



C a l g a r y

**Chamber of
Commerce**

in business together

Positioning Canada as a leading low carbon energy user, producer and exporter

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Key Points Summary

The convergence of environmental concerns, energy security and green job creation as key themes in policy-making discussions in the United States represents a transition from the current primarily fossil fuel driven nature of electricity and transportation fuel markets in North America. This presents a particular economic and technological challenge to Alberta given the role of hydrocarbon development and export in our energy system and economy.

The Calgary Chamber of Commerce's response is built around a vision for action that balances the environment and economic prosperity for the future of Canada's energy industry. It envisions Canada as a leading low carbon energy user, producer and exporter. Being a leader in developing low carbon emission technologies will help reduce Canada's footprint and create economic opportunities to provide solutions to the rest of the world.

Energy production is generally a provincial responsibility. Alberta was the first jurisdiction in North America to introduce emissions pricing and has valuable experience in greenhouse gas (GHG) emissions reporting, offset market development and regulating large final emitters. The federal government's role should be to:

- Ensure provinces and territories, as owners and regulators of energy resources, have the opportunity to participate in establishing Canada's climate change policy and international approach;
- Establish policy and regulatory certainty toward a long-term climate and energy strategy that enables business investment to move forward;
- Encourage innovation and investment in technologies and processes to reduce GHG emissions at the source; and
- Ensure a fair and balanced policy framework that allows Canadian companies to compete across Canada and internationally.

As Canadians engage in a discussion about how to capitalize on existing strengths and comparative advantages in energy production, we must work to avert potential barriers to trade as proposed in current draft U.S. Congressional legislation and regulations. Canada and the United States are sovereign nations that have unique national circumstances and will undertake their own GHG reduction policies. We must resist unilateral actions that create impediments to trade in an integrated North American energy market and the loss of economic opportunity and security. We must also capitalize on opportunities for joint technological development that benefits both Canada and the U.S. Important considerations include:

- **Focus on equivalency of environmental outcomes.** Barriers to trade could present themselves in many forms in various product standards and cap-and-trade proposals before Congress. Energy exporters will only be able to overcome these potential barriers if Canadian standards are shown to achieve similar environmental results. This does not mean the policies will be the same, but that they will achieve similar environmental outcomes.
- **Collaboration on key trade enhancing initiatives.** Canada and the United States have a very different mix of GHG emitting facilities. A common understanding of these will help to build a base for the development of sound national policy. Collaboration on developing complementary greenhouse gas reporting rules will be another important initiative. Provinces that have well-established rules in place for some time may provide valuable guidance and recommendations.
- **Re-enforce the need to think about these challenges in a North American context.** Energy infrastructure and manufacturing supply lines run north-south. While policies will be driven by specific jurisdictions, there needs to be consistency in the energy and environmental goals that reflect the reality of the existing North American integrated energy market.



Realizing the vision of a leading low carbon energy user, producer and exporter

Key elements to moving forward on a climate change policy that balances the economy, environment and U.S. global energy security goals, and positions Canada as a low carbon energy user, producer and exporter include:

Emissions pricing design

Emissions pricing will be a critical policy tool in creating market signals that incent investment and innovation to reduce GHG emissions. Policy certainty is equally vital to long-term capital decisions, and to direct research and development activities. The details of this policy are essential to our vision and supporting technology. With the wrong design, emissions pricing may divert financial resources to jurisdictions where they are least needed. Emissions pricing should therefore adhere to the following principles:

- Establish targets and timeframes that are realistic and respect capital cost turnover rates.
- Include provisions for cost containment (e.g. ceiling price, floor price, and/or strategic offset reserve) to minimize financial risk and provide investment certainty.
- Broadly apply to GHG emissions economy-wide (beyond large industrial emitters) and ensure equitable treatment among and within sectors.
- Allow for equivalency agreements across jurisdictions.
- Provide an opportunity for contributions to technology development as a major option for compliance (e.g. contributions to a Technology Fund) with no phase out of this option as outlined in the federal plan.
- Recycle any carbon charge or levy within the industries and jurisdictions in which it originates to develop technology and infrastructure to reduce GHG emissions at the source.
- Implement Canadian regulations outside of criminal law to avoid limitation of flexibility in compliance mechanisms.

