



# 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*

A call by the Canadian Chamber of Commerce for a  
Canadian Sustainable Energy Strategy

October 2009



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## **An *URGENT CALL TO ACTION*** **from the Canadian Chamber of Commerce**

The world's energy system is at a crossroads. Current global trends in energy supply and consumption are patently unsustainable—environmentally, economically, socially. But that can—and must—be altered; there's still time to change the road we're on.

**International Energy Agency**  
**World Energy Outlook, 2008**

Unless energy producers, energy users and governments of all orders start working together now to develop a Canadian Sustainable Energy Strategy, we will give away our single biggest competitive advantage in the global marketplace. Guaranteed.

By designing and implementing a comprehensive energy policy, we can lower the cost of energy and improve Canada's productivity and, therefore, its international competitiveness. We will see the benefits in every sector of Canada from health care to manufacturing, from education to agriculture, from transportation to the environment. More importantly, every one of us will feel it in our quality of life.

The Canadian Chamber of Commerce, Canada's largest and most influential business association, is inviting energy-industry leaders, energy users and governments of all orders to join the Chamber to develop a Canadian Sustainable Energy Strategy, one that will ensure we have access to a stable, secure and flexible supply of affordable energy now and in the future.

In Canada, we have all the elements necessary to achieve this. But it won't happen by accident. The urgent need for action on climate change, on the renewal of our crumbling energy infrastructure and on the shifting mix of energy sources require massive investment decisions to be made in the near term. These decisions will have an impact on Canada's prosperity for the next 50 years. The current policy framework is simply inadequate to deal with these issues and, if unchanged, will lead to the wrong decisions. It is essential that we take deliberate measures to turn this around. And we must start *now*.



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*Powering up Canadian prosperity*

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## Time for action: The clock is ticking...

*It is not an exaggeration to claim that the future of human prosperity depends on how successfully we tackle the two central energy challenges facing us today: securing the supply of reliable and affordable energy; and effecting a rapid transformation to a low-carbon, efficient and environmentally benign system of energy supply. What is needed is nothing short of an energy revolution.*

### **International Energy Agency (IEA) World Energy Outlook, 2008**

Canada is blessed with an abundance of energy resources. Enough to satisfy our own needs, enough to make it available for others. For many decades, that's exactly what we have done—and we've done it well. We've built an enviable standard of living for more than 32 million people. The energy sector has been a major contributor, mostly as a result of developing oil, natural gas and hydroelectric energy sources, and selling off what we don't use.

The energy sector is one of the cornerstones upon which our country has been built. And it continues to play a critical role for Canada, not just because of the significant trade implications, but because it touches us all...

- the rural Newfoundland farmer who puts diesel in his truck to deliver his produce to his customers in Green Island Cove;
- the owners of a mine in northern Quebec who need energy to run the operation and supply hundreds of jobs to people in the community;
- the Toronto real-estate manager whose energy purchases keep her tenants warm in several downtown high-rise buildings during the winter;
- the oil-industry worker who enjoys the benefits of living in Newfoundland and working in Fort McMurray; and
- the steel worker in Sault Ste. Marie, Ontario, who makes pipe for use in the oil sands of Northern Alberta.

Every one of us is linked in a significant way to the energy sector. Without access to energy—and all its spin-off technologies—our economy would simply not function.

### **Energy does more than just keep the lights on**

The energy sector contributes significantly to Canada's economy.

- It accounts for 5.6 percent of our GDP (a total of \$70 billion).
- It spends \$68.9 billion on capital repair and replacement annually (representing 35 percent of total private-sector investment).
- It directly employs more than 372,000 people and employs many more in related industries.

SOURCE: National Energy Board, *Canadian Energy Overview 2007*, May 2008

## The changing landscape

Some have asked, “Why is change necessary? Haven’t we done a good job so far of ensuring a good supply of energy at home and brought significant wealth to all Canadians from our energy exports? Haven’t we been successful?”

Yes, we have been successful. Very successful. But the world is changing. And so are our needs and priorities. Significantly. And it’s happening more rapidly than ever before.

- Demand for energy is increasing, both at home and around the globe. With our current, developing and yet-to-be-commercialized energy sources, we have the ability to satisfy a large part of that demand—*if we plan for it*.
- The need to protect the environment can no longer be denied. We can enjoy the benefits of a stable, secure and flexible supply of affordable energy and a healthy environment—*if we plan for it*.
- With growing global competition, the need to find jobs across all sectors for a growing number of Canadians is becoming increasingly difficult. But we can do it—*if we plan for it*.
- Canada must be more competitive in the global marketplace. The energy sector can help us achieve this—*if we plan for it*.
- Our world is becoming ever more dependent on technologies in every sector—from medicine to telecommunications. The energy sector can be a large source of that innovation—*if we plan for it*.

Developing a strategic plan also means dealing with more pressing issues.

- Much of the electricity production infrastructure created during the post-war construction boom between 1950 and 1980 is now reaching the end of its useful life and will require massive investments for replacement or refurbishment within the next few years. We must be open to new technologies that will allow us to provide electricity with lower environmental and economic costs.
- Pipelines for oil and gas will need to be expanded and new ones built. This will require large capital expenditures, smart regulation, timely regulatory approvals and policy certainty for those making those expenditures.
- We need to find the answer to a problem that plagues many industries: a shortage of skilled labour.
- While it made perfect sense historically, today we are handcuffed by infrastructure that restricts our exports to one foreign market: the United States. New markets will mean more exports and remove the risk that comes from having a single customer.

## The Canadian Chamber of Commerce takes a lead role

As Canada’s largest and most influential business association, the Canadian Chamber of Commerce—independent of government—is uniquely qualified to spearhead this initiative. Its track record of moving people to action by mobilizing the voice of business from every region of Canada makes the Canadian Chamber the best choice—perhaps the only choice—to move this strategy forward. We will lead by bringing stakeholders together, balancing competing interests and working to put in place a national energy strategy one that will benefit the producers, the users, the governments—all Canadians.



