

# Analysis and Review of Canadian Think Tank Climate Change and Energy Reports for the Banff Dialogue

Dave Sawyer  
Philip Gass  
International Institute for Sustainable Development (IISD)

---

# Analysis and Review of Canadian Think Tank Climate Change and Energy Reports For the Banff Dialogue

---

Dave Sawyer  
Philip Gass  
International Institute for  
Sustainable Development (IISD)

---

© 2010 International Institute for Sustainable Development (IISD)

Published by the International Institute for Sustainable Development

IISD contributes to sustainable development by advancing policy recommendations on international trade and investment, economic policy, climate change and energy, measurement and assessment, and natural resources management, and the enabling role of communication technologies in these areas. We report on international negotiations and disseminate knowledge gained through collaborative projects, resulting in more rigorous research, capacity building in developing countries, better networks spanning the North and the South, and better global connections among researchers, practitioners, citizens and policy-makers.

IISD's vision is better living for all—sustainably; its mission is to champion innovation, enabling societies to live sustainably. IISD is registered as a charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Government of Canada, provided through the Canadian International Development Agency (CIDA), the International Development Research Centre (IDRC) and Environment Canada, and from the Province of Manitoba. The Institute receives project funding from numerous governments inside and outside Canada, United Nations agencies, foundations and the private sector.

International Institute for Sustainable Development  
161 Portage Avenue East, 6th Floor  
Winnipeg, Manitoba  
Canada R3B 0Y4  
Tel: +1 (204) 958-7700  
Fax: +1 (204) 958-7710  
Email: [info@iisd.ca](mailto:info@iisd.ca)  
Website: [www.iisd.org](http://www.iisd.org)

This report is an excerpt from the paper “Towards a National Clean Energy Strategy” presented to the Banff Dialogue, April 8–10, 2010 in Banff, Alberta. The event was hosted by the National Round Table on the Environment and the Economy, Public Policy Forum and the Canada School of Energy and Environment. Support was also offered on the project from Natural Resources Canada.

## Table of Contents

|                                                                         |    |
|-------------------------------------------------------------------------|----|
| 1.0 Introduction .....                                                  | 1  |
| 2.0 Summary Observations .....                                          | 2  |
| 3.0 Methodology .....                                                   | 3  |
| 4.0 Working Session One: The Global Context for Clean Energy.....       | 4  |
| 5.0 Working Session Two: Why a National Clean Energy Strategy Now?..... | 8  |
| 6.0 Working Session Three: Key Pillars .....                            | 11 |
| 7.0 Working Session Four: Building Blocks .....                         | 14 |
| 8.0 Conclusions .....                                                   | 17 |
| 9.0 Appendix A: List of reports reviewed.....                           | 18 |

## 1.0 Introduction

Eleven Canadian think-tanks are exploring a collaborative role to spark a national dialogue on the role of energy in Canada's environmental and economic future. The conversation that started in October 2009 among these think-tanks resulted in *The Winnipeg Consensus: Sparking a National Dialogue on Canada's Clean Energy Future*. The participating policy research groups identified areas to build bridges between the various players, including leveraging work and initiatives already underway, and identifying common interests as well as gaps in data and research.

A second meeting of the group will take place in April 2010, with the aim of continuing the discussion and beginning to broaden the consensus with other groups. A possible outcome could be the identification of areas for further research and analytical work to address key groups. Such work would need to build on the considerable technical analysis of clean energy that has been undertaken by the Canadian public policy community, which has published over fifty reports in the last two years. These policy reports likely have common areas of analysis, and gaps in the research and data; but these common findings and gaps have not been categorically reviewed.

This report presents the results of a review of recommendations of the reports released by the public policy community. The analysis is organized around the agenda of the Banff Dialogue, and so can supplement your thinking for each session. This report first provides a discussion of the methods followed. Then, analysis relevant to each of four working sessions is provided. One appendix then lists the reports reviewed and a separate spreadsheet provides a summary of the main recommendations organized by working session theme.

## 2.0 Summary Observations

A major challenge we faced from the beginning of this review was to align the considerable body of climate change work to the needs of forging a path forward on a clean energy dialogue. In most papers, the major focus was on climate policy, where energy supply and demand is an outcome of climate policy. This left us with a very limited number of papers from which to draw information about a clean energy dialogue. That said, two distinct “climate” and “energy” viewpoints emerge from the literature. Reconciling these two views is a challenge that has not been adequately addressed in the existing literature.

The “climate view” thinks about policy intervention in broad strokes—think of carbon pricing policy architecture that sets the broad conditions for a low carbon future. Under the “climate view,” Canadian climate policy shapes future energy development, or at least heavily influences it. Carbon pricing alters technology deployment choices and energy supply resulting in more low-emitting energy in the mix while decarbonizing fossil fuel production. The “climate view” is typified in the papers by a top-down interventionist approach that seeks to harness markets to alter energy choices.

But this “climate view” contrasts to the “energy view” that emerges from a small number of the papers reviewed. Under this view, Canada’s de facto market-based energy policy has set the conditions leading to investment certainty, capital flows and a strong and vibrant national energy sector. But there are cautions as conditions change. While the market-based system has worked well, and made Canada an energy superpower, recent market volatilities and structural weaknesses reveal that the status quo will not serve moving forward. Risks are many and varied, with environmental performance; dysfunctional federal, provincial and territorial relations; and U.S. energy security all figuring prominently in the literature. This then leads to calls to look at energy policy independent of climate policy. As one paper suggests, we need to “take a step back from the climate change discussion and ask the broader question: what are Canada’s energy goals?”

Our review would concur with this. The vast majority of papers do not look at energy as a stand-alone issue, and predominantly focus on carbon policy or climate change. This is a problem since there is a fundamental disconnect between the way we think about climate policy, which is high level and in broad strokes, and the way energy supply and demand decisions are made, which is more transactional. This then leads to a clear need to expand policy analysis to energy issues independent of climate policy. With a more substantiated analytical basis that explores emerging energy risks and opportunities, we will be in a better position to reconcile the divergent climate and energy views.

### 3.0 Methodology

The source material for this exercise consisted of the documents listed in Appendix A. The first step was to summarize the recommendations of each of the reports into individual one-page briefings that classified each of the report recommendations under the corresponding titles of the four Banff Dialogue working sessions. The purpose of this was to determine the focus of the work in the field today and help determine where the majority of the discussion to date has taken place and which topics have been better covered in the literature than others.