In any proposed emissions pricing design, the government must clearly communicate to Canadians the cost of proposed measures. Emissions pricing design must take into account the ability and willingness of consumers to shoulder these costs, and Canada's role as an energy exporter.

A Canada-U.S. cap-and-trade system has the potential to transfer significant financial resources out of the country to cover allowance payments. An option to comply by paying into a Technology Fund must be a critical component of any cap-and-trade design.

Industry and government collaboration in energy research

Emissions pricing can spur innovation and lead to transformative technology development in the long-term. However, the political and economic realities of setting an emissions price that allows consumers to adjust, means technology that has a high cost and substantial technical risk is not likely to move forward until the carbon price rises substantially and government policy certainty is established. A partnership between industry and provincial and federal governments (including the United States) will be necessary to immediately capitalize on emerging technologies that are deemed promising but too expensive to implement in their current state.

Investments in clean energy and renewable energy are long-term, and while commitments made by the federal government to the ecoENERGY Technology Initiative and the Green Infrastructure Fund announced in the 2009 Federal Budget are important, they should be viewed as a first step towards a major partnership between industry and government to share financial and technological risk (provincial, federal and U.S. collaboration). The Government of Alberta's Alberta Oil Sands Technology and Research Authority (AOSTRA) initiative is a model of this approach.



Diversifying customer markets and electricity transmission options

Due to its extensive reserves and small population, Canada is one of the few net energy exporters in the world.¹ Its almost singular dependence on the U.S. market creates a poor bargaining position for trade and environmental regulation negotiations. With growing concerns about U.S. reliance on foreign sources of energy and a rising demand for energy from the emerging economies of China, Japan, Korea, and Taiwan, it is prudent for Canada to look at diversification of customer markets. Proposed pipeline projects such as the Northern Gateway Pipeline and Kitimat LNG terminal could provide options for producers to export oil & gas to Asian markets and improve Canada's position in future negotiations with the United States. A key element to diversifying markets will be timely regulatory decisions for pipelines. It will also involve working closely with federal departments and agencies and the Government of British Columbia to remove any impediments to project development.

Also, electrical transmission connection across Canada and to the United States is critical to connecting clean energy and renewable sources of power production to customer markets. Alberta has the lowest electrical interconnection capacity of any province in Canada and is poorly connected to its U.S. and Canadian neighbours.² Indeed, Alberta has the lowest import/export capacity in the Western Electric Coordinating Council. The U.S. government has clearly signaled its intention to build new transmission lines to access renewable energy sources. Without significant additions to Alberta's export capability, Alberta's clean and renewable energy sources such as wind power will be unable to access market opportunities in the U.S. and other Canadian provinces. New generation technology such as coal-fired plants with carbon capture and storage will be similarly constrained. In order to maximize provincial and federal benefits, both economically and environmentally from electricity trade, the development of new transmission infrastructure is essential.

Broadening the domestic policy discussion to include energy efficiency and demand side measures (DSM) and other policy tools

Canada is one of the world's largest energy consumers measured in terms of per capita energy consumption and energy intensity (energy consumption per unit of GDP). CO₂ emissions are often created during consumption, not in the development of energy (e.g. about 80 per cent of GHG emissions from a barrel of oil relate to the end user). Clear demand side measures (DSM) are critical to the climate change policy discussion.³

The Chamber of Commerce endorses initiatives contained within the recent Alberta Energy Strategy including:

- The implementation of smart metering and smart grids;
- Strengthening of building codes to reduce energy use and supporting retrofit/renovation programs; and
- Promotion of urban planning that increases population density and provides greater access to public transit.