- We must address immediate environmental concerns:
  - The mitigation of the adverse environmental effects of all energy developments ranging from the oil sands to new wind farms.
  - The reduction of greenhouse gases, a long-term challenge that requires a regulatory solution with an incremental approach beginning in the near future and will likely raise energy prices and thereby drag on Canada's productivity and international competitiveness.
  - Low-water reservoir levels that have severely curtailed electricity exports from major hydroelectric provinces including Quebec, British Columbia and Manitoba.
  - The critical need to drive research, development and the commercialization of new technologies that limit energy environmental impacts from development through to end-users
- There is a general lack of understanding, both in both Canada and in the United States about the strategic importance of Canadian energy supplies to each country's competitiveness and this shortcoming has set the stage for bad policy-making.
- Regulatory complexity and delays in a multi-jurisdictional regulatory environment create unpredictable and unacceptably long lead times for capital investments in energy projects.
- Businesses face serious challenges in getting access to land for everything from petroleum exploration through development of electricity transmission infrastructure.
- For any large energy project, there is a need to address community and public concerns, including those of First Nations. Consultation for new projects and existing infrastructure is an extremely challenging undertaking and growing in its complexity and unpredictability. Improving relationships with communities and First Nations will require a high level of understanding of all parties' situations, demands and opportunities, and will require additional resources of people and funding.

If we don't start planning strategically—that is, if we don't put together a plan of action that carefully and deliberately considers what is best for both the producers and users of energy—we will cripple the Canadian industry as a whole and jeopardize our very standard of living.

### **Changing the regulatory environment**

Among the many challenges just listed, one bears highlighting. Perhaps the biggest challenge to developing any new sources of energy is the uncertainty involved in regulatory approvals and processing times. To be blunt, the regulatory process for major projects in Canada is broken and needs to be fixed quickly.

We firmly believe that in the best interest of the environment, processes should bear due consideration in regulatory approvals. We must, however, strike a better balance to ensure timely, predictable and affordable approvals and processes.

# Powering up Canadian prosperity

## Together, we can change our world

The Canadian Chamber of Commerce is calling on those who influence the industry—energy producers, energy users and governments—to come together to develop a **Canadian Sustainable Energy Strategy** that will ensure

- we can satisfy our energy requirements while protecting the environment;
- we are able to leverage our energy abundance into sustainable, value-added industries;
- our energy industry flourishes with strong competition among energy sources that drive innovation and consumer choice;
- we are competitive in global markets;
- the stage is set for job creation in the energy sector and related industries; and
- the development of new technologies that can be used to increase the Canadian standard of living.

The energy sector is an area of shared government jurisdiction. The federal government and the provinces and territories all have roles to play and must work together to achieve our common objectives. We are not looking for a top-down prescriptive approach, but a cooperative one that involves all stakeholders.

The Canadian Chamber of Commerce believes that without a **Canadian Sustainable Energy Strategy**, we are risking the prosperity of generations to come.





## Canada: An energy powerhouse

*Canada is exceptionally well positioned throughout the 21<sup>st</sup> century with respect to the wise and sustainable supply and use of energy. Today, Canada meets the World Energy Council objectives of energy Accessibly and Availability, and meets or is progressing rapidly to meet all aspects of energy Acceptability.*

### **Energy Policy Scenarios to 2050 North American Report November 2008**

On the world stage, Canada has the potential to be nothing short of an energy powerhouse. Every province and every territory produces energy from such diverse sources as oil, natural gas, hydro, wind, nuclear, coal, waste conversion and even tidal power.

Energy lights our homes, keeping us warm in the winter and cool in the summer. It helps us get to work, to school and to the cottage on the weekend. It powers more than our vehicles—it fuels our economy and our enviable standard of living. Without it, our economy would come to a standstill (see Table 1).

According to the International Energy Agency, Canada is the world's fifth-largest producer of energy. Even more importantly, we are a *rapidly growing* source of energy. Only China, the United States, Russia, and Saudi Arabia produce more energy than Canada.

Canada is the world's largest producer of uranium fuel for nuclear-power generation, second-largest producer of hydroelectricity, third-largest producer of natural gas, seventh-largest producer of oil, and seventh-largest producer of electricity.<sup>1</sup> Increasing oil sands production is expected to make Canada the world's fourth largest crude oil producer within ten years.

### **Tidal power**

Until recently, the most common way to harness tidal-power technology was to build a large dam across a river or outcropping of land. The dam funneled water into the generating plant and through a large turbine as it flowed in and out with the tide.

Today, engineers are developing tidal technologies that do not require dams or head ponds. These include offshore floating tidal turbines and turbines that are anchored to the ocean floor. Resembling wind turbines, they take advantage of natural tidal flows. A recent study by the Electric Power Research Institute has singled out the Bay of Fundy as one of the best spots on the planet to deploy this new technology.

#### **Nova Scotia Power**

<sup>1</sup> Source: *Key World Energy Statistics 2008*.

**Table 1. Energy production in Canada**

	Crude oil	Natural gas	Oil sands	Refinery	Nuclear	Tidal	Hydro-electric	Coal mine	Wind farm	Thermal electric	Uranium mine
BC	●	●		●			●	●			
AB	●	●	●	●			●	●	●	●	
SK	●	●	●	●			●	●	●	●	●
MB	●						●		●		
ON	●	●		●	●		●		●	●	
QC		●		●	●		●		●	●	
NB		●		●	●		●	●	●	●	
NS		●		●		●*	●	●	●	●	
PEI		●							●	●	
NL	●			●			●		●	●	
YT		●					●		●	●	
NU										●	
NT	●	●					●			●	

Source: Centre for Energy.

\* The Annapolis Tidal Power Plant is scheduled to come online in October 2009.

Conventional oil production is declining in Western Canada as a result of the maturity of the deposits and is predicted to drop an additional 25 percent by 2020.<sup>2</sup> At the same time, production of oil from other regions and from non-conventional sources such as the oils sands, is on the rise.

