 - EECO Conference
 - Strong Technical Expertise (GHG)





Our Clients

- Clients include:
 - TransCanada, EnCana, Epcor, Suncor, Atco, SaskPower, Enmax, PetroCanada, TransAlta, Dupont, CN Rail, St Lawrence Cement, Tecknion, TechCominco, OPG, RBC, Dofasco, BC Hydro
 - ICO2N (Keyera, Syncrude, Total E&P, Shell, etc.)
- Sectors include:
 - oil and gas; electricity; pharmaceutical; transportation; mining; manufacturing; retail
- Service 10 of Canada's top 50 companies





Managing Carbon: Fad or Trend?

- Skeptics Say:
 - It's just a fad – next year it won't be on the agenda
 - It's not a reality for my business
 - I don't believe in climate change so why should I care?
- Reality Check:
 - Policies and regulations in Canada
 - Growing activity in US (states and federal)
 - International Pressures
 - Public opinion/media strengthening message
 - Legal pressures increasing

It's a long-term trend and needs to be managed.





Canadian Reality

- Majority of Provinces have or are in the midst of developing climate change plans
- Over 110 Municipalities support Kyoto
- Federally
 - Conservatives opposed to Kyoto (& initially CC)
 - Pressure has changed their approach
 - Public, private sector, NGOs, Aboriginal groups
 - Kyoto Implementation Act in place
 - Climate change regulations and compliance tools
 - Specifics are currently being finalized





Provincial Policy Trends

Jurisdiction	Short Term Objective	Intermediate Objective	Long Term Objective
British Columbia	16% below 2000 levels by 2005	33% below current levels by 2020 (Throne Speech)	2050 target to come
Alberta		Reduce emissions to 50% below 1990 levels by 2020 (fixed to GDP)	
Ontario	6% below 1990 levels by 2014	15% below 1990 levels by 2020	80% below 1990 levels by 2050
Québec	1.5% below 1990 levels by 2012	10% below 1990 levels by 2020	
California	2000 levels by 2010	1990 levels by 2020	80% below 1990 by 2050





Alberta Regulations

- *Climate Change and Emissions Management Amendment Act* -passed on April 20, 2007.
- *Specified Gas Emitters Regulation* – effective as of July 1, 2007
 - Facilities emitting 100,000+ tonnes of GHGs/yr = reduce intensity by 12% below 2003-2005 avg. by July 1–Dec. 31, 2007 period
 - New facilities = reduce intensity by 2%/yr after 3rd year of operation.
 - Emissions reductions may be via operational improvements, purchase of offsets or contributions into a climate change Technology Fund
 - Tech fund corporate rate is \$15/tonne of GHGs





Pending Federal Regulations

Facilities emitting 100,000+ t CO2e/yr	Existing Facilities	New Facilities (1st year operation 2004 or later)
Base Year	2006	3 rd year of operation (3 yr grace period)
Type of Target	Sector based intensity on non-fixed process emissions	
Targets	<ul style="list-style-type: none"> □ 2010 = 18% □ 2011 = 2% □ 2012 = 2% □ 2013 = 2% □ 2015 = 2% □ 2020 = 150 MT (absolute reduction) 	To apply in 4 th year of operation, to be based on cleaner fuel standards, and require further 2% intensity reduction per year to 2020.





Federal Regulations - Compliance

- **Compliance Options**

- *Abatement*: intensity reductions at the regulated facility (e.g., operational improvements)
- *Technology Fund*: \$15/tCO₂e emitted in excess of target (2010-2017); declining contributions (70%, 65%, 60%, 55%, 50%, 40%, 10%, 10%) at (\$15, \$15, \$15, \$20, \$20) escalating with GDP
- *Domestic Offsets*: 3rd party verified, in Canada
- *Domestic trading*: from Canadian regulated facilities
- *CDM CERS*: 10% of compliance requirement
- *Credit for Early Action*: 15Mt system-wide limit





Offsets

- Quantification Protocol is a standardized method for calculating GHG emissions that can be applied to multiple projects:
 - of a given project type; and
 - based on common site characteristics or practices.
- Protocols typically developed and validated before preparing project-specific documentation
 - Have to be pre-approved by the Offset System Program Authority (federal).
 - Can also provide information on monitoring and verification requirements for the given project type.