Policy measures also need to look at all sectors of the economy and all opportunities to reduce emissions. Canadians need to consider how product standards (e.g. renewable portfolio standards, low carbon fuel standards and vehicle emissions standards) might function in combination with a cap-and-trade (or equivalent) program. Early adoption and innovation in utilizing these policy tools will support the development of knowledge, systems and human resources and create new business opportunities for Canadians.

¹ Canada West Foundation. (2008). *National Energy Security from an Exporter's Perspective: The Canadian Experience*.

² IPA Energy + Water Economics (2008). *Innovative Electricity Markets to Incorporate Variable Production to IEA – Renewable Energy Technology Deployment*.

³ Canada West Foundation. (2008). *National Energy Security from an Exporter's Perspective: The Canadian Experience*.



Trends – Strengths, Weaknesses, Opportunities & Threats

Reality - All energy forms will be required to meet demand

Global energy demand is expected to increase by 50 percent by 2030 driven largely by growth in non-OECD countries.⁴ The world will require all the energy that markets can deliver including oil, natural gas, coal, nuclear, wind, hydro, geothermal and biofuels. Due to challenges with infrastructure footprints, intermittency and energy storage for renewables, most forecasters believe that hydrocarbons will continue to meet a major part of energy demand. Canada is positioned to be a key supplier of all energy forms with conventional fossil fuel resources (oil & gas, coal), emerging fossil fuel resources (shale gas, tight natural gas and the oil sands), renewable energy (wind, hydro) and other promising technologies (nuclear, geothermal and microgeneration). It is important that energy that is classified as “clean” or “low emission” should be defined by the quantified emissions and the actual life cycle impact on the environment, not by fuel type or political correctness.

Challenge - Customers demand greater environmental performance with limited cost increases

While energy demand is likely to continue to rise, Canadians and other major customers are demanding greater environmental sustainability. They are also concerned with cost increases and reluctant to give up their current quality of life

The convergence of environmental concerns, energy security and green job creation as key themes in policy-making discussions in the United States represents a transition from the current primarily fossil fuel driven nature of electricity and transportation fuel markets in North America. This presents a particular economic and technological challenge to Alberta given the role of hydrocarbon development and export in our energy system and economy.

Opportunity - Become a leading low carbon energy user, producer and exporter

The Calgary Chamber of Commerce recognizes the business opportunities inherent in developing and implementing the knowledge and technology necessary to be a leading low carbon energy user, producer and exporter.

Such a vision would require discussion about the strengths and weaknesses of our current integrated North American energy market, and in particular, how it might be strengthened. This strengthening could include everything from diversification of the current energy product mix to diversification of our primarily north-south energy market.

While it is a formidable challenge to move from ‘carbon intensive’ to ‘carbon smart’, managing environmental impacts and carbon footprints also represents a tremendous business opportunity to create the ‘Silicon Valley’ of low carbon energy production, centred in Canada. If achieved, it would position the country as a global leader in innovative ways to reduce the carbon footprint of energy production through, among other things, use of CO₂ for enhanced hydrocarbon recovery, carbon capture and storage, clean coal, and alternative power generation strategies and demand side measures with the potential to export these technologies worldwide. It would also continue to provide tremendous opportunities for all Canadians. For example, oil sands development is expected to contribute \$102 billion to Ontario’s economy, \$8 billion to Quebec and \$45 billion to other provinces and territories.⁵

⁴ Energy Information Administration. (2008). *International Energy Outlook 2008*.

⁵ Canadian Energy Research Institute (CERI). (2005). *Economic Impacts of Alberta’s Oil Sands. Volume 1*.