Between 1990 and 2007, oil-sands production in northern Alberta and Saskatchewan grew by 400 percent and now makes up about half of Western Canada's total crude oil production. By 2015, oil from the oil sands will be the source of 75 percent of all crude oil produced in Western Canada.

In 2007, Canada was the world's third-largest producer and second-largest exporter of natural gas. Production totaled 5.9 trillion cubic feet in 2007 and represented about one-quarter of combined Canada/U.S. natural gas production. Almost two-thirds of our natural gas production is exported.

### What are the oil sands?

Oil sands are deposits of bitumen, a heavy black viscous oil that must be rigorously treated to convert it into an upgraded crude oil before it can be used by refineries to produce gasoline and diesel fuels. At room temperature, it flows much like cold molasses.

**Alberta Energy**

<sup>2</sup> Canadian Association of Petroleum Producers. *Crude Oil Forecast, Markets & Pipeline Expansions*. June 2008.



Production from new, unconventional natural gas sources—for example, gas contained in hard-to-produce rock formations such as tight gas, shale gas and coal bed methane—is transforming gas markets in Canada and the United States. Today, these sources represent 45 percent of North America’s natural gas supplies and, with new technology driving shale gas development, could grow to 60 percent before 2020. This has broad implications for the industry, consumers and the global energy business.<sup>3</sup> Industry estimates suggest North America shale gas production alone could grow by as much as seven trillion cubic feet by 2015.<sup>4</sup> Canada’s competitiveness—both in terms of affordable and plentiful domestic gas as well as potential exports—will be influenced by changes in this dynamic market.

Coal production in Canada, primarily in Alberta, British Columbia and Saskatchewan totaled 69.4 million tonnes in 2007. Practically all of Canada’s metallurgical coal is exported—to 21 different countries—while almost all thermal coal is consumed domestically for coal-fired power generation. Canada also imports 22.6 million tonnes of coal annually, primarily from the United States.

Canada is the world’s seventh-largest producer of electricity with 615.3 billion kilowatt-hours produced in 2007. About 25,000 people are employed in the generation of electricity, and many more in activities associated with transmission and distribution. Canadians today consume about 20 percent more power than 15 years ago, and projections call for a 25 percent increase in generation capacity by 2025.

In Canada, electricity is generated from a diverse mix of sources including moving water (60.1 percent), coal (20.7 percent), nuclear (14.6 percent), oil and gas (4.0 percent), and internal combustion and renewable sources (0.6 percent). The predominant non-hydro renewable source is from biomass (including wood, waste, and alcohol fuels). Emerging sources such as wind, solar, and ocean power provide a small but an increasing amount of electricity.

### **Shale gas: A new source**

Massive reserves of natural gas (more than 1300 trillion cubic feet) have been found within shale, a fine grained organic-rich rock found in many parts of Canada. There are particularly large deposits in the Horn River Basin in British Columbia, but most other provinces contain significant deposits as well.

While production is in early stages, new technologies, such as horizontal drilling and multistage hydraulic fracture stimulation, are allowing Canadian companies to extract natural gas that was previously impossible or uneconomic to develop.

### **Need more insight?**

Further details about Canada’s energy production and use can be found in the Canadian Chamber of Commerce’s May 2009 report *Canadian Energy: A Valuable Resource*, available at [www.chamber.ca](http://www.chamber.ca).

<sup>3</sup> Cambridge Energy Research Associates (CERA), *Rising to the Challenge*, September 2009.

<sup>4</sup> U.S. Energy Information Agency, *Annual Energy Outlook, April 2009*; CERA, *Rising to the Challenge*, September 2009; Wood MacKenzie, *Unconventional Gas Gaining Momentum*, June 2009; Tudor Pickering Holt & Co., *US Natural Gas Supply Study, August 2009*; Barclays Capital, *100 Years of Gas – Part 1: Shale Gas, September 2009*.

## The economic engine: Energy touches all Canadians

The energy sector does not operate in isolation. What happens in the industry—from rising and falling prices to the development of new technologies—is felt across all sectors. To realize the full potential of our investment in the energy sector, we must consider and understand those impacts and exploit every opportunity to create jobs and to create prosperity—for all Canadians.

Energy touches every one of us, no matter where we live and no matter how we earn a living. Think about the energy that is needed:

- to produce the simple comforts of home, from the construction of your house to the appliances you use to feed your family, from your furniture to your bathroom fixtures;
- to construct our schools, hospitals, shopping centres and office buildings;
- to build our highways and fuel our vehicles, our airports and aircraft, our train stations and trains, our ports and our ships;
- to feed ourselves, from planting and harvesting on the farm through food production to the delivery of those products to our grocery stores and homes;
- to keep us healthy, from building and running research laboratories to the production of the medicines we use; and
- to make possible the activities we hold dear, from listening to the music we love to the lighting that allows us to read to our children in the evening after the sun goes down.

### The importance of energy

Energy is fundamental to the quality of our lives. Nowadays, we are totally dependent on an abundant and uninterrupted supply of energy for living and working. It is a key ingredient in all sectors of modern economies.

**European Commission**

The energy sector is also important to our economic well-being because of its ability to create jobs. In 2007, it directly employed 372,200 people and accounted for 5.6 per cent of Canada's Gross Domestic Product.<sup>5</sup> As well, government revenues from land sales and royalties from energy production fund a significant part of the social infrastructure in many provinces.

Energy exports are an important part of our economy. In 2007, they accounted for 19.7 per cent (\$90 billion) of the total value of Canadian exports. The United States, our only customer is very concerned that its energy security is in question, and rightfully so given that many of its other suppliers are in unstable or potentially unfriendly parts of the world. As a stable and reliable source of energy, Canada is a strategic partner to the U.S. by contributing to its energy security while enhancing our own economy.

