

review

News from the National Round Table on the Environment and the Economy

A Low-Carbon Future for Canada: The NRTEE Advisory Report on Energy and Climate Change



“Sustained, long-term action is the only way Canada can create significant reductions in GHG emissions, but we need to start now if we are going to bring about meaningful change.”

– Alexander Wood

*(Left to right) Alexander Wood, Acting President & CEO, NRTEE, Glen Murray, NRTEE Chair and Manon Laporte, President & CEO, Enviro-Access and NRTEE Member released the NRTEE’s **Advice on a Long-term Strategy on Energy and Climate Change** at a press conference held in Ottawa on June 21, 2006.*

- **Long-Term Energy and Climate Change Strategy: Canada and the World**
- **NRTEE Launches New Climate Change Adaptation Program**

It is possible for Canada to simultaneously make meaningful reductions in greenhouse gas (GHG) emissions while increasing productivity and competitiveness, improving air quality and meeting the energy needs of our growing economy—that’s the conclusion of a National Round Table on the Environment and the Economy (NRTEE) advisory report on energy and climate change.

The study, released June 21, focused on two questions: How can Canada protect and enhance its national interest with regard to energy and climate change issues between now and 2050? And what do we need to do right now to meet this long-term objective?

“This study is a first,” said NRTEE chair Glen Murray. “While other studies have described in general terms how climate change

will affect our economy and environment, this is the first detailed examination of what a low-carbon future might look like for Canada over the next half century.”

The study, part of the NRTEE’s Long-Term Energy and Climate Change Strategy, reports that:

- Using existing technologies, and even with a growing economy and increases in oil sands production,

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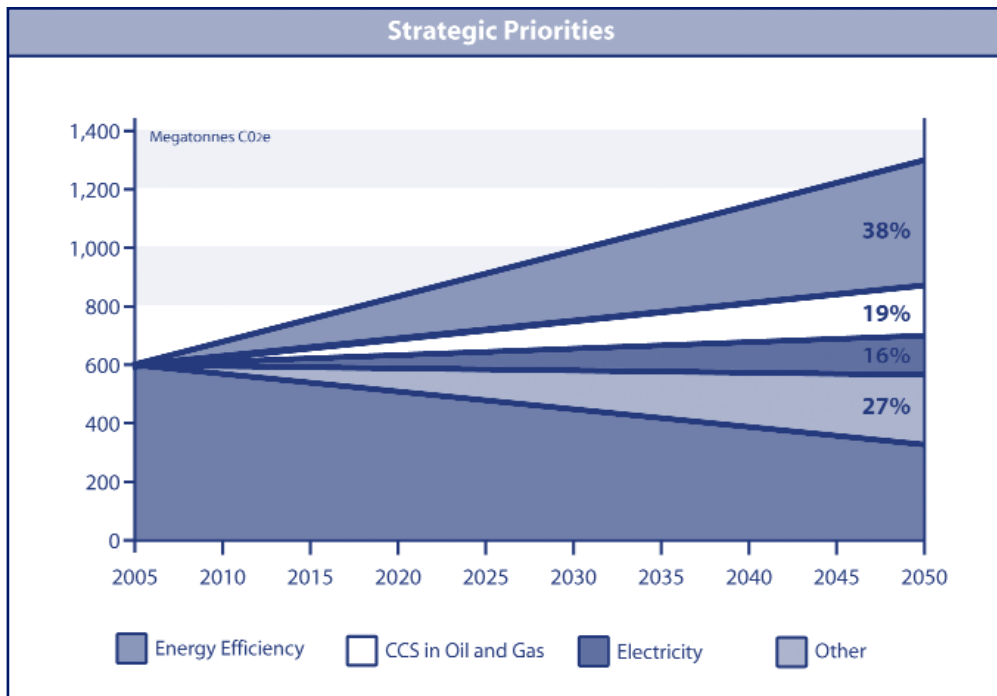
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National Round Table on the Environment and the Economy

Table ronde nationale sur l’environnement et l’économie

Canada



The Wedges

To present the scenario for a 60 percent GHG reductions to 2050 for energy-related sources, the NRTEE advisory report uses a wedge diagram to show how existing technology can meet the climate change challenge.