The next steps taken were to further break down this information and condense it into one reference document. Each recommendation was summarized in one line and entered into a spreadsheet with separate pages for each of the working session headers. To give an idea of the specific nature of the recommendation an area (or areas) of focus was attached to it. These areas included markets, trade, targets or issues relevant to energy.

A review was then conducted and determined that a number of the reports and recommendations were not directly related to the theme of a national clean energy strategy. Going back to the initial reports, a list was compiled of the 18 (of the total 57) reports that were most directly topical to the subject of the development of a national clean energy strategy for Canada. These reports then were taken under further consideration for the subject matter of this summary report.

Our assessment of the 57 reports organized by each working session follows.

## 4.0 Working Session One: The Global Context for Clean Energy

Thirty-six recommendations were made amongst the 57 reports on the topic of the Global Context for Clean Energy. As in other areas, many of the recommendations were heavily weighted towards climate change, with energy policy often a secondary consideration or not present at all. Two areas of wider consensus emerged in the reports under this topic:

- Fifteen of 36 recommendations involved calling for the increased presence/role of an international body for oversight of issues related to energy and climate change (UNFCCC Climate Change Negotiations, IEA, G8/20, etc); and,
- Seven of 37 recommendations sent a clear message that Canada and the United States have to work together on energy (and climate change) strategy.

Other areas of lesser consensus were:

- The importance of international market mechanisms (6 recommendations);
- Being aware of implications and developing policies with trade facilitation in mind (5 recommendations); and
- The importance of ensuring energy security (3 recommendations).

In those reports with a focus on energy, a main theme, or perhaps objective of an energy strategy, is the need to reconcile Canadian supply expansion with an emerging global demand for clean energy while ensuring Canada continues to be a competitive supplier. Two quotes exemplify this focus on clean energy competitiveness:

*Over time, the mix of factors of production in the energy services package will increasingly shift toward capital, technology and expertise, and away from commodities. Put another way, the way we deliver and use energy—the way we derive energy services in our communities—needs to change and as it does there will be positive outcomes with respect to environmental performance, affordability and security.*

*As we come to terms with a low emissions future, our competitiveness will depend on a comprehensive strategy, collaboration among governments, investments in low-carbon-emission technologies, an attractive investment climate and, perhaps most importantly, an integrated policy vision that reflects energy and environmental imperatives.*



Four sub-themes relevant to the development of an energy strategy and the global context of clean energy also emerge from the review: investment to transition to a low carbon future; what the future means for Canada; Canada's clean energy niche; and where will the capital come from? Each is discussed below.

1. **Investment to transition to a low carbon future.** The transition to a low carbon future is predicated, at least in the literature, on large-scale technology development and deployment. Clean energy and a low carbon future is then about influencing capital deployment across a broad spectrum of energy supply and demand. The literature advocates an urgent need for action on climate change given the near-term and large-scale renewing of crumbling energy infrastructure and the shifting the mix of energy. The following quote exemplifies the theme in the literature:

*It is in Canada's national interest to begin the transition to a low-emission future immediately [...] delaying action to reduce GHG emissions comes with economic and environmental risks. One such risk is that, in the absence of a long-term climate change policy framework, energy infrastructure choices being made now will be increasingly difficult and costly to address in the future. On the environmental side, the main risk involves higher cumulative GHG emissions over the time period in question.*

Finally, an allied carbon competitiveness opportunity echoed in a number of reports is that of clean technology exports, with a need to develop strategies to identify the commercial opportunities that will flow from world-wide efforts to combat climate change.

2. **What does the future mean for Canada?** Fossil energy will remain the dominant North American energy source into the future, especially given rising energy demand that is forecast to rise about 20 to 25 per cent above current levels by 2030. But the future will be very different from the market-driven supply expansion of the past with increasing energy supply costs and increased pressure for environmental performance. One quote sums this forecast of the future up nicely:

*The future of resource development in Canada will be far different from the past. Resources are more unconventional, more costly and more technologically challenging. Legitimate demands for improved environmental performance mean higher costs and require policy harmonization between levels of government and across countries. As a consequence, no longer can policy makers assume that new supply will be developed regardless of time delays or additional cost burdens.*

3. **Canada's clean energy niche.** The literature acknowledges but does not explore Canada's clean energy niche, with numerous papers mentioning it as an asset but few papers exploring just what that means. Generally, it is taken as a given and forms the backdrop of a discussion focused on climate policy and a means reduce emissions. That said, advantages are recognized: Canada's energy endowment, political stability and access to U.S. markets make Canada unique globally. There is also a recognition that our clean energy niche, at least so far, has been more about the market-driven development of oil and gas resources and less about clean energy:

*The Canadian energy industry has become the behemoth of the national economy, a critical continental supplier, and a significant global player with little assistance or interference from government policy. Oil, natural gas, refined products and electricity have evolved into North American commodities, with coal and uranium accessing global markets. New renewables, which lack the clear, coordinated policies that have fostered far greater penetration into European markets, have grown modestly at best.*

4. **Where will the capital come from?** With a heavy focus in the papers on carbon policy, it is not surprising that carbon markets and carbon pricing are pegged as the main drivers of capital deployment. This focus on policy intervention is advocated given the scale of the deployment in transformational technologies required to align emission reductions with the aspirational reduction targets sought by Canada.

Conversely, the focus in the energy papers is on market forces, where new capital would flow from a sound and market-driven energy policy that supports investment certainty. Typically, the papers focus on a sound investment climate and working energy markets to enable the private sector to finance clean energy.

A summary of the main findings under the Global Context of Clean Energy theme is provided in the following matrix.

### **Investment to transition to a low carbon future**

Low carbon future is about influencing capital deployment across a broad spectrum of energy supply and demand.

Transition to sustainable economy requires large scale financing, technology transfer and international cooperation.

### **What does the future mean for Canada?**

Rising energy demand, increased costs to access higher cost energy sources and increased pressure for environmental performance will mean that the future will be very different from the market-driven supply expansion of the past.

## **Global Context for Clean Energy**

### **Canada's clean energy niche**

The energy industry has become the behemoth of the national economy, a critical continental supplier and a significant global player with little assistance or interference from government policy.