At the same time, diversifying our export markets for energy, especially oil and gas, will become increasingly important. Consumers around the world are thirsty for oil and gas and are looking for stable energy suppliers. According to the *World Energy Outlook 2008*, fossil fuels will account still for 80 percent

<sup>5</sup> National Energy Board. *Canadian Energy Overview 2007*. May 2008.



of the world's primary energy mix in 2030, down only slightly from today. Through increasing efforts to generate energy for domestic use from renewable and other alternative sources, Canada will have a growing capacity to export fossil fuels providing Canadian jobs across our nation as well as helping to improve our balance of trade.

To achieve this, Canada's energy infrastructure, including electricity grids, oil and natural gas pipelines and port facilities, must be modernized and expanded. This must be done prudently and efficiently and it should be done with an eye on economics, markets, alternatives and cost allocations.

### **The tremendous potential of spin-off technologies**

Another contribution energy makes to Canada's well-being and prosperity that doesn't get as much attention as it should, is its ability to produce spin-off technologies. In fact, this is where the energy sector may have the greatest impact of all.

In terms of its ability to contribute in unexpected ways, our energy sector can be compared to the space program in the United States.

Correspondence about the space program in April of 1961 between President Kennedy and Vice President Lyndon B. Johnson made it clear that the goal was to beat the Soviets to the moon."<sup>6</sup>

What is often overlooked is that the real winners in the space race were—and continue to be—the American people. Little did NASA know at the time that the space program would lead to U.S. companies developing more than 1,600 documented technologies that also improved peoples' quality of life and resulted in thousands of new jobs. The space-shuttle program alone has generated more than 100 technology spin-offs. From land-mine-removal devices to prosthesis material and from home insulation to fire-fighting equipment, the shuttle program has had a tremendous impact on American citizens.<sup>7</sup>

We are world energy leaders. Energy development is *our* space program. The ongoing development of the energy sector is about far more than developing energy sources and creating jobs. By developing the technologies needed to extract and distribute our energy in a sustainable manner, there will be significant gains and we must exploit them in every way possible.

### **Wireless electricity**

Imagine if research in the energy sector led to what came to be known as "wireless electricity." No batteries, no wires. There would be no need to plug in your laptop, cell phone, MP3 player—or electric car. Just think about the impact on manufacturing, education, food production, office buildings, construction and every sector in Canada.

**The fact is:** MIT researchers are working on wireless electricity right now.

**The point is:** We don't know what the future holds. We do know that in times of fundamental shifts in technology, the long term benefits flow to those who invest in the future. Can we afford to sit by and watch those jobs flow to other countries because we didn't plan strategically?

<sup>6</sup> National Aeronautics and Space Administration, *Apollo: A Retrospective Analysis*

<sup>7</sup> National Aeronautics and Space Administration, *Space Shuttle Spinoffs*

# Powering up Canadian prosperity

We can do that only if we take a deliberate, strategic approach to the development of the energy sector.

One only has to look at the nuclear energy sector to find evidence of how spin-off technologies have already made a major contribution to our economy and our society.

The use of medical isotopes, which are now used in health diagnostics and treatment, is perhaps the best-known example of a successful spin-off. One radioactive isotope, cobalt-60, is used to sterilize 45 percent of the world's single-use medical instruments.

Similarly, the chemical industry uses by-products from the oil sands development to produce products such as insulation and recyclable plastics.

If we develop the energy sector with these opportunities in mind, the possibilities are endless. We can't even begin to know what might arise that will help shape our future.

## Green coal

There are enough coal reserves to fuel our world for centuries. Imagine a technology that would effectively cleanse coal of its pollutants *and* capture its greenhouse-gas emissions.

**The fact is:** Clean-coal research is now “a scientific conversation going on around the world,” according to Ottawa scientific researcher, Bruce Clements.

**The point is:** Although this technology is unlikely to be economically feasible within the next 10 years, Canada must invest in this and other new technologies that address climate change if it is to get a sizable share of the new-technology pie.





## A key competitive advantage: Ensuring a stable and secure supply of affordable energy

Canadians use more energy per capita than most OECD countries. This is understandable given our long travel distances, our long winters and an economy based partly on high-energy-consuming industries such as mining, forestry, petrochemical, pulp and paper, aluminum smelters, refining and steel manufacturing. It's no secret that historically, perhaps because of the abundance of energy resources in Canada, energy conservation has not topped our priority list. We can no longer afford to waste our natural inheritance.

Our geography, our climate and our economy, plus demand from our trading partners, means that Canada will need a growing supply of energy and not just from a single source.

Ensuring a diversity of energy supply will encourage needed competition and innovation and lead to the stability of our energy supply and exports. Having a wider range of energy sources is particularly important to ensure Canadian businesses continue to have access to affordable energy. This diversity of supply can also help us to mitigate future environmental impacts.

While there has been effort to reduce the use of fossil fuels, make no mistake about their continuing role in the energy mix. No matter how hard we work to conserve energy and to bring new sources on stream, oil and natural will remain the dominant source of energy for decades to come. Petroleum provides necessary fuel for all modes of transportation and natural gas is an efficient and economical fuel for providing peak power quickly as these units can be turned on and off as needed. If we abandon our ability to produce fossil-fuel energy to play this role, we would have to turn to outside sources that would largely sell us energy produced from fossil fuels.

With its ability to produce an abundance of low-emission electricity, nuclear energy is also a vital part of the electricity mix and Canada continues to benefit from its large supplies of hydroelectricity.

It is vital to ensure a stable, diverse and flexible energy supply that includes environmentally sound, cost-efficient uses of all available economic energy sources. Governments should facilitate exploration for and development of a variety of energy sources including conventional and non-conventional natural gas and oil reserves, hydro, nuclear and alternatives throughout Canada. And it should do so in a manner that ensures the viability of the project while minimizing the impact on the environment.

### **Canadian consumption**

According to Statistics Canada, about 40.1 percent of all energy consumed in Canada is from refined petroleum, followed by natural gas at 31.4 percent and electricity in third place at 24.4 percent. Even with the advent of alternative fuels, oil and natural gas consumption will remain part of the energy mix for the foreseeable future.