Capitalizing on our strengths and comparative advantage

Canada's energy industry makes a major contribution to the country's prosperity. In 2007, the industry comprised 5.6 per cent of national GDP and directly employed about 372,000 people, or 2.2 per cent of the Canadian labour force. Energy export revenues totaled \$90 billion, around 20 per cent of all exports.⁶ In Alberta, the energy sector makes a major contribution to the province's quality of life. It is directly and indirectly the single largest contributor to provincial GDP, income, employment and government revenues, and comprises more than two-thirds of our exports.⁷

Canada cannot underestimate the contribution of the oil sands to future prosperity. Investment and development during the period of 2000 – 2020 is forecast to yield total government revenues of \$123 billion dollars (income tax, royalties, corporate tax, provincial sales tax, GST, property tax, etc.) and a total increase in GDP of some \$885 billion.⁸ The federal government is estimated to be the largest recipient of revenues with \$51 billion, or 41 per cent. However, along with the huge potential of the oil sands, other important initiatives are underway.

Western Canada is well positioned to be a leader in carbon capture and storage (CCS). The unique storage potential of the Western Canada Sedimentary Basin along with the Government of Alberta and industry partnership (\$2 billion from the government to be at least matched by industry) to fund research and development of CCS facilities is a strong step towards developing new industrial capacity.

Natural gas, both conventional and emerging resources such as shale and tight gas, is also a vital part of Alberta's energy future. There is huge potential, with ultimate recoverable reserves of 223 trillion cubic feet.⁹ Natural gas will be a valuable contributor to reducing the carbon footprint of energy production in Canada and represents a bridging fuel to next generation technologies.¹⁰

In addition, the economic contribution of Alberta's non-hydrocarbon energy development is of growing importance. Alberta has the most wind energy produced per capita in Canada, with 524 MW of installed capacity today, and there are over 9,000 MW of wind proposals in development. Many of the head offices of Canadian wind companies are located in Calgary.

Dealing with the potential threat of U.S. trade barriers

Canada and the United States are sovereign nations that have unique national circumstances and will undertake their own GHG reduction policies. We must resist unilateral actions that create impediments to trade in an integrated North American energy market and the loss of economic opportunity and security. We must also capitalize on opportunities for joint technological development that benefits both countries.

Figure 1 (page 6), originally prepared by Natural Resources Canada, indicates the tremendous variety of Canadian energy resources; the importance of free trade and export markets; and the interconnectedness of the Canadian and U.S. energy markets. Due to a small Canadian market, growth in Canadian oil production is being developed for export almost entirely to the U.S. While not as important as oil, the U.S. still remains a significant destination of natural gas exports. There are significant natural gas and oil pipelines systems in place in Canada and the U.S. with only one significant supply source left unconnected – Arctic gas. Over 50 per cent of uranium production is destined for the U.S. Electricity trade is very much a two sided situation with power being traded across the border in both directions, with strong integrated regional markets particularly in the east.¹¹

⁶ Canadian Energy Research Institute (CERI). (2005). *Economic Impacts of Alberta's Oil Sands. Volume 1.*

⁷ Government of Alberta. (2008). *Launching Alberta's Energy Future- Provincial Energy Strategy*

⁸ Canadian Energy Research Institute (CERI). (2005). *Economic Impacts of Alberta's Oil Sands. Volume 1.*

⁹ Government of Alberta. (2008). *Launching Alberta's Energy Future- Provincial Energy Strategy*