New renewables, which lack the clear, coordinated policies that have fostered far greater penetration into European markets, have grown modestly at best.

### **Where will the capital come from?**

"Climate view": Carbon markets as technology financing enabler.

"Energy view": With a sound investment climate and working energy markets, the private sector will finance clean energy.

## 5.0 Working Session Two: Why a National Clean Energy Strategy Now?

“Why now?” is a theme that runs deep in the literature, with widespread emphasis on how the market-led development of energy resources has worked well for Canada until now. But there are widespread calls to update Canada’s market-based and reactive energy policy to one that is more forward-looking and comprehensive.

Twenty-three recommendations were made among the 57 reports on the subject of why a national strategy is needed, and why it is needed now. The overarching message from the recommendations was that there is a need for cooperation among various governments (federal/provincial/territorial)—that there are significant benefits to harmonization, and that an overall vision would help facilitate policy-making. Eleven out of 23 recommendations touched on some form of this theme.

Lesser areas of consensus include:

- The need for an effective national policy to protect trade interests (6 recommendations);
- Having to match or exceed the amount of progress reached in the United States (5 recommendations); and,
- A desire to be an international leader on energy/climate change policy (2 recommendations).

Some of these messages were interrelated, such as the ones on trade and matching U.S. policy. Overall however, the prevalent theme was a need for government cooperation and policy coherence, both to ensure effective policy and to best protect Canada’s interests abroad. The following quote sums up a call in the literature for a strategy to address chronic and perhaps growing weaknesses in the energy sector:

*Recent complaints from virtually all parts of the energy sector about the slowness of regulatory approvals, lack of clarity between federal and provincial climate change policies, and wobbly commitments to market principles have led to a growing demand for a coordinated policy framework if Canada is to achieve its potential.*

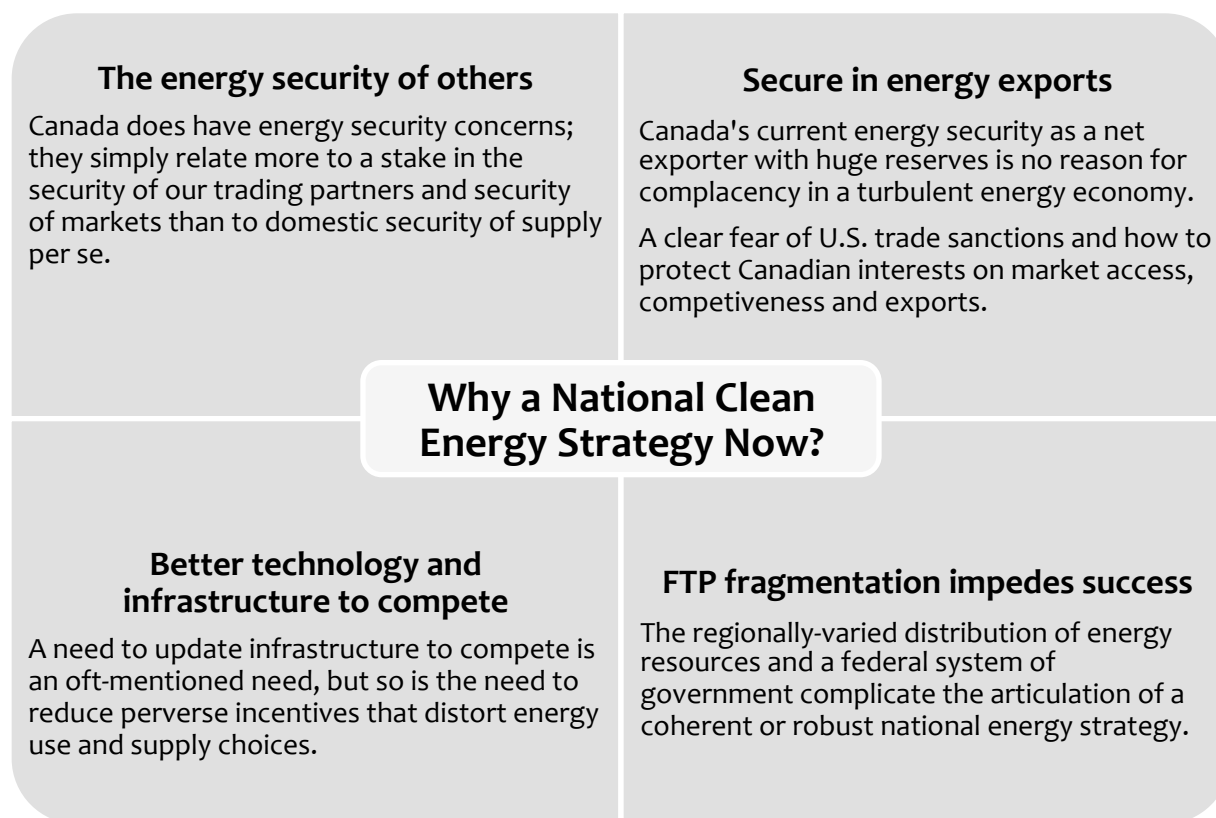
Below is a assessment of the four sub-themes relevant to the Why Now? discussion.

- 1. Energy security as a underlying strength.** Canada's energy security is not questioned in the papers, but rather the energy security of others, and notably the U.S., will likely mean that Canada will remain a supplier of choice. As one paper noted, Canada does have energy security concerns; they simply relate more to a stake in the security of our trading partners and security of markets than to domestic security of supply per se. But it seems that some clarity is required on just what energy security means to Canada, with the debate about energy security a confused and often self-contradictory one, clouded by confusion over terms, federal and provincial roles and responsibilities, producer versus consumer interests, and wildly fluctuating market conditions.
- 2. Energy exports as a fundamental policy driver with a concern about U.S. protectionism.** "Secure energy exports" likely more concretely defines energy security in the Canadian context, with the importance of energy exports today and in the future being a reason to develop energy policy now. As a net energy exporter with huge reserves, Canada enjoys a very high degree of energy security. But with possible U.S. protectionism under climate policy, a number of studies raised concerns over the future. The fear of U.S. trade sanctions then leads to the important question of how to protect Canadian interests.
- 3. Better technology and infrastructure to compete.** The chronic need to update energy infrastructure to enhance energy competitiveness is a strong call throughout the literature. The improvement, expansion and modernization of all aspects of Canada's energy infrastructure is a common theme. But so too is the need to be forward-looking, recognizing that many aspects of an effective energy strategy may take years, decades and even generations to accomplish. This then means that energy policy must be designed to transition from where we are today to where we want to be. But this transition will not be costless, as there is a general call in the literature for an end to subsidization. A number of studies advocate a reduction in perverse incentives that distort energy use and supply choices. While policy-makers and the public have taken cheap energy for granted, subsidization in some energy sources, notably electricity, has led to perverse economic and environmental effects that need to end.
- 4. Federal, territorial and provincial (FTP) fragmentation and inaction impede success.** Running deep in the literature is concern over a policy vacuum largely related to overlapping FTP roles and responsibilities and a dysfunctional FTP energy policy web. Federal realities mean that energy policy discussions naturally gravitate to complex discussion of overlapping and, at times, conflicting FTP policies. The resulting policy détente has largely left the evolution of Canada's energy system and trading relationships to market forces. There is