### **Oil and natural gas still rule**

Fossil fuels will account for as much as 80 percent of the world's primary energy mix in 2030, down only slightly from today.

# Powering up Canadian prosperity

The expansion and modernization of our electricity grid, including east–west transmission lines, will also provide a key part of Canada’s energy infrastructure.

While it makes the very large environment challenges even more difficult, progress is not achievable without a balance between the economic and environmental realities. The sustainability of Canada’s energy will improve over time as new technologies are developed and commercialized. Wind and solar are valuable alternatives to fossil fuels. As more generation is done in remote areas—especially for wind and other renewable resources—it becomes increasingly important that the electricity grid reach into these distant regions. The large capital and kilowatt costs as well as the inherent intermittent nature of these sources of electric power, will ensure they remain only a supplement—albeit an important one—to the grid for some time into the future.

## “Smart” grid

An essential improvement will be the development of a “smart grid” that is intelligent, auto-balancing, self-monitoring and would transform any source of fuel into a customer’s end use requirements with minimal human intervention. This will be critical to enabling a “greener” model with more distributed generation and will be a key part of our strategy for reducing carbon dioxide emissions.

Currently limited in their ability to offer an affordable and reliable source of electricity, alternative energy sources will need to be combined with nuclear, large-scale hydro or fossil-fuel generation to ensure a constant supply.

We must also recognize that in our pursuit of a stable supply of affordable energy, we face a variety of electricity-market structures in Canada. For example, electricity generation in Alberta is supplied by competitors who take the risk of generation development and who sell their electricity into a competitive market. Next door in Saskatchewan, electricity generation and sale is fully regulated and provided by a monopoly crown corporation. Although the goal of ensuring a stable and secure supply of energy is common, how the goal is achieved can vary depending on the market structure.





## Planning for the future: Energy, prosperity *and* a healthy environment

The energy sector and energy users are also important to Canadians because of the major role they will play in dealing with climate change.

Some would have us believe that the only road to environmental salvation is one where we close up the energy-producing plants—from oil and gas to coal and nuclear power—and replace them with green technologies. Some even suggest that the loss of jobs would be more than offset by new, so-called “green” jobs. While alternative energy sources must be encouraged and there is enormous opportunity for green technologies, the Canadian Chamber of Commerce has seen no evidence to suggest this offset is even remotely possible in Canada for decades to come.

### **Can we afford to protect the environment? YES.**

One thing the evidence does bear out is that energy is tied to prosperity. If Canadians want to enjoy prosperity and the standard of living they have come to expect, we must ensure we develop the energy sector to our best advantage.

It’s also clear that prosperity is tied to an ability to take care of the environment.

Globally, responding to climate change will take the biggest single investment in the history of humankind. It will be of monumental scale here in Canada, as well. We cannot simply tweak our way to success. And we cannot deal with climate change by eliminating consumption. That is simply not practical. It would cripple the economy, make it impossible to pay for the changes that are needed and destroy public support for strong environmental policies.

Regardless of the challenges, we must respond to climate change. The cost of global inaction would be catastrophic. We must commit to doing what is viable today and making *quantum leaps forward through technology*. The cost of this solution may be the most important reason to ensure we develop our energy sector strategically. From a sound energy sector comes the prosperity that will allow us to afford change.

### **Carbon capture and storage (CCS)**

This procedure involves capturing carbon dioxide from industrial sources and injecting it deep underground into geological formations such as depleted oil, natural gas or saline reservoirs for permanent storage. CCS is currently being used at some natural gas processing plants and, in the future, it could significantly reduce CO<sup>2</sup> emissions from coal-fired power plants or oil sands operations.

While very expensive at its current stage of development and with most applications being test of pilot projects, it is likely that CCS will form a significant part of Canada’s long-term path to lower greenhouse-gas emissions.

## **Striking a balance**

While there will be significant costs to action, Canada must start to act in concert with its major trading partners through a position that balances environmental leadership and Canadian competitiveness. Thoughtful, comprehensive energy and climate policies will help to secure economic prosperity and provide opportunities to innovate and succeed.

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. These measures must be put in place through a global agreement that includes all major GHG-emitting countries. This structure will drive needed investments and allow businesses to determine which sources of energy are truly economic over the long term.

Low-emission energy is an important component of ‘greening’ and is going to be a major focus for electricity generation and new fuels. It is important that energy be defined as “clean” or “low-emission” based on the quantified emissions and the actual life-cycle impact on the environment.

Incentives may be needed during any transition period as we go from “zero” to “full cost” for carbon dioxide and other greenhouse gases. During this period, all forms of energy that decrease the impact on the environment should be encouraged.

Most provinces have adopted or are considering the adoption of a “renewable energy portfolio” that sets a target for the percentage of renewable energy within the total energy output. These are needed medium-term measures that should become unnecessary once the full cost of carbon is included in energy pricing and energy sources with desirable environmental attributes can compete on a level playing field.

The development of renewable energy is still expensive and some technologies require subsidization and/or price support pending the maturation of the technology and the realization of economies of scale. Of course, it must be remembered that renewable energies also come with environmental impacts that must be managed.

Fossil-fuel electricity generation will continue to be an important part of the energy mix and the strategy that maps out the energy sector’s future must recognize this need. Attracting future investments in Canada requires that we do not strand large assets by imposing unbearable new costs that would not have been contemplated by their owners when the plants were initially built.

A strategy must also actively encourage significantly greater research and development investments in technology, services and processes that reduce the environmental impact of energy production, distribution and usage.

This strategy should include emissions being measured on a life-cycle basis (including emissions related to the building of the infrastructure, operating emissions, emissions from transmission and distribution and emissions resulting from decommissioning at end-of-life). Emissions that are captured and not released to the environment should not be counted under any emission-reduction regulatory scheme (for example, CO<sup>2</sup> capture or safe nuclear waste storage).