The wedges represent the amount of reduction of CO₂-equivalent that would be achieved per year by 2050. There are 31 wedges in the GHG Reduction Diagram for Canada, but the three strategic priorities are: energy efficiency improvements; carbon capture and sequestration in the oil and gas sector; and electricity generation.

These strategic priorities represent those wedges that so important that they become “make-or-break” issues for Canada. Failure to start implementing these technologies soon would impede our ability to make a significant reduction in GHG emissions, even in the long run.

To check out the comprehensive wedge diagram, please go Section IV of the advisory report. ■

What does Canada look like in 2050 under this scenario?

The advisory report assumes Canada has a population of about 45 million in 2050, a larger economy—more than double in real terms—and growth in oil and gas production that outstrips growth in domestic demand. The analysis is limited to existing technologies.

Personal use of energy

Housing density has increased and Canadian homes are much more energy efficient—solar heating and power systems are the norm. The majority of jobs are in services and light manufacturing, and these land uses are integrated into residential developments so that it has become more common to live and work in the same “walkable” neighbourhood or work at home a few days each week.

Canadians who travel to work are more likely to use public transit, which has become more efficient and convenient as a result of higher density and improved design. Personal vehicles get better mileage (averaging close to 80 mpg or 3.6 L per 100k) and are generally fueled by ethanol mixed with 15 percent gasoline.

Energy to drive the economy

Electricity is made by a much more diverse and widely distributed set of generators, including a greatly expanded role for local cogeneration and micro-turbine systems, wind power and other renewable sources. There is more east–west connectivity in the grid.

Freight distribution has not changed dramatically since the turn of the century, although efficiency has at least doubled and reliance on trucks is back to 1990 levels, with marine and rail transport picking up the difference.

The industrial structure of Canada has continued its gradual shift to manufacturing, service and high-tech manufacturing. Energy-intensive industries have increased their energy efficiency. While domestic energy demands have fallen, the oil and gas industry continues to produce at rates similar to those achieved at the turn of the century, exporting oil and gas to the US and the rest of the world. ■

Next Steps

The wedge diagrams in the advisory report show which technologies and actions can be combined to reach a particular GHG reduction target, but they don’t specify how these reductions can be achieved. So the NRTEE is now looking at costs and benefits of technologies associated with key wedges, policies to encourage the adoption of these technologies at the levels suggested in the analysis, and feasible ways to develop long-term GHG reduction policies.

The NRTEE is also initiating a national discussion through a series of half-day seminars in up to 10 cities across Canada between September 2006 and April 2007. These sessions will engage key players, using the wedge analysis and the advisory report’s key findings as a starting point to discuss this country’s long-term response to energy and climate change plus the potential roles of government and non-government players.

Analysis of this input will be forwarded to the Minister of the Environment. ■

Long-Term Energy and Climate Change Strategy: Canada and the World

The NRTEE believes that our response to climate change will have a big impact on our economic prosperity and competitiveness, social well-being, national security, energy security and sovereignty. And, given the huge potential impact of climate change on Canada's economy and environment, Canada can and should be an international leader in combating global climate change.

That's why the NRTEE is finalizing the international elements of its *Long-Term Energy and Climate Change Strategy*. Here's a quick overview of the strategy recommendations in the international report, scheduled for release in early fall.

Integrating Climate Change into Canada's Aid, Foreign Policy and Trade Policy

Climate change must be seen as directly intersecting Canada's traditional foreign policy—particularly in relation to sovereignty, security and global economic stability—as well as our trade policy and aid policy. Recommendations include, for example,

pursuing bilateral partnerships that serve multiple Canadian economic and environmental interests, making the Arctic a higher priority, mounting a sustainable energy strategy within the G8 and redeploying Canada's development resources for climate change control.

Trade Promotion Strategy for Climate-Related Technologies

The NRTEE believes there needs to be close alignment between Canada's national interest and any strategy for promoting the export of Canadian climate-change technologies.

Recommendations include: increasing the integration of existing Canadian trade promotion strategies and programs; creating and strengthening domestic technology platforms for demonstrating commercial success; reducing or eliminating Canadian content rules at early development stages; enhancing direct governmental support for strategic, early-stage market development activities; and, supporting an international trade regime that encourages the diffusion of environmental technology and expertise

through the World Trade Organization and the current Doha Development Round.