clearly a frustration that Canadian governments are not meeting their core responsibility, that of articulating policy frameworks for climate change or energy. The risks of this inaction are many and varied, to the point where, ultimately, Canada cannot become a clean energy superpower without a better-coordinated FTP policy framework. This then leads to a strong call for “why now” is the time for the development of a forward-looking energy policy that can raise the profile of issues and prompt a constructive discussion of policy options. An energy policy dialogue could provide the engagement space for constructive dialogue and provide a path through the “intergovernmental swamp.”

The primary references to federal and provincial issues were in this context and there has been little other research done in this area. As a result, the reports were not analyzed for further recommendations regarding working session 5.

A summary of the main findings under the “Why Now?” theme is provided below in the matrix.



## 6.0 Working Session Three: Key Pillars

In the papers reviewed, the key pillars can be classified as either interventionist or market based. Many papers advocate the need for continued government intervention and investment in energy efficiency, infrastructure and innovation, whereas other papers advocate a need for market forces to continue providing a level playing field on which energy supply and demand decisions are made. Fitting energy and climate together is then a dance between market forces that allow energy development to proceed while bending down the trajectory of emissions in time.

Twenty-five recommendations were made suggesting key pillars for a national strategy. Unfortunately for the energy debate, almost half of these recommendations (12 of 25) were focused on climate change, and the key pillars suggested in these recommendations reflected this. When considering those focused solely on energy, one recurring message was a comprehensive plan covering multiple sectors—the most popular being renewable energy—as well as transportation strategies, carbon reductions and energy efficiency measures. Areas of minor consensus include:

- A focus on new technology development (3 recommendations);
- Regulatory certainty (3 recommendations); and,
- The inclusion of the private sector in policy development (3 recommendations).

Appropriate price signals on emissions and energy development were seen as important in several recommendations, but were more closely tied to their climate change benefits rather than energy development. Allow science and economics, not politics, to decide winners and losers in energy supply and demand was also a common theme.

Information from the literature is organized below under four sub-themes relevant to the clean energy and key pillars discussion.

- 1. Sustainable end use.** Despite a focus on market forces to drive climate and energy policies, the presence of market failures that impede more energy efficiency points to a need for ongoing government intervention. A number of papers called for a continued focus on energy conservation implemented through market-based incentives that encourage both conservation and behavioural changes necessary to switch to low emitting technologies. Hence, there is a general call for governments to continue support for energy efficiency programs. The theme of market failures was also present and the associated need to develop regulations that address failures, including codes, minimum performance standards and

mandatory energy labelling.

2. **Sustainable approach to energy and climate change.** This pillar clearly requires finding a balance between Canada’s energy “export” security and protecting the environment. A limited number of papers focused on energy per se, and typically adopted a position that climate policy should enhance rather than inhibit freely functioning energy markets. A clear focus here was, not surprisingly, on supply expansion of all energy sources first, and second, on minimizing the impact on the environment. A few more studies sought to integrate the two, where comprehensive energy and climate policies would help secure economic prosperity and provide long-term opportunities. But by far the greatest emphasis was on climate policy as the dominant driver. The following quote typifies this thread:

*An essential part of the Canadian Sustainable Energy Strategy will be either a carbon tax or a cap-and-trade system (or a combination of both) that charges for carbon dioxide and other greenhouse gas (GHG) emissions [...]. One of the goals of the Canadian Sustainable Energy Strategy is the overall reduction of GHG emissions.*