Because one of the goals of the Canadian Sustainable Energy Strategy is the overall reduction of GHG emissions, there must also be a system of offsets for any emission-management system. If emissions can be offset by reduced emissions (or emissions capture) elsewhere, the overall effect on the environment is positive and should be encouraged.

One of the most successful energy-efficiency programs has been the Canadian Industry Program for Energy Conservation (CIPEC). A unique industry–government partnership, CIPEC has been committed to promoting and encouraging energy efficiency improvements and reductions in greenhouse gas (GHG) emissions since 1975.

Through CIPEC, the mining, manufacturing and construction sectors have voluntarily met and exceeded annual targets to reduce their energy intensity. Oil and gas companies have implemented projects to reduce greenhouse gas emissions by millions of tonnes while electrical utilities have dramatically increased their alternative-energy production.

Conserving energy saves money and results in lower greenhouse gas emissions. It is in industry’s self interest to continue to work toward improving energy efficiency. While much of the “low hanging fruit” has been picked by many larger businesses making further gains more costly, more must be done to find substantial improvements in their processes. Significant opportunities still exist within small- and medium-sized businesses, individuals and governments for energy-consumption improvements.

There are also numerous opportunities for increasing the efficiency of energy use, both in the production of energy and in the development and implementation of new infrastructure. For example, by harnessing the waste heat from such sources as thermal electricity generation and natural-gas-fired compressors, the energy can be used for other processes such as district heating processes.

Access and competition for funding for energy efficiency projects is also an issue. Energy-efficiency project costs can often be amortized over time. Too often, that payback period is simply too long. Since those projects compete with other business investments and projects that may have shorter payback times, energy efficiency is often put aside in favour of other business interests. Governments should continue their support for energy-efficiency programs that can tip the scale in favour of needed changes.

To be successful, any strategy for the energy industry must focus on ensuring a competitive business environment. We must encourage an energy-neutral policy framework that promotes growth in both existing energy sources and the development of new, alternative forms of energy on the basis of their ability to meet objective environmental and economic standards.

We must allow science and economics, not our political biases, to decide winners and losers with respect to forms of energy. We will need the development and expansion of all available economic energy sources. Competition, aided by advances in new technologies, will encourage the best solutions to move forward.

## **The economics and politics of environmental policy**

Governments the world over are responding to the demand for strong and effective action to counter climate change. From the Canadian business perspective, the question is not whether there will be a strong response to the threat of climate change, but what form it will take.

Businesses understand their customers' expectations that they act in an environmentally responsible manner. Even in the absence of a coherent national climate-change strategy, Canadian businesses have poured billions of dollars into cutting waste and using green technologies and processes that will reduce their reliance on hydrocarbons. Many of those investments have already paid for themselves and made our businesses more internationally competitive.

The cost of fighting climate change will be massive, dwarfing the money spent to date on space programs throughout the world. Both businesses and individuals will have to bear that cost.

When businesses are making long-term commitments that can cost hundreds of millions of dollars, they need to know the rules and they need to know that those rules will not change in the dark of night. Having a strategy that is balanced, effective and fair is critical, and knowing what that strategy is, is critical for business *planning*. Many of our competitors have a much better sense of the rules that will affect them, and Canada's businesses need to know where they stand without greater delay.

The success of our economy will also depend upon our ability to capture our share of the new markets and new opportunities that will be created for Canadian green technologies and services. We need a Canadian strategy to develop and market those technologies.





## Regulatory turbulence: Current system too time-consuming, unpredictable

Business needs clear, consistent and predictable rules so it can invest the hundreds of billions of dollars needed to produce energy and protect the environment over the next decade.

As stated in the introduction to this document, the Canadian Chamber of Commerce believes the regulatory process is broken and needs to be fixed. And it needs to be fixed quickly.

The time it takes for approvals and processing must be shortened considerably. As importantly, the processes must be predictable and affordable. As it currently stands, for many projects, it takes longer to get permits than it does to build the project. Lead time is often as much as ten years. In some cases, it's even longer.

As well, far too many processes run sequentially, rather than in tandem. Regulators at all levels of government must make an unequivocal commitment to both streamlining the process and removing duplication.

As just one example, an environmental impact and facilities design-and-construction review could be run at the same time, rather than in sequence. This applies to all stages of the regulatory process, including the reporting of emissions—multiple and inconsistent reporting requirements for the various levels of government creates confusion and increases costs.

It's important to note that streamlining does not mean bypassing or eliminating necessary regulations or the processes that go with them. Industry benefits if the public has confidence that all voices have been heard and all reasonable efforts have been made to make the right choices from a societal perspective.

Government regulations should be designed to avoid disincentives to innovative approaches to environmental performance improvements. For example, combining electricity generation and heat production into one facility (co-generation) often creates more emissions than either activity would generate individually, but less than the sum of the two on an individual basis. Similarly, governments must avoid regulations that lead to perverse outcomes by not considering the lifetime costs associated with a project. For example, the failure to consider the cost of transmission to bring generation onto the grid could lead to bad choices about which generation projects will be built.

It is important to determine the role of the provincial/territorial and federal governments and to be sensitive to the pressures they face. All have a role to play but they must be complementary. It is essential for the federal and provincial/territorial governments to come to an agreement that gets past their jurisdictional squabbles so they can work together to establish firm commitments and concrete actions on regulatory reform. We need to avoid a patchwork quilt of competing regulations.

Thorough, transparent processes are in everybody's best interests. We do not advocate a reduction of needed regulations or a less-protective regulatory environment. What the energy sector needs is simple: a process that is more streamlined, predictable and affordable.