Alberta Protocols

- Approved Protocols

- Afforestation
- Beef Feeding
- Beef Lifecycle
- Biofuels
- Biogas
- Biomass
- Compost
- Energy Efficiency
- EOR (CCS)
- Landfill Gas
- Pork
- Tillage
- Waste Heat Recovery





Potential Federal Protocols

- Agriculture
 - e.g.: feeding practices for swine, soil management
- Waste Management
- Geological Storage
 - acid gas re-injection/enhanced oil recovery.
- Forestry
- Energy Efficiency
 - e.g.: waste heat recovery – industrial processes; electrical appliances; retrofits and upgrade of commercial building
- Renewable Energy
- Transportation (modal shifting)
- *CCS is still under discussion at this time.*





Nationally:

- No decision if in LFE system or offset
- Leakage, monitoring systems to be resolved

Internationally:

- CCS recognized as a CC solution (leakage, monitoring issues to be resolved)
- CCS is being considered as a CDM activity
- International process welcomes submissions on key technical issues on CCS by June 16th, 2008





US Pressure

- US energy bill, Energy Independence and Security Act, passes through Congress (Dec 2007)
- The bi-partisan Leiberman-Warner *America's Climate Security Act*, is currently in congress
- California takes the US EPA to court over tail-pipe emissions standards
- Corporate Pressures
 - Business Env. Leadership Council (42 firms -> \$2.4 trillion)
 - Carbon Disclosure Project (inst. investors represents \$41 trillion assets)
- Numerous States have CC plans, targets and even GHG regs in place
- Regional Emission Trading schemes setting up
- 210 Municipalities in U.S made formal statements
- Public awareness increases: rallies across the US; Gore and Laurie David factor taking hold.





International Pressures

- Activity Picking Up
 - EU Accepts new targets (GHG & Renewables)
 - European Market continues to solidify
 - EU is exploring emissions trade tariffs on imported goods –major implications for US and Canada as trading partners
- Investment into carbon market grows:
 - close to \$30 billion in carbon funds alone
 - Increasing number of CDM deals (US\$5 billion, including JI)
- Bali Action Plan to be completed by 2009
 - Post-2012 to be negotiated under the Convention
 - U.S. re-engage in post-2012 negotiations, given they are under the Convention and not the Kyoto Protocol
- UN (as a whole) makes climate change a priority





Corporate Risks

- Uncertainty Factor
 - Kyoto & National Direction (Post-2012, LFE, Offset, etc...)
 - Rate of Return & Price of Credits
- Global Competitiveness
 - Export oriented
 - Vast majority of competition not subject to Kyoto
 - Energy intensive nature and energy cost vulnerability
- Buyer or Supply Chain Preferences
- Bankers, insurers, and institutional investors are asking questions
- Share-Value Exposure
 - Differentials in GHG emissions
 - Decreasing Value of Capital Stock
 - Increasing CC Resolutions





Corporate Opportunities



- **Competitive Advantages**
 - Reducing GHG emissions is an energy/resource issue
- **Looking at Business under a New Lens**
 - Enhance productivity
 - Differentiate yourself in the market
 - Increase value of technology
- **Mitigate Future Risks**
 - Regulatory, financial, governance, market liability
- **Offset Credits, CDM & JI**
 - Technology transfer
 - Possible supplementary revenue





Positioning yourself for success

- Craft a Picture (Present & Future)
 - Business situation (domestic vs. international)
 - LFE?
 - GHG emissions
 - Shareholders / stakeholders
 - Market / Regulatory Context
 - Buyers, supply chain, market drivers
 - LFE Regulations, National Offset System
 - Potential Risks
 - Financial, regulatory, governance, reporting
 - Possible Opportunities
 - New products, services, technology valuation





Positioning yourself for success

- Understand, Measure & Monitor
 - Measure & analyze GHG emissions
 - Carbon valuation & market
- Be Proactive & Creative
 - Identify innovative investments & solutions
 - Leverage your technology / service
- Hedge your bets (internal, trading, offsets,...)
- Get and stay engaged
 - Lobby for what works NOT for what doesn't





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