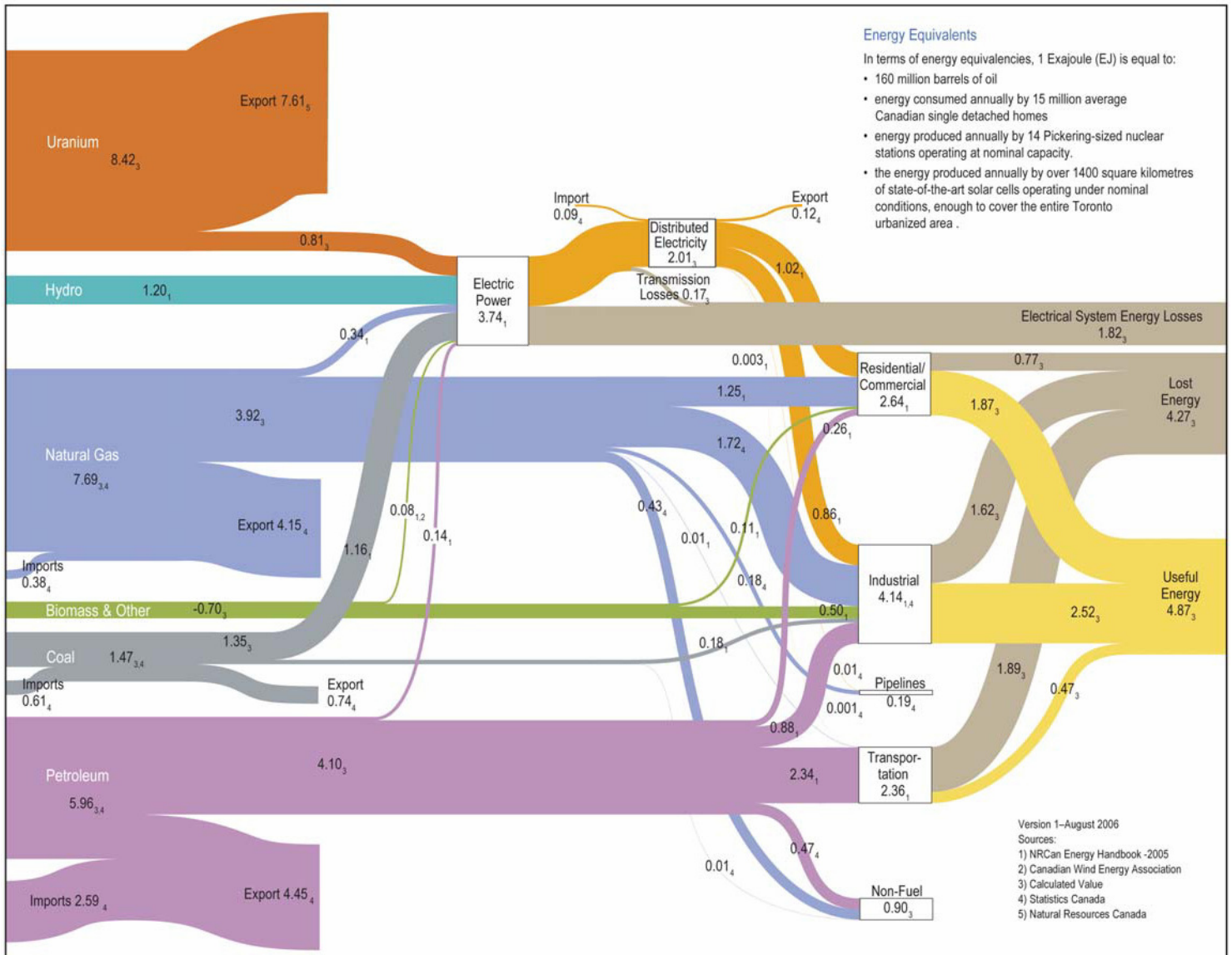
¹⁰ Keith Rattie, Chairman, President & CEO of Questar Corporation. (April 2, 2009 speech). *Energy Myths and Realities.*

¹¹ Canada West Foundation. (2008). *National Energy Security from an Exporter's Perspective: The Canadian Experience.*



The proposed American Clean Energy and Security Act of 2009 will have fundamental impacts on the way energy is produced, used and traded and as such should be approached as a trade negotiation of similar importance to the negotiation of NAFTA. The federal government needs to have a well thought out negotiating position going into the negotiations that includes knowing what our must-haves and trade-offs are.

Figure 1 - Canada's Energy Flow – 2006



Source: Powerful Connections: Priorities and Directions in Energy Science and Technology in Canada, Natural Resources Canada, 2006.