## **Building a Canadian Sustainable Energy Strategy: Guiding principles**

*“Canada is fortunate in that it can not only produce vast quantities of energy, but it produces and has the potential to produce energy from a wide array of sources. But simply selling our energy to others and living off the proceeds is not good enough anymore. We must start thinking strategically.*”

*“Energy production cuts across all sectors—and all sectors stand to benefit from taking a strategic approach. These are not just energy issues; they are broad economic issues, ones that touches us all and, if handled strategically, could turn us into an energy giant. I believe that working together, we can become the world leader in affordable, sustainable and leveraged energy.”*

**The Honourable Perrin Beatty  
President and Chief Executive Officer  
Canadian Chamber of Commerce**

Over the course of the development of the Canadian Sustainable Energy Strategy, there will be choices to make and recommendations to consider. There will also be differences of opinion. A well-informed, healthy debate that leads to a widespread commitment to a joint strategy is exactly what Canada needs. And it is exactly what will ensure that the strategy is as strong and as beneficial as possible to as many Canadians as possible.

However, before that debate even begins, there are a number of core principles that we believe should guide the development of the strategy.





## Principles

### **1 Canada must maintain a market-based approach to energy.**

Governments at all levels should rely on market forces to determine energy uses, which choices of energy forms should be used for different applications and which energy resources should be developed. This approach also involves giving Canadians free and open access to international energy markets and access to a full basket of domestic energy choices. Doing so ensures two things: that all forms of energy can compete on a level playing field; and that businesses are able to make decisions on energy use that are right for their particular circumstances.

Canada's future economic growth and prosperity will depend on its ability to remain competitive in an increasingly global marketplace. A market-based approach to energy will ensure that all viable forms of energy will be developed and that there will be sufficient supplies to meet the needs of Canadians in the future.

### **2 Canadians must continue to have access to a stable, secure, clean and flexible supply of affordable energy.**

Throughout history, there has been a direct correlation between energy use and prosperity. Our future wealth will come from more than simply selling energy to others, but also from ensuring an abundant and affordable supply of energy to Canadians and Canadian businesses. Ensuring a diversity of supply will encourage competition, innovation and energy security and will ensure that we have the prosperity that will enable us to invest in technologies that will help us to meet our needs in an environmentally responsible manner.

No single source of energy will be enough to meet the needs of Canadians and its export partners. We must develop all available forms of energy, from fossil fuels to nuclear, hydro, and alternative energy sources including wind, solar, waste-to-energy and others. Access to abundant domestic energy and the energy sector's spin-off economic gains, including hundreds of thousands of jobs, is clearly one of Canadians' biggest competitive advantages in the global marketplace. Despite a growing population, immigration and rising per-capita consumption rates, we must find a way to keep this advantage. It will happen only if there is affordable energy at our disposal.

## 3

### **Environmental regulations should ensure a level playing field for all energy sources.**

Government policies should set clear and consistent environmental performance standards for energy production and use, and not attempt to pick winners and losers. While Canada should support the development of mitigation technologies and new commercially-viable energy production, policies and regulations should not specify or prefer particular energy choices based on the source of energy. All energy forms should be free to compete as long as environmental standards can be met.

The Canadian Sustainable Energy Strategy must focus on ensuring a competitive business environment. It is imperative that we encourage a policy framework that promotes growth in both existing energy sources and in the development of new alternative forms of energy on a neutral basis. This is not an “either/or” issue—we must develop and expand all available economic energy sources and allow competition, aided by advancements in new technologies, to encourage the best solutions.

## 4

### **How we develop new and conventional sources of energy must balance the energy needs of Canadians and the need to protect our environment.**

The time for debate is over. Energy and environment are two sides of the same coin. Both producers and users of energy understand they have significant roles to play in protecting our environment. And they are willing to respond to an energy strategy that includes a balanced, predictable and viable environmental framework.

Thoughtful, comprehensive energy and environment policies will help secure economic prosperity and provide opportunities to innovate and succeed. Well-drafted legislation and regulations could spur innovation in new technology, help to create jobs, increase investment and provide the foundation for a vibrant lower-carbon economy. Internationally, Canada must work with its major trading partners in a way that rewards both environmental leadership and Canadian competitiveness.

## 5

### **Energy policies must recognize that energy is fundamental to the entire Canadian economy.**

Energy development does not happen in isolation. To realize the full potential of investments in the energy sector, policies must consider the impacts in other sectors and exploit every opportunity to create jobs and to create prosperity—for all Canadians. We must take a holistic approach to energy development that ensures access to multiple markets, allows us to build value-added industries and gives us the opportunity to be a global leader in sustainable development and usage.

Businesses from all parts of the country benefit from the development and commercialization of our energy resources. Canadians from coast to coast to coast are directly employed in energy projects and in industries within the energy sector supply chain. In particular, there are many opportunities for the



development and manufacturing of spin-off technologies and the value-added manufacturing processes both within and outside the energy industry (e.g., the chemical industry). We must take advantage of these in Canada.

## 6

### **Canadian prosperity depends on both maintaining a good trade relationship with the United States and on developing new international markets.**

Canada has a three-fold advantage in the energy trading world: we have an enviable energy supply; we are politically stable; and we live next door to the United States, a large user of our energy.

Both Canada and the U.S. have benefited from a long-standing continental approach to energy development and trade. To ensure Canadians continue to realize the positive and mutual benefits of this relationship, we must continue to work closely with the U.S. on a continental energy and environmental strategies while understanding we must also meet our needs to be competitive and prosperous.

Diversifying our export markets beyond the U.S. is also important. Consumers around the world are becoming thirstier for energy and seek a stable, long term supply. Canadian energy is in demand. Through increasing efforts to generate energy for domestic use from renewable and alternative sources, Canada will have a growing capacity to export energy. This will both provide Canadian jobs and help maintain our high quality-of-life.