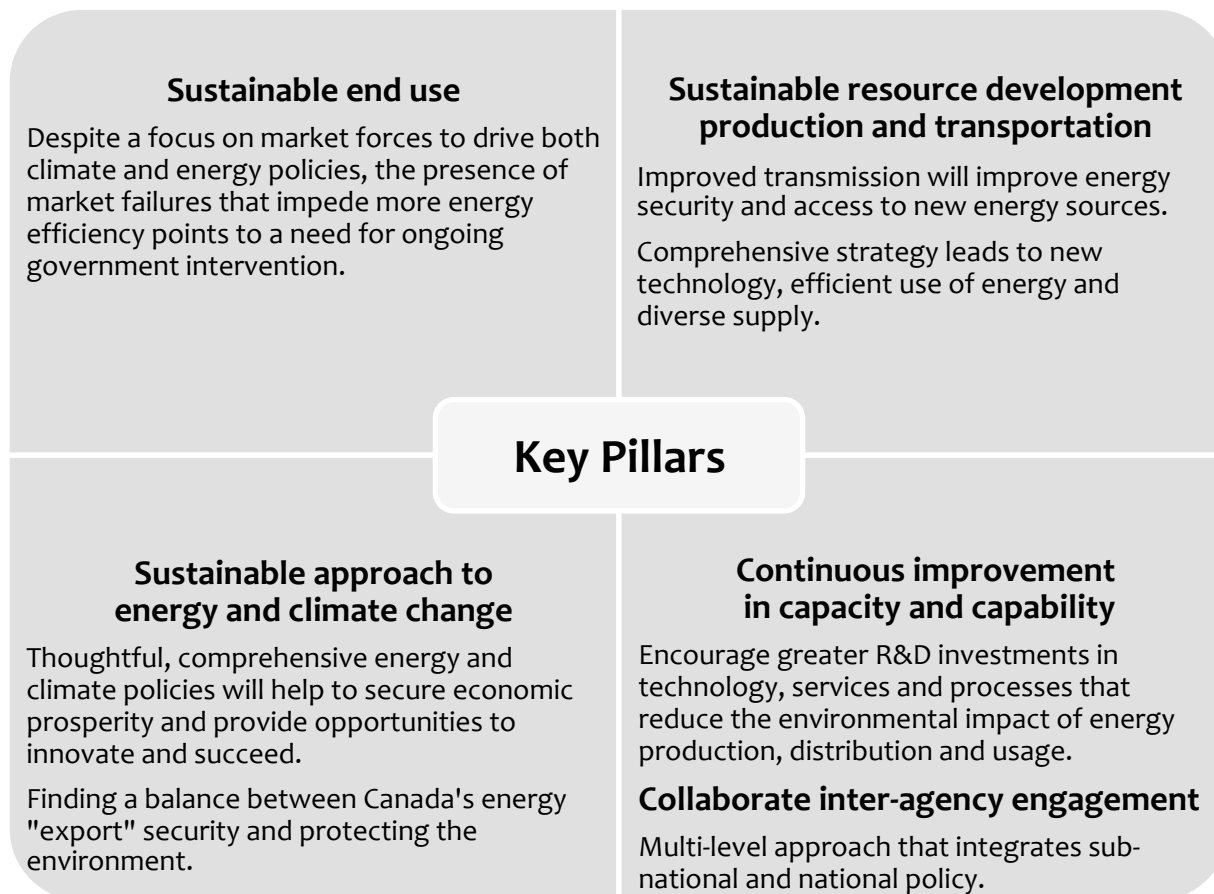
But some argue that policy integration or cohesion will be hard given the two policies, that of climate and energy, work at cross purposes. This assertion is based on a recognition that the future energy supply mix will continue to be primarily fossil based, especially given rising demand and the appetite for low cost energy. As a result, to become a “clean” energy superpower, some argue, Canada will need to adjust downward expectations that deep emission reductions are feasible.

3. **Continuous improvement in capacity and capability.** While there are limited recommendations on innovation, R&D and skills in the literature, it is nevertheless a important underlying theme. A call for more innovation and R&D was common, as was the need for governments to develop a strategy that reflects the dynamic benefits that greater research and development and investments in technology bring to energy production, distribution and usage. Of course, much of the focus was on climate change and innovation around discrete technologies like carbon capture and storage (CCS). But still, many papers call for some degree of broad public investment in technology to spread expenditures across the energy spectrum to encourage the greatest amount of innovation.
4. **Collaborate inter-agency engagement.** Collaborative interagency policy development is a need continually mentioned in the literature but one that may be hard to achieve in practice. Stronger provincial coordination could benefit many aspects of energy production and use, while the federal government could express its national interest and make clear how it proposes to act within its own jurisdiction. Barriers stem from the broad scope of what would constitute “energy policy” and Canada’s institutional capacity to respond within either



single departments or across governments.

A summary of the main findings under the Key Pillars theme is provided below.



## 7.0 Working Session Four: Building Blocks

Major themes emerging from the literature include support for ensuring a diversity of energy supply that encourages competition and innovation. This includes a market-based approach to energy supply decisions that encourages a stable, secure, clean and flexible supply of affordable energy. Closely allied is the need to ensure a level playing field for all energy sources with respect to environmental regulations.

In the literature, 59 recommendations were made suggesting building blocks for a national system. The prevalence of climate change-focused literature led to a high number of recommendations on actions and policies to reduce GHG emissions that, while important, were not related to the energy-driven purpose of this exercise. That said, some strong areas of energy policy consensus emerge:

- The development of renewable energy generation and technologies was the most frequently recommended action (20 recommendations) in support of a national energy strategy;
- The role that market-based solutions could play (15 recommendations);
- While specifics differed, the idea of setting goals and targets for energy development (and energy emissions) was also a recurring theme (6 recommendations); and,
- The reports differed on an exact role for the private sector, but its involvement in the national strategy should be considered in some form (7 recommendations).

Six additional sub-themes relevant to the energy policy discussion are explored below.

1. **Energy and environment.** While most papers argue that climate policy is the future driver of energy supply and demand, those papers that specifically contemplated energy policy asserted it would make more sense to consider energy goals as separate, though still connected to climate policy. This points to a forward-looking need to consider energy and climate policy as separate, at least initially, given there is a set of energy policy concerns that have to be addressed in tandem with climate policy.
2. **Energy supply and demand.** With increasing energy demand coupled with the needed renewal of infrastructure, the development and expansion of all available economic energy sources is required. The literature argues strongly that market forces should continue to guide supply decisions to meet demand, and therefore allow all forms of energy to compete on a level playing field. The following quote exemplifies this building block:

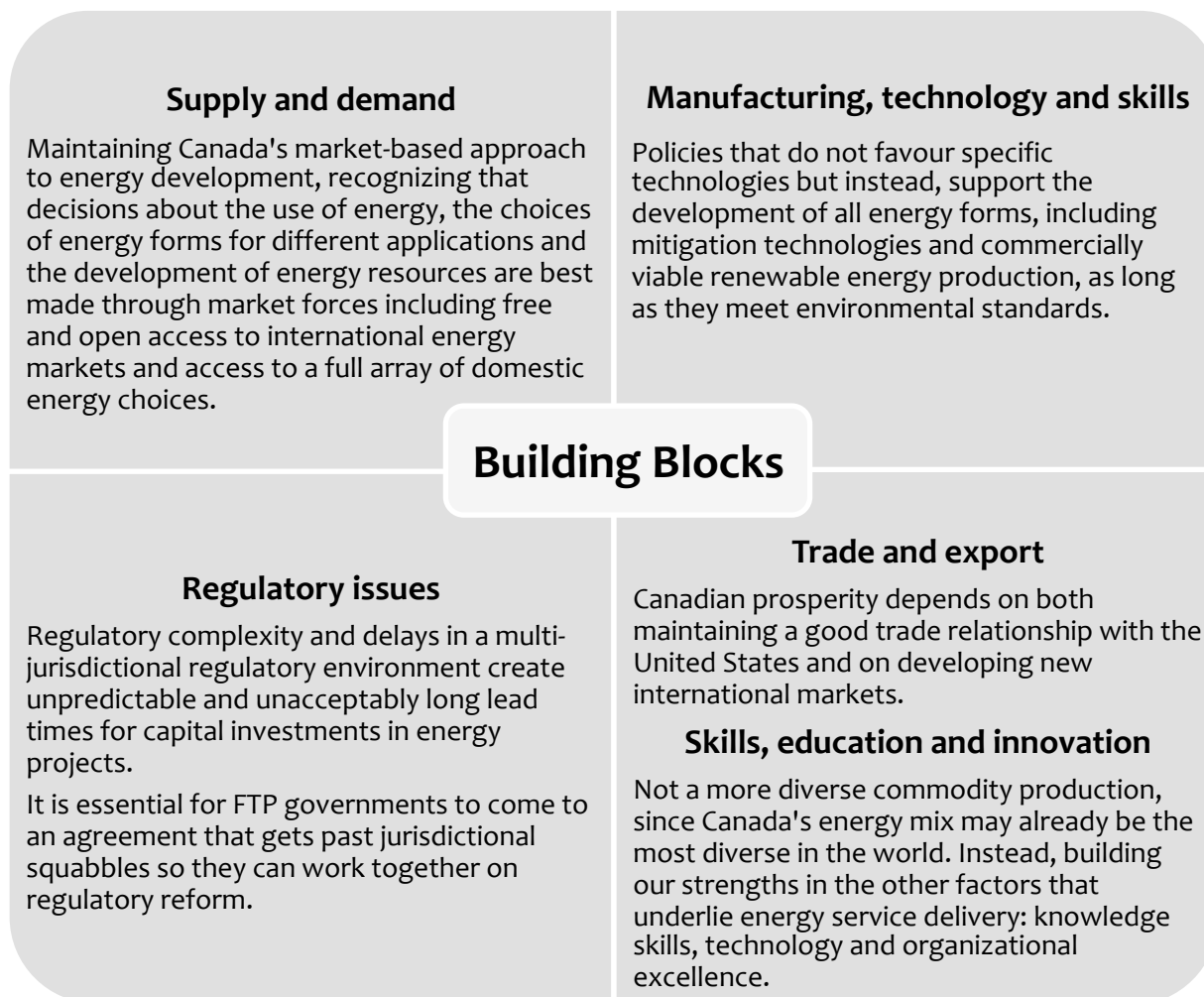
*Maintaining Canada's market-based approach to energy development, recognizing that decisions about the use of energy, the choices of energy forms for different applications and the development of energy resources are best made through market forces including free and open access to international energy markets and access to a full array of domestic energy choices.*

There is also a countervailing emphasis to establish regulations and intervene to influence renewable supply. Establishing portfolio standards and providing incentives across a range of renewable energy is also a common theme.

3. **Trade and Export.** The importance of continued energy trade figures prominently in the literature, with a main focus on the U.S., but an increasing focus on other global markets. The link between Canadian prosperity and trade with the U.S. and developing new international markets is pervasive in the literature.
4. **Manufacturing and Technology.** Picking technology winners is rejected in the literature manifested through a strong aversion to policies that favour specific technology winners. Instead, support for development in all energy forms is advocated, with a strong emphasis on mitigation technologies and, to a lesser extent, commercially viable renewable energy production. Developing value-added industries through an energy sector that maximizes the potential for spin-off technologies is often cited as a desirable building block.
5. **Regulatory Issues.** The literature focuses, rather viscerally at times, on the need to streamline approvals while protecting environmental and social goals. The perverse effects of an uncertain and cumbersome regulatory environment is that energy projects face enormous new policy-driven costs and approval delays, which are compounded at a time when resource development is becoming increasingly expensive. This was not a significant problem in the past, as a strong economy and rising commodity prices masked the regulatory burden, but this has changed. Streamlining is cited as a positive path forward, but it appears that the risk is that federal and provincial/territorial governments cannot get past jurisdictional squabbles and work together on regulatory reform. A building block is to develop bottom-up strategies that identify areas of regulatory overlap and duplication, and then seek to harmonize and streamline the regulatory process.
6. **Skills, Education and Innovation.** While rarely mentioned in the literature, some identify a critical need for skilled labour in the energy industry along with significantly greater public research, development and deployment investments. Indeed, one report had an interesting twist on how to move maximize resource benefits and environmental performance:

*We don't necessarily need a more diverse commodity production, since Canada's energy commodity mix may already be the most diverse in the world. It does mean building our strengths in the other factors that underlie energy service delivery: knowledge, skills, technology and organizational excellence.*

The summary of main findings under the Building Blocks theme is provided below.



## 8.0 Conclusions

Many of the recommendations were heavily weighted towards climate change, with energy policy often a secondary consideration or not present at all. In those reports with a focus on energy, a main theme identified is the need to reconcile Canadian supply expansion with an emerging global demand for clean energy, while ensuring Canada continues to be a competitive supplier. Canada's ability to maintain its competitiveness is a common worry in the literature. The other thing that is clear is that, although there has been excellent work in this area, there is a need for research and data that relates specifically to energy issues.

“Why Now?” is a theme that runs deep, with widespread emphasis on how market-led development of energy resources has worked well for Canada till now. But there are widespread calls to update Canada's market-based and reactive energy policy to one that is more forward-looking and comprehensive. The market-based energy policy of the past needs to be rethought in light of changing global and national weaknesses that have been revealed by the recent economic downturn. One unified theme is a call for government cooperation and policy coherence, both to ensure effective policy and best protect Canada's interests abroad.

With respect to key pillars, many papers advocate the need for continued government intervention and investment in energy efficiency, infrastructure and innovation, all major sources of market failures where interventions are likely justified. Other papers advocate a need for market forces to continue providing a level playing field on which energy supply and demand decisions are made. Appropriate price signals on emissions and energy development were seen as important in several recommendations, but were more closely tied to their climate policy rather than energy development. Fitting energy and climate together is then a dance between enabling market forces to decide how energy development proceeds while intervening to bend downwards the trajectory of emissions.

