

Canadian Electricity and the  
**environment**

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**Electricity and Climate Change** ■

**Managing Electricity Greenhouse  
Gas Emissions**

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Canadian Electricity Association

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## Canada's Climate Change Challenge

As a party to the Kyoto Protocol, Canada faces a daunting challenge. With five years to go before the onset of the 2008-2012 commitment period, emissions of greenhouse gases continue on a growth track of around one percent per year, reflecting steady declines in the greenhouse gas intensity of the economy, but insufficient to fully offset economic growth. This trend is deeply embedded in the economy and we will continue to see results of this sort for some years into the future no matter what action is taken today. The actions we can take today – those which are politically and economically practicable – will have modest effects. In short, absent large-scale purchases of foreign offsets, Canada will likely face the prospect by 2008 of being far short of its Kyoto commitments.

These physical, economic and political realities will be the backdrop when, around two years from now, Canada will be facing two serious tests of its international credibility on climate change. One will be the assessment of the adequacy of our commitments and the other will be the start of negotiations for the next commitment period or, possibly, new international arrangements designed to integrate the United States into a new global climate change management process likely under the auspices of the UN Framework Convention on Climate Change. Positioning Canada to derive advantage in these processes needs to become a top of mind matter today for government and business leaders alike.

Although the reality of emissions numbers cannot be made to disappear, we do have control over our domestic actions from this point forward. Canadians working together with a practical mindset and a will to act in the context of economic and political realities can make an effort which will be credible by any reasonable standard and will start moving us on to a long-term path toward a lower greenhouse gas future.

This position statement outlines what we believe should be the elements of such a course of action for the electricity sector.

## Back to Basics

For electricity, the course we take needs to begin with a clear understanding of what Canadians look for from their electricity systems. Above all, they look for electricity supply to be reliable. After that, they look for it to be affordable. And they look for it to meet several complex tests of environmental sustainability. What is not in question is the essential nature of electricity to both the economy and the quality of life of every Canadian. Every choice as to possible actions on climate change needs to be assessed against this backdrop.

Canada is fortunate to have an electricity supply infrastructure that has contributed importantly to our economic and social goals. Our resource choices are diverse and abundant, and as the future unfolds, those choices can be multiplied. However, nowhere is Canada's regional diversity more evident than in electricity, where resource endowments and the effect of investment choices made many decades ago, significantly affect the range of practical possibilities within different jurisdictions. We need to work with this reality.

Technological change has the potential to dramatically increase the choices available to us. New cleaner coal technology will likely start to become practical and economic by around 2015 and holds promise of effectively eliminating all emissions from fossil-fired production over the following decade. New nuclear technology, constantly improving wind power, ever more efficient gas turbines and distributed generation options all have significant promise as does the application of more energy efficient electricity consuming technologies in industry, business and homes. But the reality of technology investment is that it pays off over decades and we need to plan and invest now to enjoy the benefits of that investment in the future.



There are also important near-term options that capture some gains in the Kyoto commitment period. For example, new hydropower has a large potential over the next 5 to 10 years and other zero GHG sources such as wind can contribute at the margins. However, policy changes are needed including reduced timeframes and uncertainty related to regulatory approvals and the implementation of measures to provide GHG credits to low GHG power.

Canadians have a right to expect that their governments and their electricity suppliers will think ahead and act now with the long-term future in mind. We need to take steps now to ensure that the investment conditions are in place to expand and refurbish our electricity infrastructure. We need to invest today in developing the technologies and creating the policy conditions that will start significantly reducing greenhouse gas emissions well past the time of the first Kyoto commitment period at the same time as we start now reducing GHG emissions growth. Given the uncertainty inherent in long-term demand/supply forecasts, getting on the right emission trajectory is more important than fixing on the specific quantity targets.

An electricity climate change strategy accordingly, must be anchored in several principles:

- **Reliability, affordability and environmental performance are not alternatives – they are requirements.** Electricity intensive industries and the information and communication sectors count on reliable, affordable electricity when they make investment decisions. Also, one quarter of all the energy used by Canadians is electricity with no substitute in most applications.
- **We must build on regional realities and on the strengths of our past investment choices.** Electricity generators operate in different environments, each with different fuel resources and constraints. Forcing rapid change ahead

of technology advances and capital stock turnover would have divergent regional impacts. Ontario and the Atlantic provinces have a diverse mix of fuel sources while British Columbia, Manitoba and Quebec are rich in hydro resources. Alberta and Saskatchewan however, depend heavily on coal resources. If we are to minimize costs and build on the strengths of our past investment choices, we must invest in a portfolio of research reflecting regional realities including hydro, natural gas, and small-scale renewables as well as research, development and demonstration of clean coal technology.