## Let's start the conversation

Given the importance of developing the energy sector to ensure the long-term prosperity of Canada and given the need to do so in an environmentally responsible manner, the Canadian Chamber of Commerce calls on energy producers, energy users and all levels of government to come together to develop a **Canadian Sustainable Energy Strategy** that deals with the many, often competing, elements including:

- the critical need for skilled labour in the energy industry;
- provisions to address community and First Nations' concerns;
- finding the balance between Canada's energy security and protecting the environment;
- the development of the energy sector in a holistic manner, that is, in a way that maximizes the potential for spin-off technologies in the energy sector and other sectors;
- the development of value-added manufacturing both within and outside the energy industry and the manufacturing of alternative energy-generating products and components in Canada;
- the improvement, expansion and modernization of Canada's energy infrastructure, including an electricity smart grid, oil and natural gas pipelines and port facilities;
- the need to have access to abundant and cost-competitive energy for Canada's businesses and Canadian families;
- the exploration and development of all energy sources including conventional and non-conventional natural gas and oil reserves, hydro, nuclear and alternatives throughout Canada while minimizing the impact on the environment;
- 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;
- cooperation with our major trading partners through a position that balances environmental leadership and Canadian competitiveness and, specifically, the development of a global climate-change agreement that includes all major GHG-emitting countries;
- placing a price on greenhouse gas (GHG) emissions through a carbon tax, a cap-and-trade system or a combination of both;
- the development of a business and governmental strategy to identify the commercial opportunities that will flow from world-wide efforts to combat climate change;
- significantly greater research and development investments in technology, services and processes that reduce the environmental impact of energy production, distribution and usage;



- the identification of the best opportunities to improve energy efficiency where the market has not yet fully realized the efficiency and related environmental benefits;
- continued support of the Canadian Industry Program for Energy Conservation;
- an ongoing education strategy aimed at ensuring citizens in both Canada and the United States understand the Canadian energy sector's importance and widespread beneficial impact the Canadian energy sector has on their lives;
- a policy framework that promotes growth in both existing energy sources and the development of new alternative forms of energy on a neutral basis;
- policies that do not favour specific technologies but instead, support the development of all energy forms, including mitigation technologies and commercially viable renewable energy production, as long as they meet environmental standards; and
- the improvement of the regulatory environment to remove uncertainty, the cutting of waiting times for approvals and the harmonization of the process for launching new energy projects.



# Powering up Canadian prosperity

## Summary:

Tackling this issue as if our future depends on it

Change is here—*right now*. Are we able to cope with that change? Absolutely. Are we able to thrive amidst that change?

The answer is yes—*if we work together*.

Time is running out. Every day we don't have a well-thought-out, multi-partner plan in place is one more day we've fallen behind. Tens of thousands of jobs are at risk. The unknown damage to our gross domestic product if we don't act is incalculable and our ability pay for the needed environmental changes is in jeopardy. Remember, this is not just about energy. It's much bigger than that. This is about our *economy and the quality of our environment*.

A **Canadian Sustainable Energy Strategy** will allow us to continue to enjoy a stable, secure and flexible supply of affordable energy, ensure the viability of tens of thousands of jobs in both the energy sector and elsewhere, improve our ability to compete in the global market place, open up a world of possibilities and help us protect the environment.

The Canadian Chamber of Commerce believes that without **planning for the future**, we are risking the prosperity of generations to come.

Together, we must develop a **Canadian Sustainable Energy Strategy**. Our future depends on it.





## Next steps: Where do we go from here?

The Canadian Chamber of Commerce will work with all stakeholders to support policies that promote the development of Canada's energy sector, a clean and healthy environment, and an affordable, diverse and secure supply of energy.

### **Governments**

The continued development of the energy sector is critical to Canada's ongoing prosperity. We urge the 13 provincial and territorial governments and the federal government to come together as partners and work with the industry, business, consumers, community groups and First Nations to develop a comprehensive **Canadian Sustainable Energy Strategy** based on the principles outlined in this document. This approach includes putting sufficient resources in place to ensure vigorous consultation and enable this strategy to be put in place within the next 12–18 months.

### **Business**

The development of a shared energy strategy is in the interest of all Canadian businesses. Companies from all parts of Canada require a strong and vibrant energy sector to both meet their energy needs and provide customers for their products. We invite Canadian companies to consider the energy needs of their businesses, their industries and their communities and to actively participate in the Canadian Chamber of Commerce's efforts to develop industry's input into the advancement of the **Canadian Sustainable Energy Strategy**.

### **Community Stakeholders**

Input from community groups, First Nations and consumers will be essential for the development and success of a **Canadian Sustainable Energy Strategy**. We invite organizations from across the country to consider the needs of their communities, both in terms of jobs and the economy as well as in terms of protecting their local environment, to determine how best to assist in the development of the Canadian energy strategy in ways that will best serve Canada and its individual communities. We encourage community stakeholders to work with the many local chambers of commerce and boards of trade that will be working to move this agenda forward.

### **The Canadian Chamber of Commerce**

As the only association that represents business of all sizes and in all regions of Canada, the Canadian Chamber of Commerce has a special responsibility to provide leadership on this issue. This paper provides a framework for our ongoing efforts to champion a change of attitude in Canada. We must stop being complacent about our energy abundance and begin to look at our energy resources as the foundation to a stable, sustainable, secure and affordable energy supply that we can leverage into greater wealth and thousands of more jobs.

## *Powering up Canadian prosperity*

Full development of the energy sector, including its supply chain and related value-added industries, will improve our ability to compete in the global marketplace and ensure that Canada is the world leader in new energy technologies.

We are committed to carrying this message to Canadians, businesses and all levels of governments. As the voice of Canadian business, the Canadian Chamber of Commerce will lead this initiative by bringing together businesses of all sizes and from all sectors from coast to coast to coast.

As part of our ongoing vigorous public, government and corporate advocacy campaign, we will provide further details on specific elements of the strategy through a series of issue-specific papers starting in early 2010. . We invite businesses from across Canada to join with us to raise the profile of this issue, to develop thoughtful position papers that deal with the many complicated, and often competing issues surrounding Canada's energy industry, and to work with the Canadian Chamber of Commerce in the development of a **Canadian Sustainable Energy Strategy**.

To contribute to the process or keep informed as we move forward, we invite you to visit our website at [www.chamber.ca](http://www.chamber.ca)

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