Carbon Markets and Linking a Canadian Market to International Markets

Access to global carbon markets, estimated to be worth \$3 trillion by 2020, is crucial for Canada. Carbon markets can make the carbon reductions inherent in a project serve the dual purpose of both helping finance the project and ensuring its value after the initial installation. However, any effective international market for carbon/GHG emissions must eventually include the US. Canada's policy priority should be the development of a market that includes the US, and the possibility of exploring North American carbon/GHG trading opportunities.

For more information on Canada's long-term international energy and climate change strategy, please consult our Web site at www.nrtee-trnee.ca. ■

NRTEE Launches New Climate Change Adaptation Program

The impacts of climate change are increasingly being felt in Canada.

Governments at all levels need to be proactive in helping to ensure that our communities and economic sectors have the capacity to adapt to climate change-related impacts. For this reason, the National Round Table is launching a new policy research program on climate change adaptation.

The program assumes that climate change impacts are intensifying and are here to stay, that there is a policy gap in addressing the impacts of climate change, and that as a national rather than a federal body, the NRTEE is well positioned to provide multi-jurisdictional advice on meeting this challenge. The NRTEE will be convening multistakeholder meetings

to consult experts in the diverse areas of policy targeted by the program.

The NRTEE believes that the federal government can play a significant role fostering across Canadian society the consideration of climate change impacts and adaptation as risk management issues. The Round Table has already identified four policy areas of likely significance in this regard: disaster management; insurance and alternative risk-spreading mechanisms; codes and standards; and, project finance and capital markets.

Research on climate change adaptation policy will be conducted in two phases. The first phase will involve preparation of a foundation paper that examines in broad terms the role of government in adaptation.

In the second phase, the NRTEE will develop policy recommendations aimed at

improving the integration of climate change-related impacts into risk management and decision making in Canada.

Defining "Adaptation"

"Adaptation" has been defined as adjusting natural or human systems, in response to actual or expected climatic stimuli, to moderate harm or exploit benefits. In the context of climate change, for example:

- anticipatory adaptation is implemented before a climate event;
- reactive adaptation occurs in response to a climate event; and,
- planned adaptation is the result of awareness of climate change and deliberate policy decisions, and can support anticipatory or reactive adaptation. ■

NRTEE Advisory Report, *continued...*

Canada can lower GHG emissions as much as 60 percent from today's levels by the year 2050.

- Energy policy in this century means addressing both energy use and energy production by increasing energy efficiency while reducing carbon intensity.
- Approximately 40 percent of the 60 percent reduction in GHG emissions could be achieved by increasing energy efficiency. The question is not which technologies to deploy, but how to deploy all the potential GHG reduction technologies, particularly in the areas of personal and freight

transportation, and residential and commercial buildings.

- Canada's growing role as a major energy exporter is compatible with deep GHG emissions, but only if carbon capture and sequestration (CCS) is perfected. Using this technology in the oil and gas sector could benefit Canada environmentally and competitively as a leading provider of energy to the world.
- To reduce GHG emissions by 60 percent, the electricity sector will need to be transformed between now and 2050. As with the oil and gas sector, CCS and clean coal technology will play important roles; so

will cogeneration and renewable energy, particularly wind energy.

- Reducing GHG emissions will significantly reduce air pollution as well as having other benefits.

The study underlines the need for a clear long-term signal, particularly to the private sector, that Canada is going to take action on climate change. ■

The full text of the Advisory Report to the Minister of the Environment is available at www.nrtee-trnee.ca.

NRTEE MEMBERS

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Toronto, Ontario

Vice-Chair

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Toronto, Ontario

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Stephen Kakfwi

Yellowknife, Northwest Territories

David Kerr

Chair
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Manon Laporte

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Sherbrooke, Quebec

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Denise Dinel-Larivière

Finance & Administration Clerk
Marie-France Brassard

Administrative Assistants
Denise Johnston
Denise Wilson

For more information, contact:
The National Round Table on the Environment and the Economy

Canada Building
344 Slater Street, Suite 200
Ottawa, Ontario • Canada K1R 7Y3
Tel: (613) 992-7189
Fax: (613) 992-7385
E-mail: admin@nrtee-trnee.ca
Web: <http://www.nrtee-trnee.ca>

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Printed on Ecofibre (Rolland) Canadian Environmental Choice, recycled paper, using vegetable inks.

Également publié en français
ISSN 1200-0442