Major building blocks emerging from the literature include support for a diversity of energy supply that encourages competition and innovation, based fundamentally on a market-based approach to energy supply decisions. Closely allied were calls for ensuring a level playing field for all energy sources with respect to environmental regulations. Improving skills, adding value through technology development and maintaining competitiveness to ensure robust exports were all cited as important foundations that need closer attention. Perhaps loudest were demands for an improved regulatory environment that increases investment certainty while respecting environmental needs.

## 9.0 Appendix A: List of reports reviewed

### Atlantic Provinces Economic Council

*A Changing Climate, The energy sector's quest for sustainability in a new economic environment*, March 2008, <http://www.apec-econ.ca/pubs/%7BAF1928F7-9087-419D-A6C2-74CB915968D0%7D.pdf>

Atlantic Canada's Growing but Changing Energy Potential, December 2008, *Building Competitiveness in Atlantic Canada's Forest Industries*, August 2008, <http://www.apec-econ.ca/pubs/%7B154117EA-752C-44F6-8B0E-370BFC5E32BA%7D.pdf>

Energy Drives Atlantic Canada's Greenhouse Gas Emissions, September 2010

Energy Production and Projects in Atlantic Canada, August 2009

Business Council of British Columbia

The Waxman-Markey Bill – A Major Step for American Climate Policy, August 2008, <http://www.bcbc.com/Documents/EEBv1n3.pdf>

### C.D. Howe Institute

*A Question of Parliamentary Power: Criminal Law and the Control of Greenhouse Gas Emissions*, August 2008, [http://www.cdhowe.org/pdf/background\\_114.pdf](http://www.cdhowe.org/pdf/background_114.pdf)

*Low-Carbon Fuel Standards: Driving in the Wrong Direction*, May, 2009, [http://www.cdhowe.org/pdf/ebrief\\_80.pdf](http://www.cdhowe.org/pdf/ebrief_80.pdf)

*New Tools for a Richer, Greener Future: Why Canadian Workers Need More Robust Business Investment*, July 2008, [http://www.cdhowe.org/pdf/ebrief\\_60.pdf](http://www.cdhowe.org/pdf/ebrief_60.pdf)

### Canada School of Energy and Environment

*Banff Dialogue: the Search for a Canada-US Climate Change Accord: The Road to Copenhagen and Beyond*, June 2009, [http://www.canadaschoolofenergy.com/files/csee/Banff\\_Summary%20-%20All%20sessions%20final.pdf](http://www.canadaschoolofenergy.com/files/csee/Banff_Summary%20-%20All%20sessions%20final.pdf)

### **Canada West Foundation**

Canada's Power Play, The Case for a Canadian Energy Strategy for a Carbon-Constrained World, Canada West Foundation, September 2008,  
[http://www.cwf.ca/V2/files/Canada's\\_Power\\_Play1.pdf](http://www.cwf.ca/V2/files/Canada's_Power_Play1.pdf)

National Energy Security from an Exporter's Perspective: The Canadian Experience, Canada West Foundation, December 2008, <http://www.centerforenergy.ca/Documents/Feb2009-NationalEnergySecurity-FINAL.pdf>

### **Canadian Chamber of Commerce**

Canadian Energy: A Valuable Resource, May 2009,  
<http://www.chamber.ca/images/uploads/Reports/canadian-energy.pdf>

Powering up Canadian Prosperity: Realizing the Energy Sector's potential and ensuring continued access to a stable, secure, clean and flexible supply of affordable energy, October 2009,  
[http://www.chamber.ca/images/uploads/Reports/Energy\\_Paper-low.pdf](http://www.chamber.ca/images/uploads/Reports/Energy_Paper-low.pdf)

### **Canadian Council of Chief Executives**

*Economy, Environment and Security: Taking the Canada-United States Relationship to a New Level*, February 2009, [http://www.ceocouncil.ca/en/view/?document\\_id=1319](http://www.ceocouncil.ca/en/view/?document_id=1319)

*Expectations for the International Climate Conference*, February 2009,  
[http://www.ceocouncil.ca/publications/pdf/test\\_2b6fe71a585ded1300fcddace863ba1b/Climate\\_Change\\_Roundtable\\_Joint\\_Statement.pdf](http://www.ceocouncil.ca/publications/pdf/test_2b6fe71a585ded1300fcddace863ba1b/Climate_Change_Roundtable_Joint_Statement.pdf)

### **Canadian Policy Research Network**

*Environmental Justice in Canada – It Matters Where You Live*, December 2008,  
[http://www.cprn.org/documents/50875\\_EN.pdf](http://www.cprn.org/documents/50875_EN.pdf)

Green Building and Development as a Public Good, June 2009,  
[http://www.cprn.org/documents/51433\\_EN.pdf](http://www.cprn.org/documents/51433_EN.pdf)

*How to Build Green for a Healthy Future*, August 2009,  
[http://www.cprn.com/documents/51719\\_EN.pdf](http://www.cprn.com/documents/51719_EN.pdf)

### **Centre for International Governance Innovation**

*Breaking Global Deadlocks Meeting Report*, Environment, Climate Change and Global Governance, February 2008,

<http://www.cigionline.org/sites/default/files/Breaking%20Global%20Deadlocks%20I.pdf>

Environmental Sustainability and the Financial Crisis: Linkages and Policy Recommendations, September 2009,

[http://www.cigionline.org/sites/default/files/Environmental%20Sustainability%20and%20the%20Financial%20Crisis\\_0.pdf](http://www.cigionline.org/sites/default/files/Environmental%20Sustainability%20and%20the%20Financial%20Crisis_0.pdf)

### **Conference Board of Canada**

A Canadian Climate Change Strategy, Getting the Basics Right, June 2007

Canada's Energy Future, An Integrated Path, June 2007

Carbon Disclosure Project Report 2008, November 2008

Carbon Disclosure Project Report 2009, October 2009

Environmental Technologies Sector Profile, May 2007

Making Canada More Competitive, Improving Major Project Regulation in Canada, September 2008

U.S. Climate Legislation Implications and Prospects, Challenges for Canada, November 2009

### **David Suzuki Foundation**

*Bridging the Divide: The Role of Canada and Major Developing Countries in a Strong Climate Deal*, May 2009, [http://beta.davidsuzuki.org/downloads/2009/Bridging\\_the\\_Divide.pdf](http://beta.davidsuzuki.org/downloads/2009/Bridging_the_Divide.pdf)