- **We must work in a context where much of the investment in electricity is made in a competitive context and where private capital markets are the primary source of finance.** Increasingly, the electricity industry is functionally unbundled and looks to capital markets for investments to meet demand growth and to replace aging infrastructure. Efforts should be made to improve returns on investments and current capital cost allowance rates and eligibility criteria to better reflect North American competitive realities.
- **We must build and enhance low emitting fuel and technology diversity.** No technology or fuel should be overlooked. We need to consider a full range of options – traditional, emerging, and future technologies – in the coming decades. An over commitment on any one resource rivals supply and price volatility, which could be damaging to the economy.
- **We must act today for today but more importantly, for the longer-term future.** Moving to a low GHG long-term future depends on immediate steps to improve the investment climate as well as reducing regulatory and policy uncertainties.



## Elements of an Achievable Strategy

A climate change strategy for electricity that meets these principles would have the following elements:

### A stable, long-term emissions management framework with the following characteristics:

- A time horizon with objectives or targets 5, 10, 15 and 20 years from today thereby creating incentives for action now combined with realism about when significant results can be brought about.
- Commitments to reduce the net greenhouse gas emissions intensity of production so generators can focus efforts on areas over which they have the most control, and so that they are not penalized by economic growth over which they have no control.
- An intensity standard anchored in economic and technological reality but with mechanisms to adjust the standard as technology advances.
- A recognition that past investments made in good faith should not be stranded and should be subject to emission limitations only when they have reached a specified anniversary of their initial commissioning date.
- Provisions to ensure all new generation investment in Canada is subject to the same standard.
- Provisions which reward new investment that reduces emissions intensity below the standard, thereby creating economic incentives for new low GHG production.
- Provisions for offsets and trading tied into the larger framework for industrial emitters.

### A framework of related and complementary policy provisions.

- Incentives for electricity distributors to work with governments in helping to manage and reduce demand growth.

- Provisions to ensure both public and private investment in technology development
- Provisions to provide additional assistance to alternative generation technologies.
- Provisions to ensure a complementary framework for investments to reduce other air emissions
- Provisions for government and industry to work together to reduce tax barriers to capital stock turnover.
- Provisions for government and industry to work together for regulatory adjustments to facilitate the siting of hydroelectric capacity and transmission.
- Provisions for increasing transmission capacity to maximize system reliability and respond to trade opportunities.
- Provisions for recognition of early action taken by industry to date.

CEA has developed the Emissions Performance Equivalent Standard (EPES) proposal to governments which embodies all of these elements and which gives them concrete expression. This proposal has been under discussion since 2000.

CEA calls on both the federal and provincial governments to work with the electricity industry. The first step should be to discuss the principles and key elements as set out above. If agreement in principle can be achieved, the next step will be to move to more detailed negotiations.

## How to Build Such a Strategy

CEA believes the kind of strategy it has outlined can only be put in place through a process of industry-government dialogue and negotiation. We are pleased that the federal government has acknowledged such a process is preferable to a top-down command and control approach. We note as well that a number of provincial jurisdictions have concluded that an approach



built on dialogue and negotiation will best move the climate file in a positive direction. Clearly, it is vital that both the federal and provincial governments be constructively engaged if we are to achieve a viable outcome.

The approach to the strategy must itself have certain key elements:

- It must be framed in the context of a national registering, reporting, trading and compliance monitoring system covering all large industrial emitters.
- It must establish a framework agreement for the electricity sector in Canada that focuses on all power production but that also acknowledges the important role of other industry elements including transmission, distribution and customer service.
- The framework agreement must embody the essential rules that will cover all electricity production across Canada so as to ensure a level playing field.
- The framework agreement must include undertakings from governments that they will make reasonable efforts to put in place agreed and specified policy conditions which may be essential to achieving success in emissions management.
- Specific company undertakings based on the EPES principles and in keeping with the framework agreement would be set out in contractual arrangements

or covenants between companies and provincial governments.

### **Next Steps – Moving From Talk to Action**

CEA stands ready to engage with government in advancing the ideas set out in this policy paper. We have already put both the ideas and specific undertakings on the table and we have worked with government to ensure all parties understand what we can achieve and how we might best build and implement such a framework.

The structure we have outlined is workable. It creates a balanced set of incentives and disincentives and it is equitable in its effects. It achieves real results – including results within the Kyoto timeframe but more importantly, steadily growing results over the following decade. It reflects a strong consensus within Canada's electricity industry and therefore can be implemented with very little delay.

Canada has talked about climate change for over a decade. Canadian industry, including the electricity industry, has taken action and made progress. What we have not yet achieved is agreement on a framework to accelerate action and to ensure all efforts are aimed at ensuring Canada's electricity sector moves toward a very low greenhouse emissions profile over the coming decades. CEA believes what it has laid out is the basis for such an agreement.