Deep Reductions, Strong Growth: An Economic Analysis showing that Canada can Prosper economically while doing its share to prevent dangerous climate change, December 2008 (with Pembina Institute), [http://www.davidsuzuki.org/files/reports/2020\\_preliminary\\_modelling-final-Dec08.pdf](http://www.davidsuzuki.org/files/reports/2020_preliminary_modelling-final-Dec08.pdf)



## Energy Framework Initiative

A Collaborative Approach to Inter-Governmental Engagement, September 2009,  
[http://www.energyframework.ca/assets/files/A%20Collaborative%20Approach%20to%20Inter-Governmental%20Engagement%20-%20Pillar%206\\_FINAL.pdf](http://www.energyframework.ca/assets/files/A%20Collaborative%20Approach%20to%20Inter-Governmental%20Engagement%20-%20Pillar%206_FINAL.pdf)

The Energy Framework Initiative: A Proposal for an Integrated Energy Policy Framework for Canada, December 2009,  
<http://www.energyframework.ca/assets/files/Policy%20Doc/Policy%20Paper%20December.pdf>

## Institute for Research on Public Policy

*Climate Change, Competitiveness and Environmental Federalism: The Case for a Carbon Tax*, June 2008,  
[http://www.irpp.org/miscpubs/archive/tjc\\_canada2020.pdf](http://www.irpp.org/miscpubs/archive/tjc_canada2020.pdf)

*The New Northern Policy Universe*, August 2009,  
<http://www.irpp.org/books/archive/AOTS4/conclusion.pdf>

## International Institute for Sustainable Development

*Embodied Carbon in Traded Goods*, June 2008,  
[http://www.iisd.org/pdf/2008/cph\\_trade\\_climate\\_carbon.pdf](http://www.iisd.org/pdf/2008/cph_trade_climate_carbon.pdf)

International Carbon Market Mechanisms in a Post-2012 Climate Change Agreement, May 2009  
*Market Mechanisms for Sustainable development in a Post-2012 Climate Regime: Implications for the Development Dividend*, March 2008, [http://www.iisd.org/pdf/2008/implications\\_dev\\_dividend.pdf](http://www.iisd.org/pdf/2008/implications_dev_dividend.pdf)

State of the Carbon Market: How the future market can encourage developing country participation, March 2009, [http://www.iisd.org/pdf/2009/state\\_carbon\\_future\\_market.pdf](http://www.iisd.org/pdf/2009/state_carbon_future_market.pdf)

*Status of the UNFCCC Negotiations: Outcomes of the Bonn Climate Change Talks*, March-April 2009, May 2009, [http://www.iisd.org/pdf/2009/status\\_unfccc\\_bonn.pdf](http://www.iisd.org/pdf/2009/status_unfccc_bonn.pdf)

*The Financial Crisis and Our Response to Climate Change*, November 2008,  
[http://www.iisd.org/pdf/2008/com\\_financial\\_crisis.pdf](http://www.iisd.org/pdf/2008/com_financial_crisis.pdf)

## **National Round Table on the Environment and the Economy**

*Achieving 2050: A Carbon Pricing Policy for Canada*, April 2009, <http://www.nrtee-trnee.com/eng/publications/carbon-pricing/carbon-pricing-advisory-note/carbonpricing-advisory-note-eng.pdf>

*Gearred for Change, Energy Efficiency in Canada's Commercial Building Sector*, January 2009

*Getting to 2050: Canada's Transition to a Low-emission Future*, January 2008, <http://www.trnee-nrtee.ca/eng/publications/getting-to-2050/Getting-to-2050-low-res.pdf>

## **The Pembina Institute**

*Cap and Trade Policy Design: Key Issues*, January 2009, <http://pubs.pembina.org/reports/capandtradepolicydesign-jan2009.pdf>

*Comments on the proposed Federal Offset System, Canada's Offset System for Greenhouse Gases*, August 2008, <http://pubs.pembina.org/reports/offsets-submission-final.pdf>

*Heating up in Alberta*, Climate Change, Energy Development and Water, February 2009, <http://pubs.pembina.org/reports/heating-up-in-alberta-report.pdf>

*Highlights of Provincial Greenhouse Gas Reduction Plans*, August 2009, <http://pubs.pembina.org/reports/highlights-of-provincial-greenhouse-gas-reduction-plans.pdf>

*Oil Sands Myths, Clearing the Air*, June 2009, <http://pubs.pembina.org/reports/clearing-the-air-report.pdf>

*Our fair Share, Canada's role in Supporting Global Climate Solutions*, April 2009, <http://pubs.pembina.org/reports/our-fair-share-report.pdf>

*The Pembina Institute's Perspective on Carbon Capture and Storage (CCS)*, February 2009, <http://pubs.pembina.org/reports/pembina-perspective-ccs-feb-19-09.pdf>

## **Public Policy Forum**

*Continental Dynamics of energy and Climate Change: Policies and Politics*, June 2009, [http://www.ppforum.ca/sites/default/files/climate-Change\\_summary\\_2009\\_0.pdf](http://www.ppforum.ca/sites/default/files/climate-Change_summary_2009_0.pdf)

*The British Columbia Regional Citizens' Forum on Clean Air*, June 2001,  
[http://www.ppforum.ca/sites/default/files/public\\_voice\\_BC\\_air\\_quality.pdf](http://www.ppforum.ca/sites/default/files/public_voice_BC_air_quality.pdf)

## **Sustainable Prosperity**

*"Hybrid" Carbon Pricing, Issues to consider when carbon taxes and cap-and-trade systems interact*, April 2009,  
<http://www.sustainableprosperity.ca/files/Hybridpricing.pdf>

*Principles for Pricing Carbon*, April 2009,  
<http://www.sustainableprosperity.ca/files/Carbon%20Principles.pdf>

*Reframing the Environmental Pricing Dialogue, A Social Values Roadmap for Canada*, February 2009,  
[http://www.sustainableprosperity.ca/files/Keith%20Neuman\\_%20SP%20Social%20Values%20Roadmap\\_1.pdf](http://www.sustainableprosperity.ca/files/Keith%20Neuman_%20SP%20Social%20Values%20Roadmap_1.pdf)

*SP's Principles for Carbon Pricing: How Do Current Canadian Policies Stack Up?*, April 2009,  
<http://www.sustainableprosperity.ca/files/scorecard.pdf>